STRATEGIC PLANNING & TECHNOLOGY SUBCOMMITEE BOARD OF DIRECTORS MEETING

Meeting Notice:

The TARC Board of Directors holds a quarterly meeting of the Strategic Planning and Technology subcommittee. The next will be held at:

TARC's Headquarters, Board Room
1000 W. Broadway, Louisville, KY 40203

Wednesday, January 18, 2023 at 1:30 p.m.

This meeting is also being held via teleconference as permitted by KRS 61.826.

Pursuant to the Americans with Disabilities Act, persons with a disability may request a reasonable accommodation for assistance with the meeting or meeting materials. Please contact Ashlie Woods at 502.561.5108. Requests made as early as possible will allow time to arrange accommodation.

Agenda

I.	Call to Order	1:30
II.	Updates i. Project, Plan and Procurement Updates ii. Status and review of TARC Tomorrow	1:35 – 1:55
III.	Open Discussion	1:55 – 2:15
IV.	Proposed Agenda Items/Next Meeting Date	2:15 – 2:25
V.	Adjourn	2:30

STRATEGIC PLANNING AND TECHNOLOGY SUBCOMMITTEE

JANUARY 18, 2023

PROJECT UPDATES

- TARC 3 Analysis – underway, January to May timeline
  - Current State Assessment
  - Customer Experience / Rider Survey
  - Peer and Industry Comparison
  - Performance Monitoring System

- Upgrade to Trapeze v.21 begun; June 2023 go live
- ADP implementation partially complete; rolling go live
- Office 365 / Teams in preliminary phase; no go live date

PROCUREMENT UPDATES

- Open Procurements:
  - Mobile Ticketing Fare Payment Solution
  - On Board Intelligent Transportation Systems
  - Architecture, Engineering and Planning Indefinite Delivery/Indefinite Quantity
    - Includes Route Restoration and Areas of Persistent Poverty tasks
  - Marketing, Public and Government Relations Services

- Procurements in development:
  - Energy as a Service / DBOM
  - Electrical and Wiring – on-call
  - Campus Security Upgrades Phase 1
  - Mobility on Demand

ANNUAL FINANCIAL CALENDAR

JAN

- **Budget process begins**
- Sales Tax Withholding report
- 1099's
- Fed financial grant reporting
- W2
- Old pension actuary

FEB

- **Development and review of budget draft**
- INDOT funds
- Annual local Govt Financial survey
- WC simulated pension

MAR

- Old pension plan audit begins
- **First budget look to TARC Board**

APR

- **Second draft to TARC Board**
- **Board budget approval**
- Fed financial grant reporting
- Ann public employment payroll survey

MAY

- Audit prep midterm review
- **Submit budget to Metro Lou and Council**
- FTA Tri-annual review

JUN

- Special Purpose Govt Entity (SPGE) amendments
- **Submit budget to Commonwealth**

JUL

- Fed financial grant reporting
- SPGE budget
- Year end financial closure
- **Budget entered and verified in ERP**

AUG

- Annual audit
- NTD reporting data collection
- INDOT funding application
- Tri-annual Union contract

SEP

- NTD reporting begins
- WC renewal
- SPGE actuals
- Uniform, shoe and tool payroll

OCT

- NTD annual report submission
- Fed financial grant reporting

NOV

- **Budget preliminary process begins**

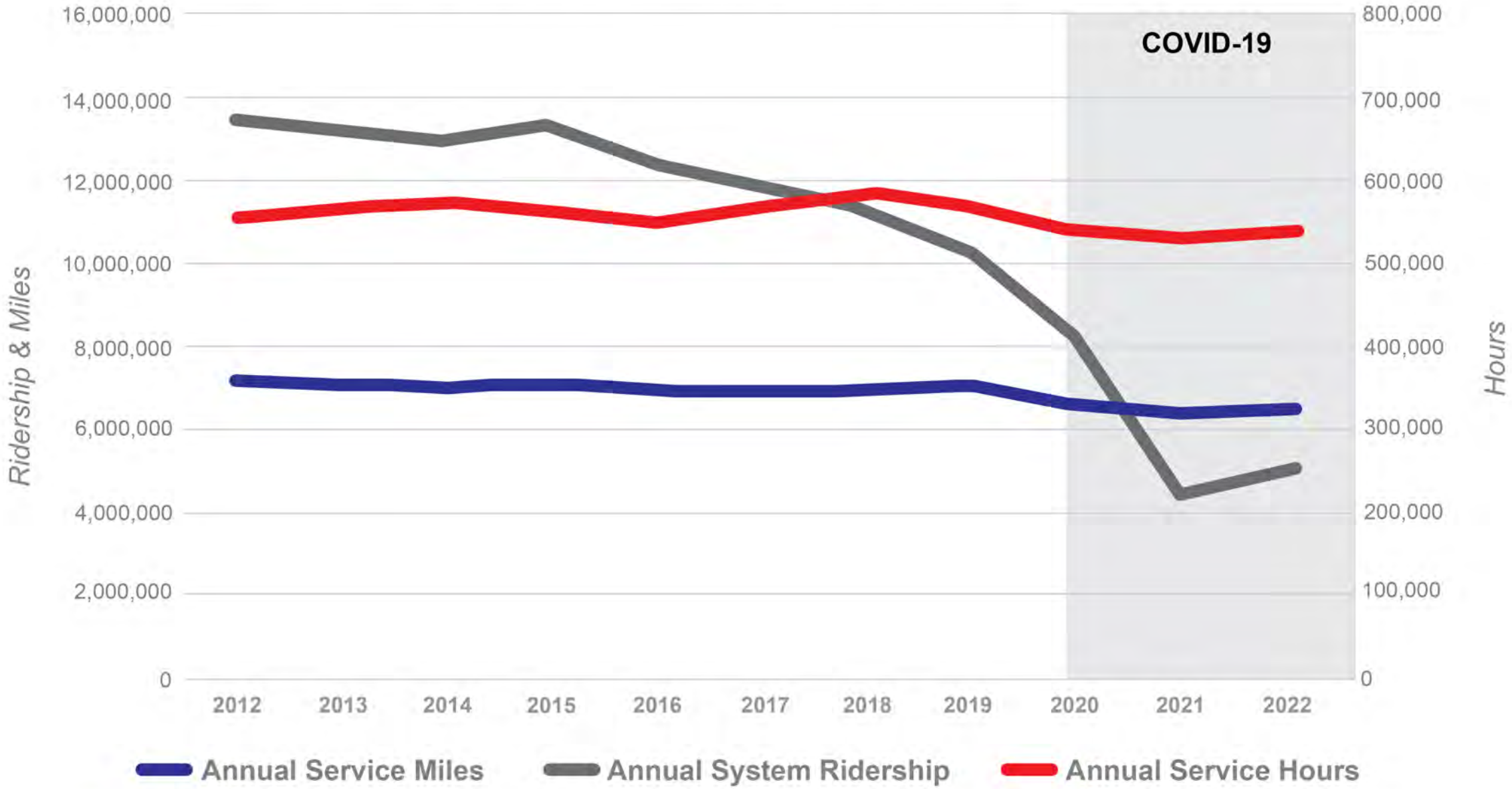
DEC

- **Budget preliminary process continues (dept books and forms)**
- Year end payroll forms

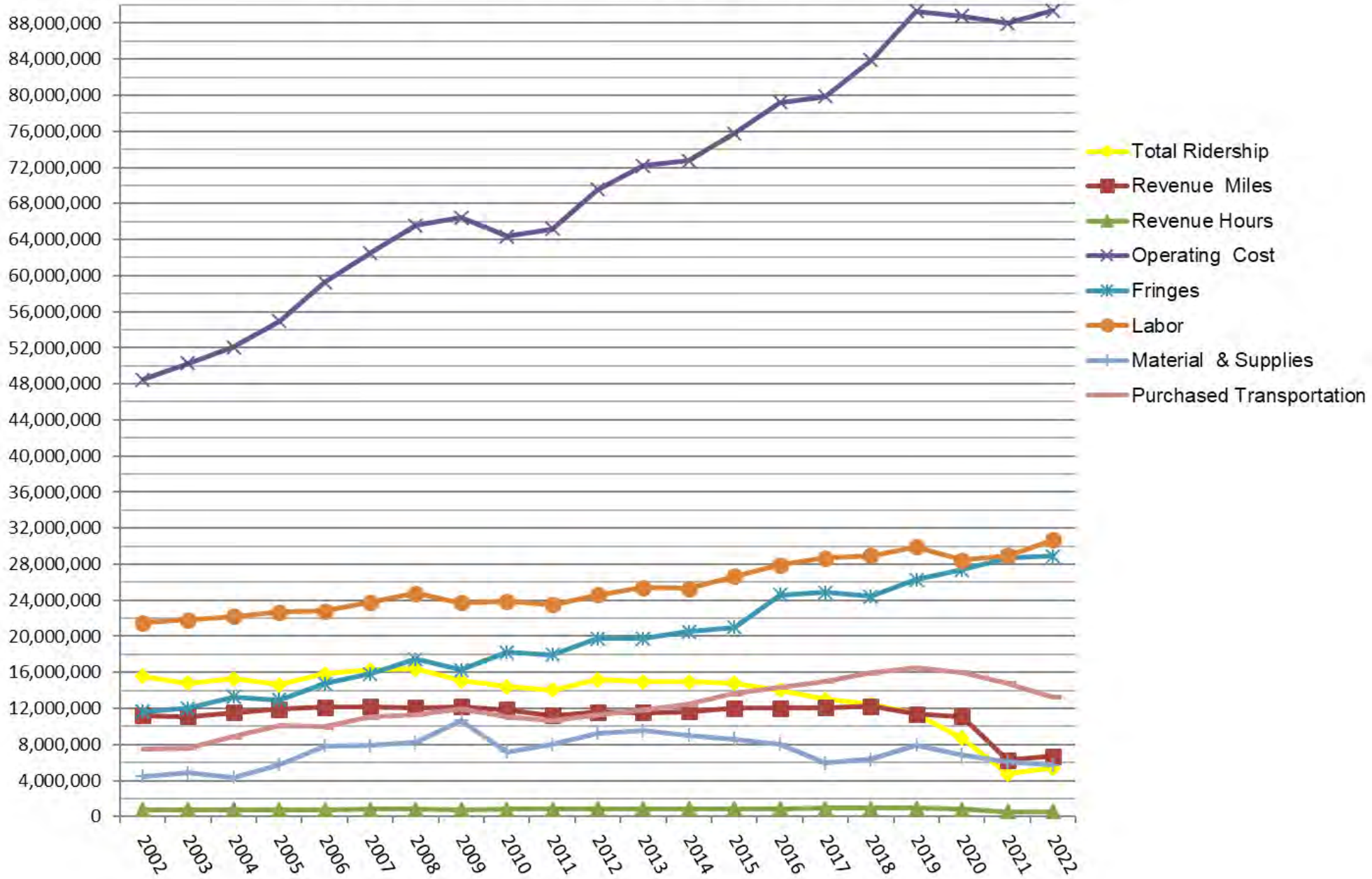
CHALLENGES IDENTIFIED IN TARC TOMORROW

- Funding
- Public Perception
- Sprawl / Lack of Infill
- Legacy, insufficient Service Network
- Aging capital, facilities and infrastructure

TARC Ridership and Service Levels: 2012 - 2022



System Wide Performance FY 2002 - FY 2022



STRATEGIC APPROACH

CUSTOMER FOCUSED APPROACH – RIDERS AND COMMUNITY

- Explore opportunities to increase revenue
  - Referendum, last and only one from 1974
  - Direct support from State – KY and IN
  - Competitive grants and discretionary awards
  - Continued reliance on Capital Eligible Expense Reimbursement
- Align service with available revenue
  - Incremental route and frequency changes
  - Revisit 2019 COA with the Route Restoration and Areas of Persistent Poverty grants
  - Develop service strategy for years 4 and 5 (2026, 2027)
  - Revise service area and delivery model, e.g. peer cities

STRATEGIC PLANNING AND TECHNOLOGY SUBCOMMITTEE

January 2023

MEMORANDUM

To: TARC Board of Directors

From: Carrie Butler, Executive Director

Date: January 24, 2023

Re: Resolution 2023-01 TARC Tomorrow – Long Range Plan

TARC has engaged in developing a long-range plan, TARC Tomorrow, that sets the course for the agency for the next 20 years. A summary of the draft Plan Summary and Review was presented to the Customer Service Committee on November 9, 2022 and then again to the Strategic Planning and Technology Committee on November 11, 2022. A copy of such Plan Summary and Review is hereby attached for your review.

This Plan provides analysis on the current state of TARC and community, produces ideas for projects and programs, and gives a sense of what and how TARC will provide service. The areas of focus in TARC Tomorrow are: rider experience, mobility and innovation, service and expansion, financial stability and funding growth, collaboration and equity and environment. The TARC Tomorrow Plan takes each of these areas and sets realistic goals, actions and timeframes in which to implement this Plan.

The attached resolution seeks Board approval of TARC Tomorrow. If you have any questions, please call me at 502-561-5100.

RESOLUTION 2023-01
TARC Tomorrow – Long Range Plan

A Resolution requesting the approval of TARC Tomorrow – Long Range Plan.

WHEREAS, TARC seeks to set the course for its future for the next 20 years; and

WHEREAS, TARC proposes to achieve this goal by creating TARC Tomorrow, a long-range plan; and

WHEREAS, the purpose of TARC's Tomorrow Plan is to create a strategy to improve and make a more efficient and effective transportation system managed and maintained by TARC that can assist the Louisville region in sustaining and improving quality of life; and

WHEREAS, TARC's Tomorrow Plan focuses on six areas, which are rider experience, mobility and innovation, service and expansion, financial stability and funding growth, collaboration and equity and environment; and

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Transit Authority of River City that:

The TARC Tomorrow – Long Range Plan is hereby approved.

Adopted this 24th day of January 2023

_____

Carla Dearing, Vice Chair, Board of Directors

tarc Tomorrow

Long Range Plan 2022

tarc Tomorrow

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Executive Summary

For almost 50 years, the Transit Authority of River City (TARC) has worked tirelessly to provide mobility and access for the people of the Louisville region. TARC's system has included many services over the years, connecting people to places and opportunities. However, the system has simply not kept pace with the changing landscape, demographics, and travel patterns that characterize modern-day metropolitan Louisville. In addition, technological changes, emerging mobility choices, and service delivery models have shifted the mobility paradigm. Commuters have new and flexible mobility options through e-scooters, transportation network companies, micromobility, and more. Now is the time for TARC to initiate transformational change to re-invent itself to meet the community's mobility needs for the next 50 years. That change begins with TARC Tomorrow.

The TARC Tomorrow Long Range Plan (hereinafter called TARC Tomorrow) benefitted greatly from input provided by two committees –the Steering Committee, comprised of key representatives from the partner agencies and organizations, offered insights and suggestions for developing the plan. At the same time, the Community Advisory Committee brought a different perspective from a broader and more diverse set of participants, including riders. These committees were complemented by additional engagement, both inside of TARC and externally, to gather input and help ground the plan in the realities of Louisville today and inform the future outlook. As the draft TARC Tomorrow Plan is released for even broader public review, additional input received can be used to refine and improve the plan going forward.

TARC Tomorrow provides the framework for the agency to become more convenient, reliable, and valued. TARC Tomorrow is organized around three sections: Our System, Our Opportunity, and Our Guide.

Our System outlines the TARC transit system and its evolution over time, who rides, where service is offered, and summarizes a group of key opportunities and challenges for the agency moving forward. Our Opportunity defines six themes around which TARC Tomorrow is built. These themes include:

- **Rider Experience**
- **Mobility and Innovation**
- **Service and Expansion**
- **Financial Sustainability and Funding Growth**
- **Equity and Environment**
- **Collaboration**

Taken together, they form the basis for the last section of the plan–Our Guide. Our Guide describes a detailed action plan for how the agency can move forward from today's position toward a new and better TARC.

Our System

TARC and Louisville have seen a series of challenges over the past several years that have directly affected TARC's current situation.

- **COVID-19 Pandemic Ridership Impacts**

  The global rise of COVID-19 in early 2020 wrought a precipitous decline in transit ridership worldwide, and TARC was heavily affected. Consistent with patterns seen in other transit systems, peak period commuter ridership to the urban core for traditional Monday–Friday workers, long a core function of public transportation systems, saw the most dramatic decline as downtown employment nearly vanished overnight. Systemwide, ridership declined by almost 50% from 2019 to 2020, and it has yet to recover fully.

- **Financial Structural Imbalance**

  TARC continues to see a gap in the rate of increase of costs compared to the rate of increase in revenue. The decline in ridership and associated decline in fare revenue over the past five years, exacerbated by the COVID–19 ridership loss has compounded this financial imbalance and made any future growth or expansion nearly impossible. TARC's financial strategy to shift capital funds to cover 80% of preventive maintenance and 40% of contracted service, to keep a low balance of the Mass Transit Trust Fund, and to make incremental service changes has allowed TARC to survive, but keeps the agency from growing and advancing, and hinders the ability to provide true regional service.

- **Auto-Dependent Growth Patterns**

  The Louisville region continues to see regional growth patterns that place both jobs and housing in outlying portions of the metropolitan area where transit struggles and automobile ownership and use is essentially a requirement. With both origins and destinations spread out and road networks that are often meandering and lacking pedestrian-friendly characteristics, TARC faces the near-impossible task to try to provide needed mobility and access in a cost-effective manner.

> **In the midst of every crisis, lies great opportunity."**
>
> **— Albert Einstein**

The combination of events has resulted in a very challenging situation for the agency, magnified by financial and workforce issues stemming from the lingering effects of the global pandemic. The infusion of one-time federal funding proved to be a critical factor for TARC, but as the agency exhausts those funds, like many others nationwide, it faces a "fiscal cliff" that not only impairs implementation of TARC Tomorrow, but also puts existing service levels in jeopardy as costs rise while revenues do not keep pace.

Despite these challenges, the community's need for equitable, cost-effective, convenient, and high-quality mobility services has only continued to grow. As metropolitan areas are increasingly recognizing, a high-quality, convenient, and attractive public transportation system is a critical piece of infrastructure alongside the roadway network, the water and electrical systems, and police and fire. For the Louisville region to compete economically, improve its equity and Environmental Justice, enhance its sustainability, and maintain and improve its quality of life, TARC must do more and be more.

Stakeholder Engagement Helps Shape the Plan

TARC Tomorrow benefitted greatly from input provided by two committees–the Steering Committee, comprised of key representatives from the agency's partner agencies and organizations, offered insights and suggestions for developing the plan. At the same time, the Community Advisory Committee brought a different perspective from a broader and more diverse set of participants, including riders. These committees were complemented by additional engagement, both inside of TARC and externally, to gather input and help ground the plan in the realities of Louisville today and inform the future outlook. As the draft TARC Tomorrow Plan is released for even broader public review, additional input received can be used to refine and improve the plan going forward.

Guiding Principles

TARC Tomorrow brings together input from the project team, agency staff and leadership, the Board of Directors and stakeholders, and the community, including the Plan's Steering Committee and Community Advisory Committee. Based on the input received, TARC Tomorrow includes recommendations intended to improve the quality of TARC's services and increase the value that TARC provides to the community.

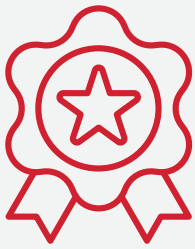
Projects, programs, and initiatives identified represent both near-term and long range timeframes and vary in cost and impact from low cost, near-immediate impact initiatives to substantial capital investments that will take many years to advance through the development and implementation process. Each initiative is identified within the *Action Matrix* that forms the core of the Our Guide section of this plan, and each is linked to a specific goal. In turn, each goal is aligned with one of the six themes. This provides a structure for understanding how the actions relate upward towards higher level Goals and to one another.

TARC Mission, Vision and Values

OUR MISSION: Making your journey our priority.

OUR VISION: To be the trusted and reliable mobility choice

OUR VALUES:



EXCELLENCE

I will be resilient and tenacious as we strive to deliver excellence.

INTEGRITY

I will approach my work with integrity.

APPRECIATION

I will appreciate and value my colleagues.

RESPECT

I will show respect in my interactions with both colleagues and our community.

INCLUSIVITY

I will maintain an environment that values equity and open diversity of thought.

RELIABILITY

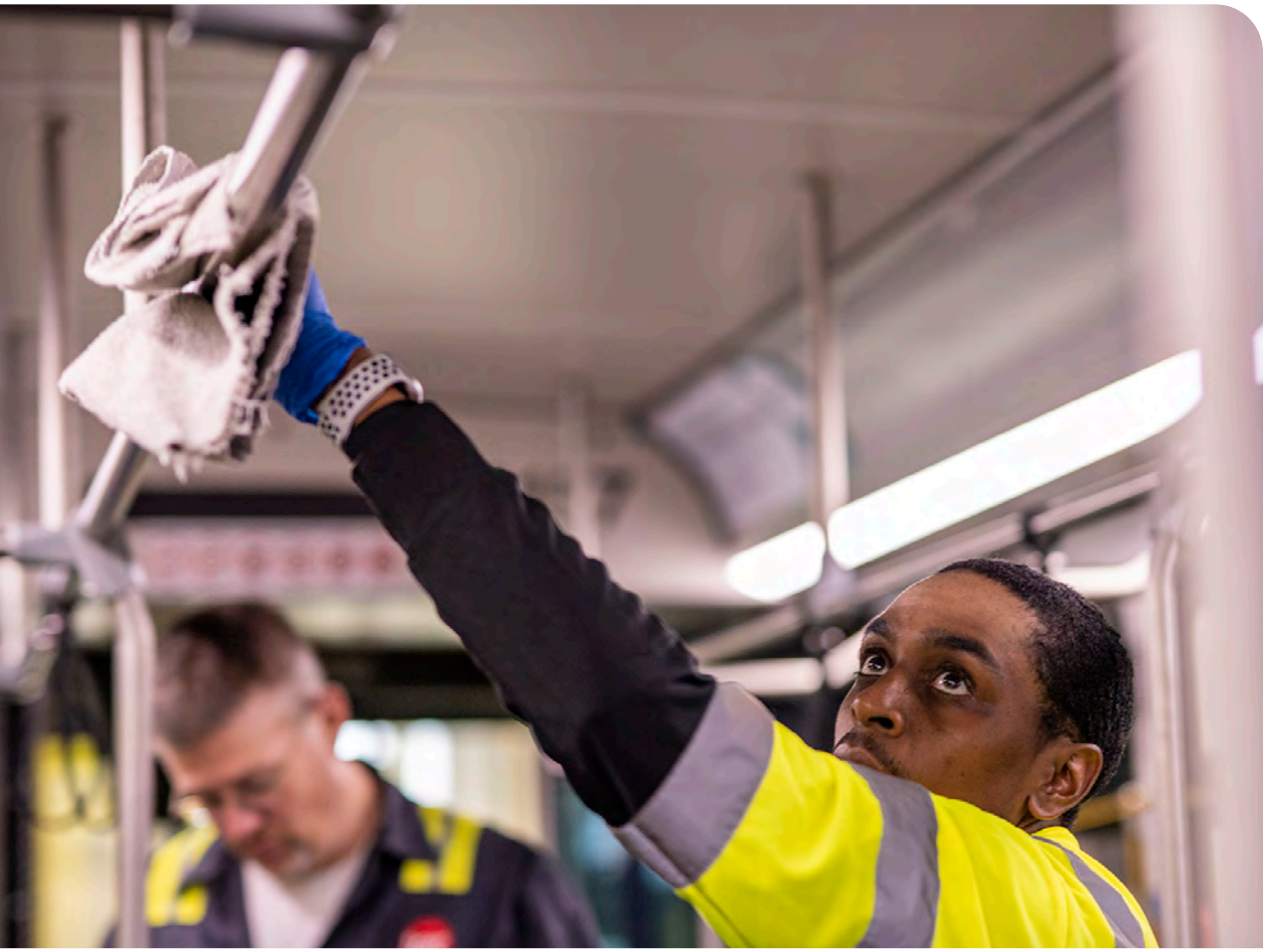
I will execute on the commitments I make.

ACCOUNTABILITY

I will foster a culture of ownership.

COLLABORATION

I will be transparent in my communications with others.



Our Opportunity

Our Opportunity–builds on Our System by defining six themes around which TARC Tomorrow is built. The themes are Rider Experience, Mobility and Innovation, Service and Expansion, Financial Sustainability and Funding Growth, Equity and Environment and Collaboration. These themes represent significant challenges and opportunities for TARC going forward. Each theme, or 'Big Idea' is summarized below:

- **Rider Experience -** Listening to our riders and aligning our plans with their needs means we're building a more reliable, equitable and useful system to provide access to all the opportunities that Louisville offers.
- **Mobility and Innovation -** The world is changing faster than ever before. By thoughtfully adopting best practices and innovative technologies, we will bring new levels of convenience and quality to our transit system.
- **Service and Expansion -** As Louisville grows and mobility needs change, we'll work to increase service levels on existing services and add new services to improve access for the community.
- **Equity and Environment -** Doing right for people and the environment happens through understanding, engagement, and action, and we're working hard to uphold and support community values in these areas.
- **Financial Sustainability and Funding Growth -** Meeting the growing mobility needs of the community means TARC needs added resources to grow and improve services.
- **Collaboration -** Working in partnership with public agencies and the private sector to foster a more transit-supportive Louisville region is an ongoing and increasingly important effort for TARC.

As the Louisville region continues to grow and evolve, each of these 'Big Ideas' should be periodically revisited with the community and stakeholders to assess their continued relevance. Some may need to be adjusted to meet changing conditions, or there may be new ideas that should be added to better support TARC's role in improving mobility based on new developments, technological changes, or other factors. Most importantly, though, they should be used to guide progress and support the ongoing transformation of TARC.

TARC Themes

Rider Experience

Listening to our riders and aligning our plans with their needs means we're building a more reliable, equitable and useful system to provide access to all the opportunities that Louisville offers.

Mobility and Innovation

The world is changing faster than ever before. By thoughtfully adopting best practices and innovative technologies, we will bring new levels of convenience and quality to our transit system.

Service and Expansion

As Louisville grows and mobility needs change, we'll work to increase service levels on existing services and add new services to improve access for the community.

Financial Sustainability and Funding Growth

Meeting the growing mobility needs of the community means TARC needs added resources to grow and improve services.

Equity and Environment

Doing right for people and the environment happens through understanding, engagement, and action, and we're working hard to uphold and support community values in these areas.

Collaboration

Working in partnership with public agencies and the private sector to foster a more transit-supportive Louisville region is an ongoing and increasingly important effort for TARC.

Action Matrix

While TARC will lead many of the actions, collaboration and cooperation from many stakeholders, particularly Louisville Metro and other local governments, will be critical. Many of the goals identified in TARC Tomorrow are aligned with those of partner agencies and can benefit communities by creating more walkable, livable and equitable places while also netting positive economic benefits.

As emphasized throughout this document, TARC almost certainly cannot accomplish each action identified in this section without securing additional funding over the life of the TARC Tomorrow Plan. For this reason, implementation will be premised on close coordination with the agency's budget and capital program to ensure that the TARC system is maintained in state of good repair and that service and expansion programs and projects are aligned.

The Action Matrix highlights the goals, actions, timeframes, and responsibilities for the six themes of the Transit System Plan.

Legend

- **Task Period**
- **Lead**
- **Co-Lead**
- **Support**

Figure 1: Action Matrix Structure

Our Guide

Every plan needs a guide to provide direction and facilitate efficient forward progress. Working closely with agency partners, TARC will coordinate to support mutually beneficial outcomes. Each theme identified in the Our System section includes a set of goals and associated Action Matrix along with defined timeframes so that customers, stakeholders, and the public can understand the "what," "who," and "when" of moving these goals forward. There are many actions recommended to improve mobility for the Louisville region and support TARC's growth and development in TARC Tomorrow, with the most impactful highlighted here:

- **Define and Develop a Frequent Route Network:**

  Of the transit systems across the country that have successfully grown ridership in the past decade, virtually all attribute their success to the deployment of and emphasis on frequent transit service. Transit riders today and tomorrow want service that meets their schedules, not service that they have to schedule their lives around, and that means frequent (every 15 minutes or better), reliable and consistent (seven days per week) service on major corridors connecting people to opportunity. TARC has already initiated efforts in that direction and should make further development of a Frequent Route Network a top priority over the next five years.

- **Develop Bus Rapid Transit on the Broadway Corridor and Initiate BRT Planning on Additional Corridors:**

  A major opportunity exists for TARC to leverage Louisville Metro's ongoing work to develop the Broadway Master Plan. This project creates a very transit-supportive vision for the corridor and contemplates the inclusion of high-capacity transit as a defining feature. TARC should continue to coordinate closely with Louisville Metro and initiate planning work to position the agency for federal funding opportunities to advance BRT to implementation on Broadway.

- **Develop a Transit System Plan and Associated Funding Program for Voter Referendum:**

  Underpinning the two transformational initiatives above and much more, TARC must build a compelling case for additional funding and foster the collaboration and support needed among all stakeholders to gain the necessary approvals for such funding to be approved and established. While clearly this is not a simple nor easy task, TARC simply cannot support the Louisville region's mobility needs, support equity gains or make critical contributions to improving quality of life without additional and sustainable funding going forward.

While many actions are near-term conditions and can achieve specific improvements quickly, the plan also recommends longer-term initiatives. As the timeline moves further out, conditions can change, there will be more unknowns, requiring TARC to continue to innovate and adapt. Remaining flexible and forward-looking with policy updates and targeted pilot programs will allow TARC to test emerging technology and adjust over time to changing conditions. This approach will not only help TARC navigate the future but will help ensure that the agency stays relevant for future generations.

TARC Tomorrow was written to guide the agency's priorities and actions well into the future. However, reporting on goals and actions will be ongoing and more frequent to track progress and adjust as conditions change. Continuous engagement and strong partnerships will be essential at all levels, from our federal, state, and regional partners to local jurisdictions and agencies, the private sector, and most importantly, TARC riders.

Next Steps

TARC Tomorrow is not intended to be a shelf-ready plan. Instead, this is a plan prepared with a clear aim–to be advanced to implementation. The plan should be revisited regularly and updated as new information becomes available and conditions change, with periodic reviews and reassessments as needed so that TARC Tomorrow can continue to help the agency meet the community's mobility and access needs well into the future. Now is the time to begin!


Louisville 1873


THE CITY OF
LOUISVILLE
KENTUCKY.
to accompany
APPLETONS HAND BOOK OF SOUTHERN TRAVEL
1873.
OHIO RIVER
Ohio River Bridge
Willow Bar
First St. ferry to Jeffersonville
Crib Protection
Fulton
Franklin St.
Washington
Main St.
Market St.
Jefferson St.
COURT HOUSE & CITY HALL
LOUISVILLE & FRANKFORT R.R.
DEPOT
Green St.
Grayson St.
Lafayette St.
Marshall
Walnut St.
Madison St.
CITY MARINE HOSPITAL
Chestnut St.
BLIND ASYLUM
MEDICAL COL.
Gray St.
Kellar St.
ST. VINCENTE ORPHAN ASYLUM
Old Channel of Bear Grass
PRATHER ST. OR BROADWAY
PASSENGER DEPOT
Vine St.
Laurel St.
Rose
Lane
Jacob St.
Hamilton St.
York St.
Curran St.
Cawthon
College St.
Lampton St.
Breckenbridge
Caldwell St.
Kentucky St.
Kentucky St.
St. Catherine St.
Mechanic St.
St. Joseph St.
Cane St.
Mary St.
Bear Grass Creek
Monroe
Artesian Well
Ormsby
Nelson
Eleventh
Tenth
Ninth
Eighth
Seventh
Sixth St.
Fifth St.
Center St.
Fourth St.
Third
Second
First St.
Brooks St.
East St.
Floyd St.
Preston
Jackson St.
Hancock St.
Clay St.
Shelby St.
Campbell
Wenzell St.
Garden St.
Underhill St.
Geiger
Pope
Logan St.
West St.
Bullitt St.
Wall St.
Pearl St.
Elm
Mill St.
Cabel
Gay
Adams
Atkinson
Buchanan
Pocahontas
Johnston
Louisville & Nashville

tarc Tomorrow

Our System

The Transit Authority of River City (TARC) was founded in 1974 after purchasing the privately-owned Louisville Transit Company. In 1974, Jefferson County citizens voted to impose a 0.2% occupational license fee on all persons employed in the county to fund the operation of TARC. The same local funding mechanism exists today. Much of the agency's service can still be easily traced from the history of radial corridors and make up the backbone of TARC. However, as development and growth continued to evolve in the 20th century, mobility needs shifted, and the region became auto-dominated. TARC Tomorrow sets the course for the agency of the future by providing strategic focus and alignment, building trust within the community, and creating opportunities for the agency.

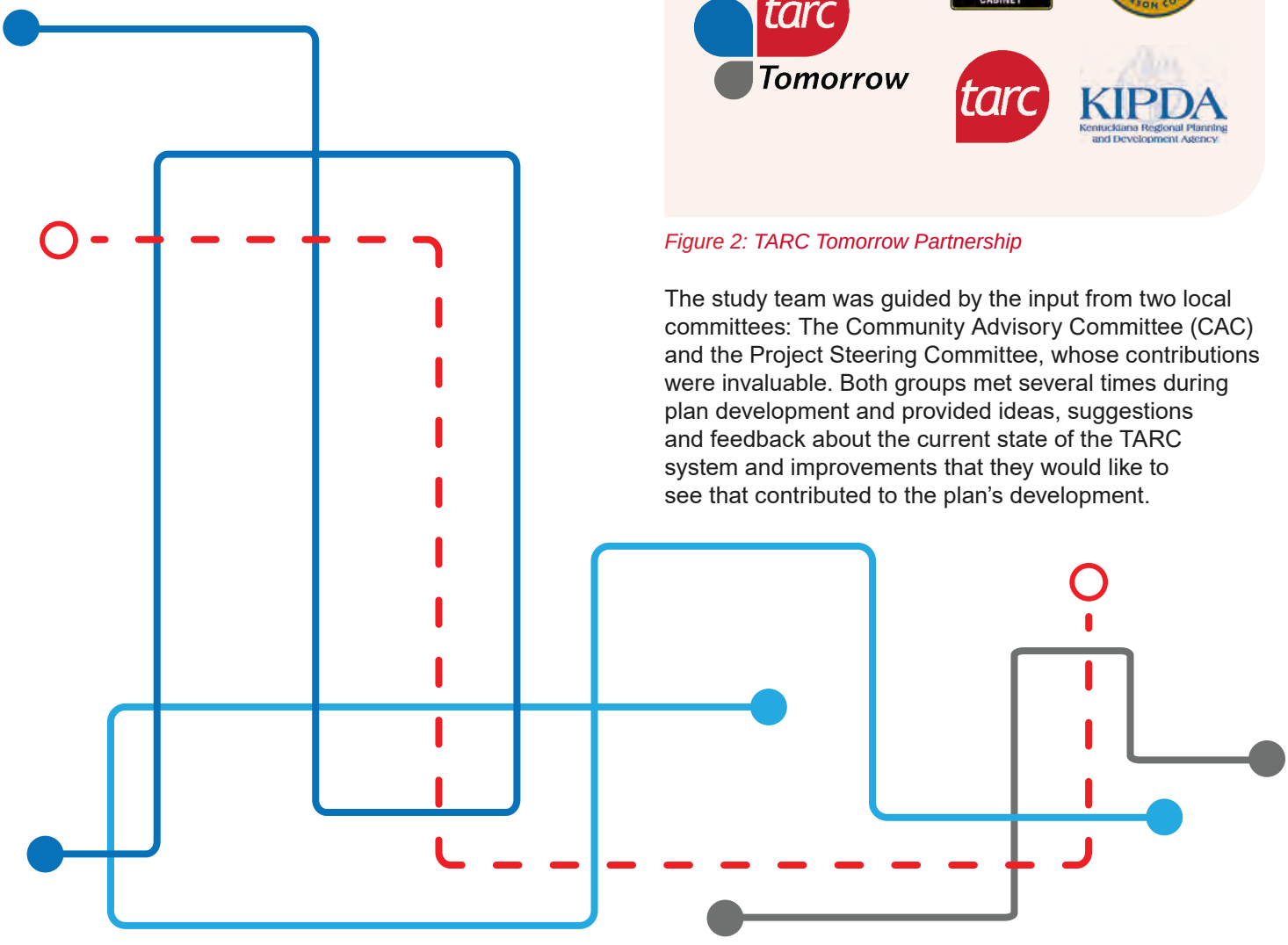
Project Development

The development of TARC Tomorrow was made possible through a collaborative partnership consisting of:

- **TARC**
- **Kentucky Transportation Cabinet**
- **Louisville Metro**
- **KIPDA**

Figure 2: TARC Tomorrow Partnership

The study team was guided by the input from two local committees: The Community Advisory Committee (CAC) and the Project Steering Committee, whose contributions were invaluable. Both groups met several times during plan development and provided ideas, suggestions and feedback about the current state of the TARC system and improvements that they would like to see that contributed to the plan's development.



Setting the Vision: Imagine TARC Tomorrow

Imagine a world-class mobility system with frequent, reliable, all-day service, throughout the Louisville region. With innovative travel options, clean, safe, and customer-friendly vehicles and facilities with technology that allows seamless connectivity throughout all transportation modes. A transit agency that intentionally invests in the community and addresses equity and environmental issues to allow the region to thrive.

Imagine yourself, a loved one, or a colleague starting the day to get to work, entertainment, or school. You look at your smart device or computer, and it shows you nearby travel options. Options such as a local bus, vanpool, carpool, e-scooter, or an on-demand service connecting you to a transit center or park-and-ride to catch a frequent or express bus or other modes to help you complete the journey. Once you leave home, your device offers even more information, accessible to all regardless of abilities and language spoken. If a seat is taken on the upcoming bus, the one behind it has plenty of room. On the way to the bus stop, cyclists pass by on a new bike lane next to the sidewalk. Some will put their bikes in the secure lockers at the stop and board the bus. The stop is well-lit, so riders can see who's waiting under the large shelter. The father who drops his children at daycare every morning is there. The floor of the bus is level with the stop platform so he can roll the stroller on—and there's a place where he can safely park it onboard. People who use mobility aids appreciate level boarding, too, as well as the easy mechanism for securing mobility aids by themselves. Level boarding creates safe and easy boarding for everyone.

It doesn't take long for everyone to get on the bus through all doors—the passengers tapped their fare cards at the fare kiosk or used mobile ticketing. The driver smiles and answers questions for a few riders. The bus arrives at the destination much faster than it used to. The road now has a bus-only lane and traffic signals that stay green when the bus approaches. Usually, this person walks the last mile to work for exercise, but it's raining hard. They decide to take an on-demand service that's waiting near the transit center. The driver accepts their smartcard, so paying is quick and easy. Compared to 30 years ago, this trip was much faster, easier, and full of options—with choices available all day, any day.

Evolution of System

The city of Louisville has a deep-rooted history in the transport of people and goods throughout the region. With Louisville's strategic location at the Falls of Ohio, it quickly became a major commercial center for merchants and manufacturers with river transportation. Before the ascendancy of the personal automobile as the dominant mode of transportation, the transit system played a critical role in Louisville's mobility and economic vitality. The first public transportation began in 1830, as riverboat passengers had to transfer onto land to get around the Falls. Carriages eventually gave way to mule-powered buses (1850–1891), electric streetcars (1899–1951), trolley coaches (1936–1951) and motor buses (1937), which evolved into the buses used today. Despite tremendous growth and change over the past sixty years or more, much of the current TARC transit system is based on the original streetcar system, and subsequent bus network, that was privately owned and operated by Louisville Transit Company.

In 1959, the #23 Broadway, operating on a very similar alignment as it does today, featured weekday A.M. peak period service every two minutes!

This legacy is apparent in Figure 2, which shows the status of the system in 1959. In addition to the impressive coverage the network provided at that time, the level of service is nothing short of remarkable. Consider, for example, the #23 Broadway route, which today is considered a "Frequency" route with Monday-Friday peak period service levels of every 15 minutes. In 1959, the #23 Broadway, operating on a very similar alignment as it does today, featured weekday A.M. peak period service every two minutes! Afternoon weekday service operated every four minutes, and the route ran every eight minutes during midday on Saturdays and every 15 minutes on midday Sundays! While it

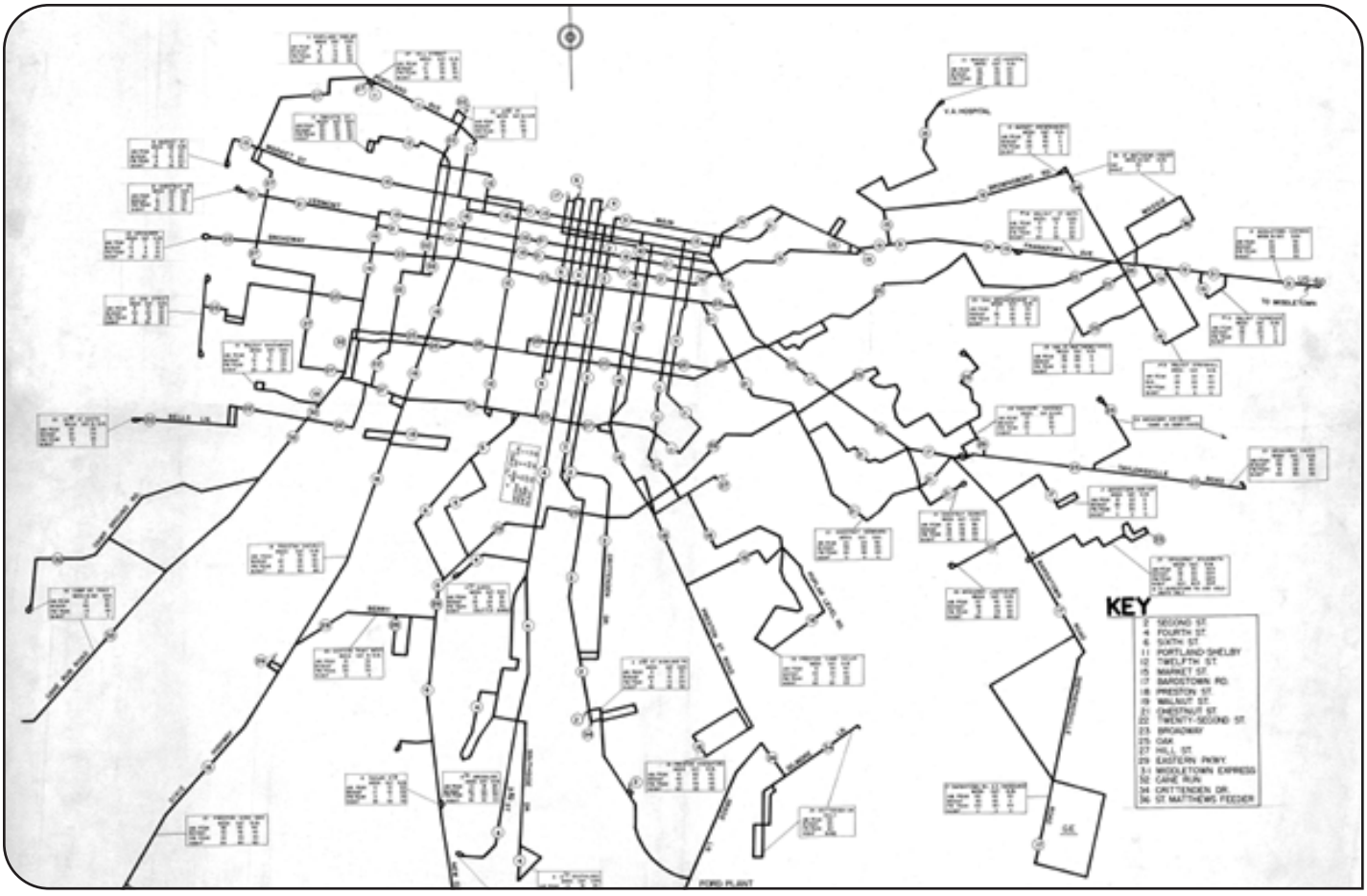


Figure 3: Louisville Transit System 1959 System Map

is perhaps unrealistic to compare that very different time period to today's system, it is nonetheless worth considering how convenient and useful such frequent transit service was to the community and could be again with additional investment in the TARC transit system.

As was commonplace nationwide, the advent of the interstate highway system, suburbanization, and related factors resulted in a decline in ridership and financial challenges for the private transportation company that operated the system. These challenges ultimately led to the demise of the Louisville Transit Company in the early 1970s. To maintain public transportation services, TARC was created in 1971 and initiated operations in 1974. A summary of the major milestones that marked the beginnings of the agency is shown in the graphic below.

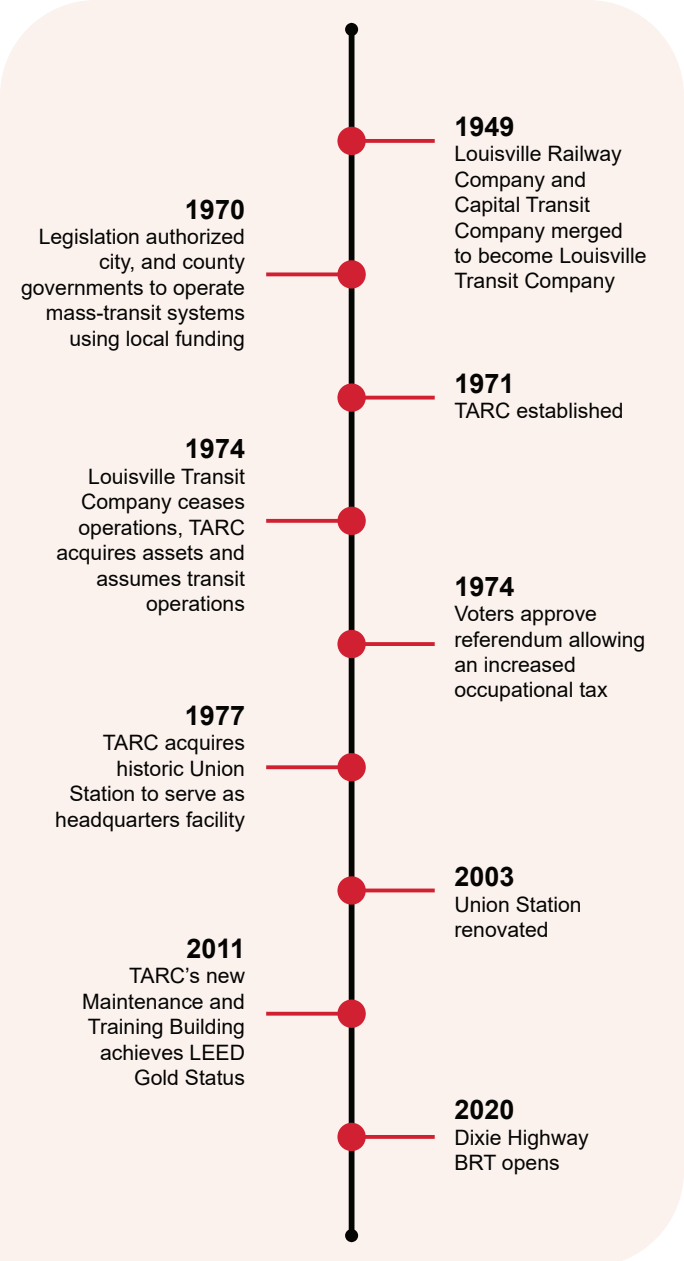


Figure 4: TARC Major Milestones

TARC is the only public transit system in the Louisville-Southern Indiana metro area. The Board of Directors is comprised of eight individuals with vested stakes in Louisville. Members are appointed by the Louisville Metro Mayor, with the approval of the Metro Council.

TARC operates a fleet of 227 buses, including 15 all-electric and 33 hybrid electric buses, which provide an average of 4.8 million rides annually, in addition to 312,000 annual American with Disabilities Act (ADA) paratransit trips. Transit ridership in the Louisville area has unfortunately mirrored national trends in recent years. Determined from the Comprehensive Operations Analysis (COA), TARC ridership has experienced a 25% decrease despite consistent revenue hours and a growing population. Transit ridership continued to decline with the emergence of COVID-19, with 40% of 2019 levels through 2020 and route discontinuation due to safety and funding concerns. Figure 6 below shows TARC's 10-year annual ridership trends in comparison to the level of service provided over that same time period. While the agency has made incremental changes through that period, the limited revenues TARC receives have not allowed service to grow with the Louisville region's population, travel and economic growth in the same period.

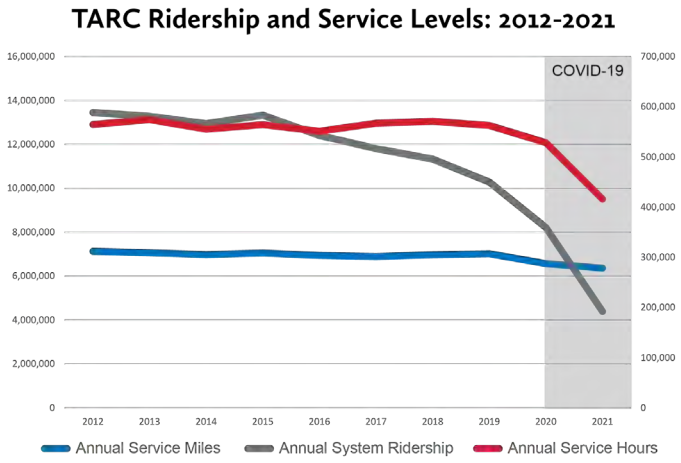


Figure 5: Ridership and service levels, 2012–2021

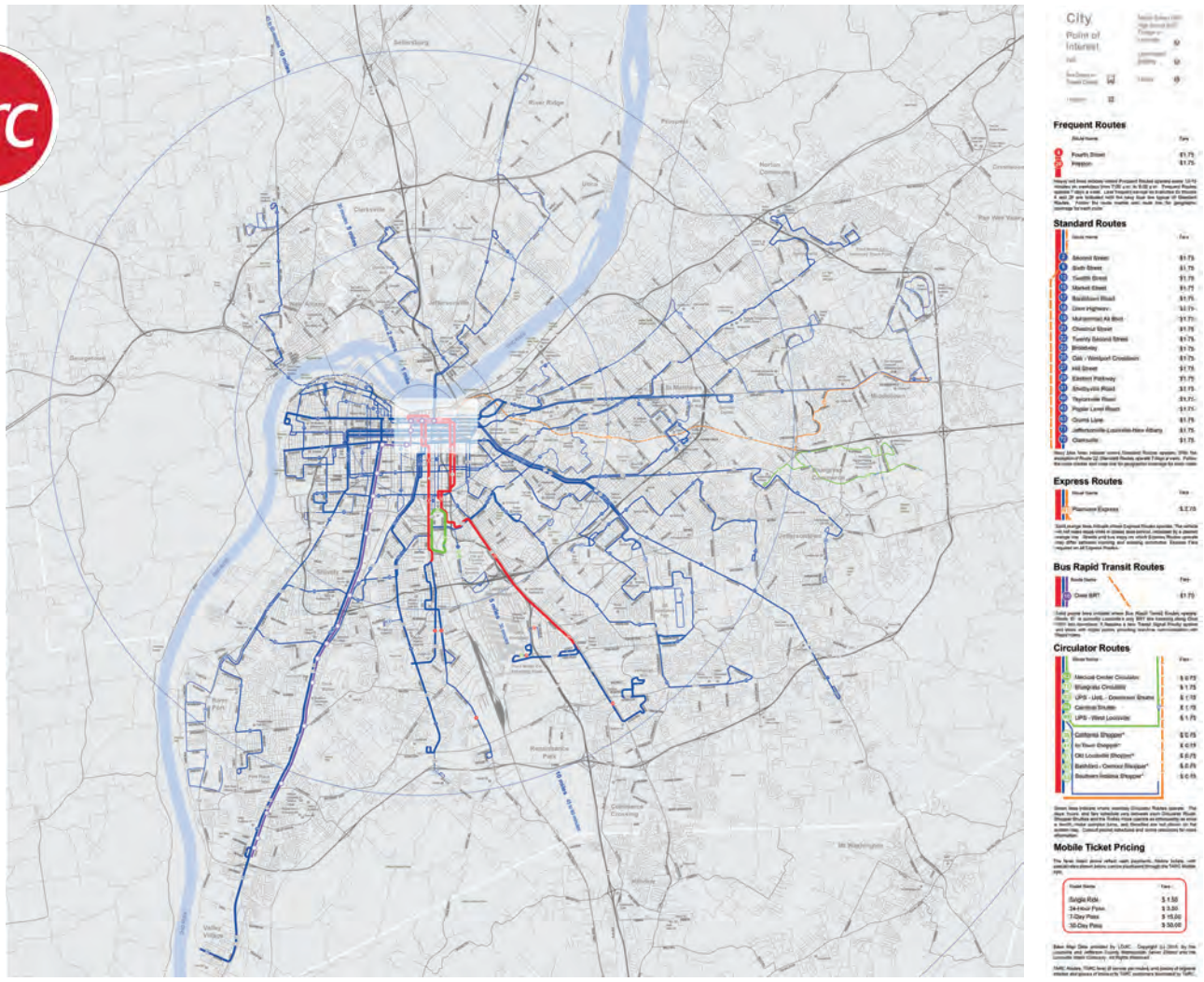


Figure 6: TARC System Map 2022 (Source: TARC)

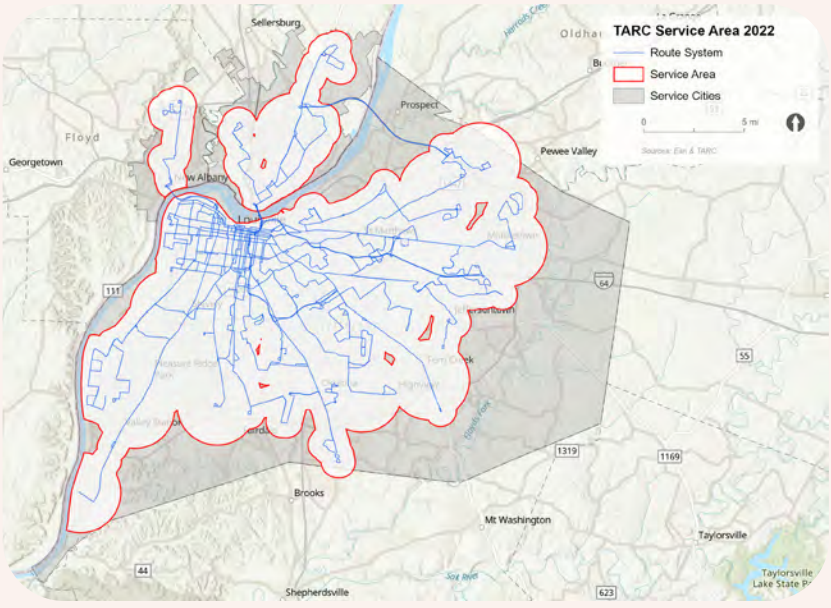


Figure 7: TARC Service Area

Who We Serve

TARC serves the city of Louisville in Kentucky, and Jeffersonville, Clarksville and New Albany in Indiana.

The service area is just over 357 square miles. In this service area, the 2016 On-Board Survey found that the median household income is $48,973, with nearly half of TARC ridership (47%) below $20,000. The median age is 36 years old, and 3% of ridership over the age of 65. There are 806,893 people in the Louisville service area. The COA found that in 2019, approximately 37% of the population lives within a quarter mile (.25 miles) of a transit stop.

Employment Coverage

There are more than 196,000 full time local employees that make up the 50 largest companies in the City of Louisville, representing almost one-third of all employees in Jefferson County. These jobs are located throughout the region, but can be identified within key employment nodes as shown on Figure 77 from the Move Louisville 2035 Plan.

Based on data from the U.S. Bureau of Labor Statistics and Remix software, Louisville compares favorably to a set of peer cities identified for similarity based on service area population, with 47% of jobs located within the Metropolitan Statistical Area (MSA) and served within 0.25 miles of transit service in from the Move Louisville 2016 report.

Downtown

Downtown Louisville contains over 13 million square feet of office space and has over 2,800 residential units. In addition, it is the hub for the region's tourism industry. Prior to the pandemic, tourism was the third largest industry in Louisville, hosting 19 million visitors in 2019 generating an estimated annual economic impact of $3.4 billion which supports over 70,000 local tourism-related jobs.

Airport Logistics Hub

Freight and logistics is a large part of Louisville's economy. The largest employer in Louisville is United Parcel Service, Inc. (UPS). In 2021, they employed 24,110 local full-time people with their headquarters roughly 13 miles from downtown. Since the launch of 'next-day parcel delivery service' in the early 1980s, freight traffic at the Louisville International Airport has grown substantially. Worldport is the hub of UPS global air network and operates direct connecting flights to hundreds of destinations around the world. UPS has invested $2.9 billion in multiple expansions to its Worldport facility, doubling its original size and increasing its package-handling capacity.

TARC provides service to UPS Worldport with Route 28 Preston Highway seven days per week, with frequencies of up to every 15 minutes during the weekday peak periods. The pay scales and education levels of employees vary. Ridership on the UPS shuttle increased 22% over the five-year period of FY2014–2018 while systemwide ridership generally decreased. This shows the importance of connecting transit to employment centers during work shifts to increase mobility.

Employment Centers

1. Airport
2. Bluegrass Commerce Center
3. Commerce Crossing
4. Downtown
5. St. Matthes/DuPont
6. Eastpoint
7. Hurstbourne
8. Medical Center
9. Riverport
10. Rubbertown
11. University

Potential Infill Development Areas

Figure 8: Louisville Employment Centers (Source: Move Louisville, Louisville Metro)

West Louisville to Riverport

Riverport International is a fully integrated port and industrial park that is home to several companies that engage in manufacturing and distribution. Riverport's fully developed transportation facilities complement Louisville's central location, making it one of the most accessible industrial parks in the nation, via three interstate highways, five railroads, and the Ohio River.

The Dixie Corridor

The Dixie Corridor is an important arterial in which TARC transports nearly 8,000 transit riders per day with service provided both by the #10 Dixie Highway BRT and local route #18 Dixie Highway, in addition to pedestrian and bicycle traffic. This corridor is vital to move people through Louisville and has the potential to be created into a job-generating, livable, multi-modal corridor.

Southeastern New Growth Zones—Bluegrass Commerce Park/Blankenbaker Parkway

This primary employment hub has a mix of commercial and industrial land in southeastern Jefferson County. There is a potential for this area to have a string of walkable, transit-served employment nodes that can shorten work trips for those living in the eastern suburbs of the region. There is also anticipated residential development to support additional jobs in this zone.

Figure 9: UPS Planes (Source: Move Louisville 2016)

Northeast Louisville Growth Zones

This segment continues to grow with the expansion of I-265 across the Ohio River. This employment hub has the largest number of manufacturing jobs, the Ford Motor Company. There is also over 1,300 acres of mixed-use development to include business centers, creating new demand for a transportation network.

City	Service Area Population (2019)	Jobs Served by Transit (2017)	Jobs in MSA (2017)	Percent of Jobs Served by Transit
Milwaukee, WI	948,201	409,200	796,312	51%
Louisville, KY	806,893	299,700	636,093	47%
Memphis, TN	708,275	250,200	599,222	42%
Sacramento, CA	1,056,979	391,500	1,025,455	38%
Detroit, MI*	713,777	278,200	2,023,076	14%

* It should be noted that Detroit, MI experiences a massive disparity in job opportunity between the city and the surrounding areas within the MSA[3], resulting in only 14% of jobs in the MSA served by Detroit's transit network

Table 1: Peer Cities and Percent of Jobs within 0.25 miles of transit stops

Count	Service Type	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Change, FY14–18
23	Local	12,325,203	10,217,895	11,299,902	10,641,855	10,087,832	-18%
12	Express	234,508	193,632	213,348	182,404	153,294	-35%
4	MV/UPS (Shuttle)	39,354	35,151	41,601	25,730	48,149	22%
4	Circulator	935,091	781,768	911,938	956,113	1,019,451	9%
	Total:	**13,534,156**	**11,228,446**	**12,466,807**	**11,806,102**	**11,308,726**	**-16%**

Table 2: Historical Ridership by Service Type (FY 2014–FY 2018)

Ridership Demographics

In 2016, TARC completed an On-Board Ridership Survey that identified typical riders for the transit system. The table below shows the comparison between the Jefferson County residents with TARC ridership.

The typical rider on the TARC system is a 37 year old African American woman. The largest represented minority population is African-Americans, with 53% of ridership. Nearly half (47%) of TARC ridership has a reported income of below $20,000, while another 40% fall between $20,000 and $50,000. About 8% of the region speaks a language other than English, with the two highest representations of languages spoken other than English being Spanish (19%) and Hindi (10%).

Ridership Trends

Ridership has been declining. From the 2021 Comprehensive Operational Analysis (COA), there is a strong demand for service in and around Downtown Louisville, with high propensity in two key corridors, the Dixie Highway and Frankfort Avenue and two concentrated demand areas near the airport and GE Appliance Park, with nearly 50% of ridership was found on four routes.

Even prior to the COVID-19 pandemic, the ridership overall has been declining in the TARC service area. From 2014–2018, ridership declined by almost 20%. The On-Board Ridership survey showed that 90% of TARC customers use the system on a weekly basis and use it as a primary means of transportation.

	Jefferson County, Weighted	TARC Ridership
Population	727,266	
Percentage of Females	51.9%	51.1%
Percent Caucasian	73.8%	38.3%
Percent African-American	21.3%	53.0%
Percent Asian	2.9%	3.1%
Percent Hispanic	5.0%	4.7%
Percent Foreign Born	6.8%	7.0%
Percent Language other than English	7.8%	23.3%
Percent below poverty threshold	14.8%	34.1%

Table 3: Jefferson County and TARC Ridership Demographics

Route	Route Name	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	4th Street Circulator	115,598	96,754	141,514	121,646	98,831
2	Second Street	118,074	93,424	120,565	121,482	124,043
4	Fourth Street	1,309,067	1,101,663	1,113,267	1,012,187	938,121
6	Sixth Street	519,842	468,123	536,193	509,417	499,072
12	Twelfth Street	83,169	76,007	90,231	97,390	78,216
15	Market Street	570,743	467,222	559,963	499,272	568,650
17	Bardstown Rd	297,209	250,195	301,125	256,016	213,470
18	Preston-Dixie Highway	2,452,767	1,979,686	2,183,424	2,068,044	2,032,937
19	Muhammad Ali	882,712	761,566	849,385	782,261	789,612
20	Riverport Circulator	N/A	N/A	N/A	N/A	17,404*
21	Chestnut Street	385,038	320,666	382,417	356,045	231,349
22	Twenty-Second Street	27,144	16,477	19,749	19,040	17,991
23	Broadway	2,395,463	1,963,162	2,041,917	2,002,547	1,852,386
25	Oak-Westport Crosstown	453,178	388,607	456,357	424,143	408,563
27	Hill Street	251,367	215,919	237,501	238,970	247,304
29	Eastern Parkway	519,605	445,518	484,310	435,294	399,028
31	Shelbyville Road	317,573	232,214	266,951	241,671	218,842
40	Taylorsville Road	317,934	254,043	308,617	300,660	247,537
43	Poplar Level	499,489	395,932	444,000	423,573	401,217
45	Okolona Hillview Express	22,185	16,631	19,033	19,112	14,076
49	Westport Road Express	7,507	4,288	4,479	3,422	3,148
50	Dixie Express	29,696	22,823	20,434	13,944	13,596
52	Medical Center Circulator	44,615	20,036	35,966	33,095	26,407
53	Breckenridge Lane Express	14,921	11,617	13,620	11,218	9,886
54	Manslick Express	9,835	10,611	8,538	5,309	9,239
61	Plainview Express	33,313	25,972	27,926	19,825	16,476
62	Breckenridge-Shepherdsville	39,469	34,581	38,142	32,515	32,934
63	Crums Lane	347,632	280,050	293,512	291,691	270,099
64	Fincastle Forest Springs Express	20,484	15,238	14,363	11,994	9,489
65	Sellersburg Express	2,754	7,613	6,178	6,706	6,120
66	Mt. Washington-Sheperdsville	13,750	10,038	11,369	15,393	8,203
67	Oldham I-71 Express	29,756	23,153	27,632	21,861	19,916
68	Prospect Express	6,229	3,531	5,676	4,455	2,729
71	Jeffersonville-Louisville-New Albany	279,290	265,894	319,629	288,812	272,897
72	Clarksville	196,478	147,158	182,113	174,164	169,653
75	Bluegrass Circulator	9,162	9,332	12,835	8,816	6,672
77	Main-Market Circulator	156,302	184,405	270,802	231,030	220,457
78	Downtown/Bluegrass Express	44,078	42,117	54,100	49,154	40,416
82	New Albany-Clarksville-Jefferson Clarksville	61,960	51,788	70,551	66,661	56,507
93	UPS/UofL/KCTC Shuttle	17,904	13,386	13,386	8,757	8,930
94	Cardinal Shuttle	618,576	471,573	463,656	570,342	673,756
96	UL Health Campus Circulator	N/A	N/A	N/A	N/A	26,216*
99	West Louisville/UPS Shuttle	12,288	12,433	14,833	8,157	6,331
	Total:	**13,534,156**	**11,228,446**	**12,466,807**	**11,806,102**	**11,308,726**

*Route began revenue service FY18

Table 4: Historical Ridership by Route (FY 2014–2018)

Challenges and Opportunities

TARC Tomorrow seeks to provide the agency with a framework to move forward and take steps to improve mobility for the community. To do so, it is vital to identify and acknowledge the challenges and opportunities the agency has faced, is facing, and will likely face in the future. In many cases, the challenges and opportunities can be thought of as two sides of the same coin- what is currently a challenge can, with an appropriate strategy and plan, be turned into an opportunity. The following sections will briefly summarize the biggest challenges and opportunities for TARC, building off the related Strengths, Weaknesses, Opportunities and Threats Issues Paper.

Challenges

Funding

Without a doubt, the biggest challenge facing TARC is funding. Buses and other capital investments all cost money up front, and actually running service every day requires a committed, sustained investment. TARC's funding level lags that of peer agencies, particularly in the amount of dollars coming from local and state sources, hampering TARC's ability to provide improved service frequency or coverage.

Prior TARC plans, including the 2009 Long Range Plan which preceded TARC Tomorrow, have called for an increase in the county's occupational tax rate from the 0.2% rate (that remains in place today) to provide TARC with a more robust and sustained source of ongoing funding. Enhanced funding at the local level would allow for operational improvements, including expanded and enhanced service options such as premium transit, Bus Rapid Transit (BRT) or potentially even Light Rail Transit (LRT), while also increasing the pool of local match dollars to leverage federal grants.

TARC also faces more acute financial challenges that are a threat to its ability to maintain even the current level of transit service. Non-recurring federal funds from COVID relief packages have covered shortfalls in recent years, currently comprising 31% of TARC's operating budget. The agency now faces a "fiscal cliff," risking a significant budget shortfall that would require drastic cuts in operating expenses unless an equivalent funding source is secured. TARC's ongoing ridership decline also puts its share of federal grant funds for capital improvements at risk, as several federal funding streams are based on grant formulas that include ridership as a significant variable.

Public Perception

Public transit does not enjoy the widespread support and usage as it did in the Louisville of an earlier era. In many ways, there is an inherent conflict between the role of providing widespread, equitable and affordable means of mobility for those who most need it, and providing frequent, fast and reliable service focused on major corridors where it can provide an effective mitigation against traffic congestion and "function like a business." These competing service objectives are commonly referred to as providing service coverage or providing service frequency. No transit agency can fulfill these roles equally well, leading to unavoidable tradeoffs and, unsurprisingly, community members who are not fully satisfied with the policy choices that must be made. On top of that, TARC as an organization was severely impacted by serious mismanagement and misconduct by former executives, making the general public and elected officials less willing to support the agency's future needs, notably increased and sustainable funding streams. Subsequent changes in leadership addressed this directly, yet the agency still needs to rebuild its reputation and change public perception of TARC. TARC must focus on being excellent at the basics, with little room for error, in order to win back the public's trust.

Physical Infrastructure

Beyond the quality of transit service that TARC provides, perhaps the next most significant factor in the daily experience of TARC's riders is the quality of the first- and last-mile connections to and from transit stops. Riders' access to TARC depends on the connectivity and accessibility of the regional sidewalk and bicycle network, which are generally the responsibility of partner agencies. As such, many of the elements that feed into riders' "first impressions" of TARC are things that TARC has little to no control over. Improving these networks, including devoting additional sidewalk space to improve substandard transit stops, will require substantial coordination with and support from Metro and other jurisdictions.

Similarly, Louisville Metro also controls most of the roadbed, traffic controls, and street right-of-way. This means TARC's ability to develop and operate more efficient service patterns, such as dedicated transit lanes or transit signal priority, relies on interest and action from partner agencies.

Enhanced funding at the local level would allow for operational improvements, including expanded and enhanced service options while also increasing the pool of local match dollars to leverage federal grants.

Sprawl

Like many metropolitan areas nationwide, Louisville's growth over the past 50+ years has largely been outward. Jobs and housing have been decentralizing for decades, and the area has gone from being focused on the urban core of downtown as the dominant focal point to a pattern of many, many different activity centers and 'nodes' of development across a multi-county area. As a result, travel origins and destinations are much more spread out than they once were, both spatially and temporally, as the share of the workforce on conventional Monday-Friday, 8-5 shifts has declined. However, while land use and demographic patterns shifted rather dramatically, the TARC transit service network has not been able to keep pace and adapt to changing travel patterns and consumer expectations. TARC regularly is asked to extend service to outlying "big box" retail and other employment centers in greenfield or exurban areas, requiring routes that traverse long distances often through areas that lack the infrastructure and land uses needed to support ridership and transit use.

Compounding the challenge of a more spread out population, the form of development that has been built has also changed significantly. Significant portions of the urban core inside the Watterson Expressway, and to some extent inside I-265 in Indiana, were built before the automobile became the dominant mode of transportation and therefore was designed at a more human scale with much better walkability, sidewalk infrastructure, and a mix of uses that are also transit-supportive. However, development since that time has been much more auto-oriented. Because every transit trip begins and ends with at least some movement as a pedestrian, the correlation between walkable places and places where transit can thrive is very strong. For this reason, new developments that isolate residential from other uses, that are built around road networks that are circuitous and lack the gridded connectivity found in older areas, and that set back buildings from the street face to accommodate large swaths of parking are all inherently challenging for public transit to serve effectively.

Legacy Service Network

TARC's network of transit routes generally radiate outward from downtown. This "many-to-one" configuration is designed to serve a population where most jobs and activities are in the city's urban core. Still, Louisville's expansion over recent decades has shifted away from this pattern.

The sprawling residential growth noted above, coupled with major employers choosing to locate throughout the metropolitan area—often in areas not served by TARC—has created a "many-to-many" layout of demand. The radial layout of TARC's service network means that riders heading between outlying destinations outside of downtown frequently endure long travel times, often along circuitous routes, to reach transfer points in the downtown core, even for nearby destinations.

This incongruity between current mobility needs and a system built around outdated travel patterns is a major factor in TARC's declining ridership in recent years. For this reason, "Route Optimization" and "System Restructuring" are the first two recommended improvement concepts in the recently-completed COA, to bring TARC's services into alignment with current and future transportation needs.

Insufficient Service Levels

Louisville's sprawling footprint means that TARC has a large service area to cover, and its current level of funding limits the amount of service that can be provided. Finite funding necessitates that TARC's coverage is spread quite thin over this area, with many areas receiving no transit service. Within areas that receive service, many lines see waits of 30 minutes or greater between buses, limiting the usefulness of transit to all but the most dedicated riders.

As is relatively common, TARC in many cases has 'split' their routes into several branches in an effort to provide coverage in more outlying areas. While this approach can offer more coverage and access for riders, it does so at the significant cost of reduced quality. Not only are the branches operating less frequently than the primary route, they also are difficult for riders to understand and navigate. The simplest example being one where a new rider boards an outbound bus thinking it will take them to a point along one route branch, without knowing that the particular trip they've selected will instead service one of the other route branches. This experience can be confusing and frustrating and dissuade a new rider from becoming a repeat customer.

In addition to being inconvenient to the riders, infrequent service is a challenge for TARC itself regarding ridership. Attracting new users away from driving or other travel modes requires TARC to improve the complete transit experience, from a current or prospective customers first engagement with the agency website, to their time spent at the bus stop, to their experience onboard and finally the quality of their ride.

Workforce Hiring & Retention

Transit providers require staff to operate their routes and maintain their fleets. Labor availability has become an increasingly significant concern for transit operators, as with most industries in recent years. In addition to the standard issues in attracting, hiring, training, and developing a diverse pool of talent, transit agencies also face additional challenges from higher-than-average attrition due to retirement. This occurs because transit agencies are more likely to employ an aging workforce, with over half of the nation's public transportation workforce expected to become eligible for retirement in the next five years.

This turnover is particularly troublesome for transit agencies as their operators and maintenance professionals require specialized training, especially as transit fleets are increasingly electrified and computerized. Essentially, each unretained employee is a lost investment in education and experience.

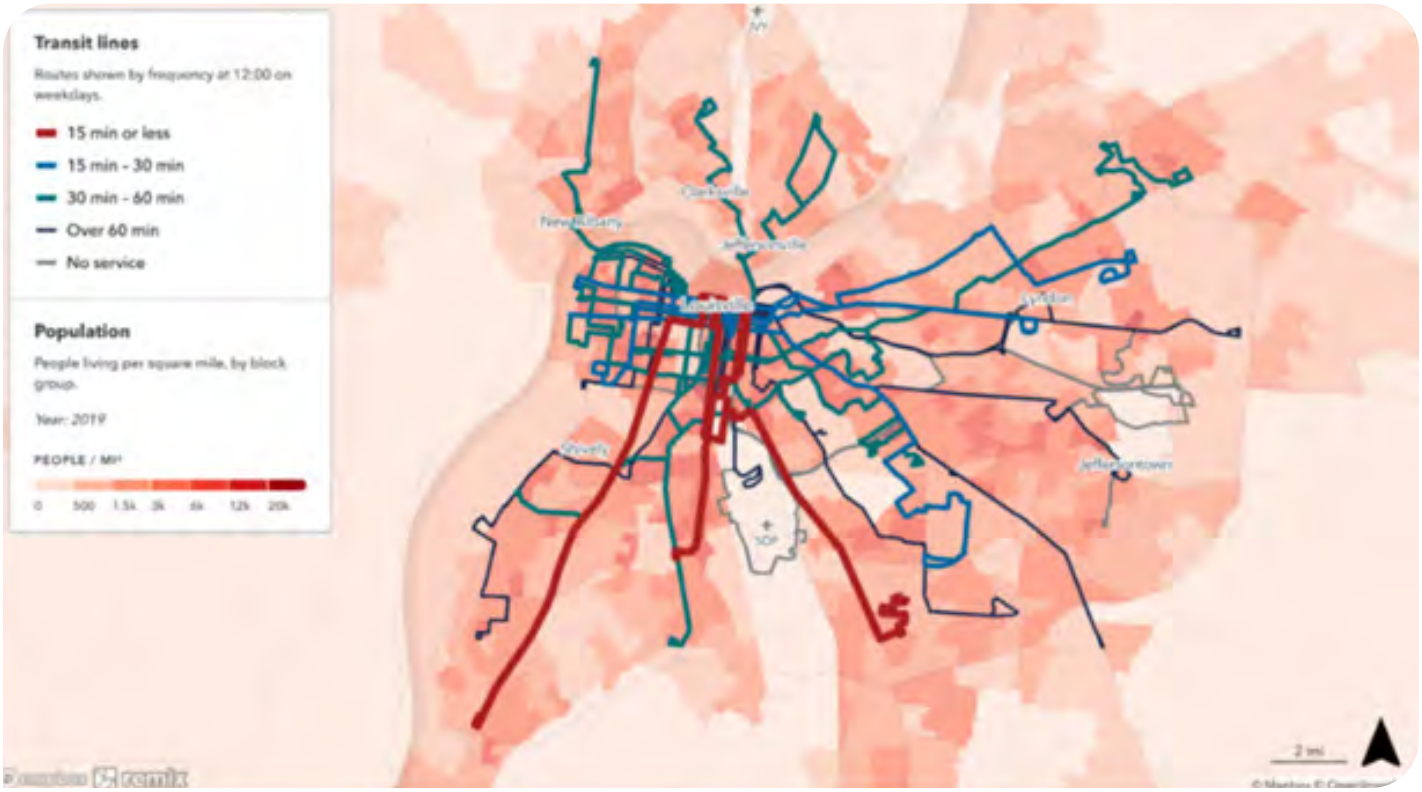


Figure 10: TARC Service Area and Service Frequency Compared with Regional Population Density (Source: SWOT Analysis Issues Paper)

Competing Mobility Providers

The increasing popularity of competing mobility services is another factor contributing to the decline of transit ridership in recent years. Whereas transit previously competed with walking, biking, motorbike, and private automobile, travelers now have many travel options at their fingertips through rental scooters, bikesharing, private microtransit, and ridesharing/transportation network companies (TNCs) such as Uber and Lyft.

These mobility services present compelling, point-to-point travel alternatives at a variety of price points but also represent an opportunity for transit agencies to collaborate through platforms such as Mobility as a Service (MaaS) apps. MaaS apps present riders with comprehensive information, allowing them to evaluate trade-offs between convenience and price across various options, which can benefit transit providers by introducing new riders to the service and improving visibility in areas where transit is competitive.

Opportunities

Partnerships & Collaboration

TARC's partner agencies have expressed a clear intent to develop a more transit-supportive environment for the Louisville region in the future. This includes Louisville Metro, shown mainly through their forward-thinking Move Louisville plan and KIDPA, KYTC, and other local governments. TARC's relationships with staff at these municipalities and agencies present a real opportunity for communication and collaboration. Although the implementation of solutions inherently has its challenges, the inertia of governmental entities can work together to solve the region's mutual challenges. Similarly, the continued support of the community and regional advocacy groups will be vital in garnering the political will to enhance TARC, and the agency must continue to nurture these relationships.

Economy, Environment, and Equity Messaging

Society's increasing consciousness of social justice and sustainability issues aligns well with the goals of public transit agencies. TARC has the opportunity to position itself as part of the solution for major issues facing the region by promoting the benefits it provides as an equitable mobility provider, a literal driver of the local economy, and an environmentally conscious means of transport, among others. TARC Tomorrow includes actionable goals towards these ends, including

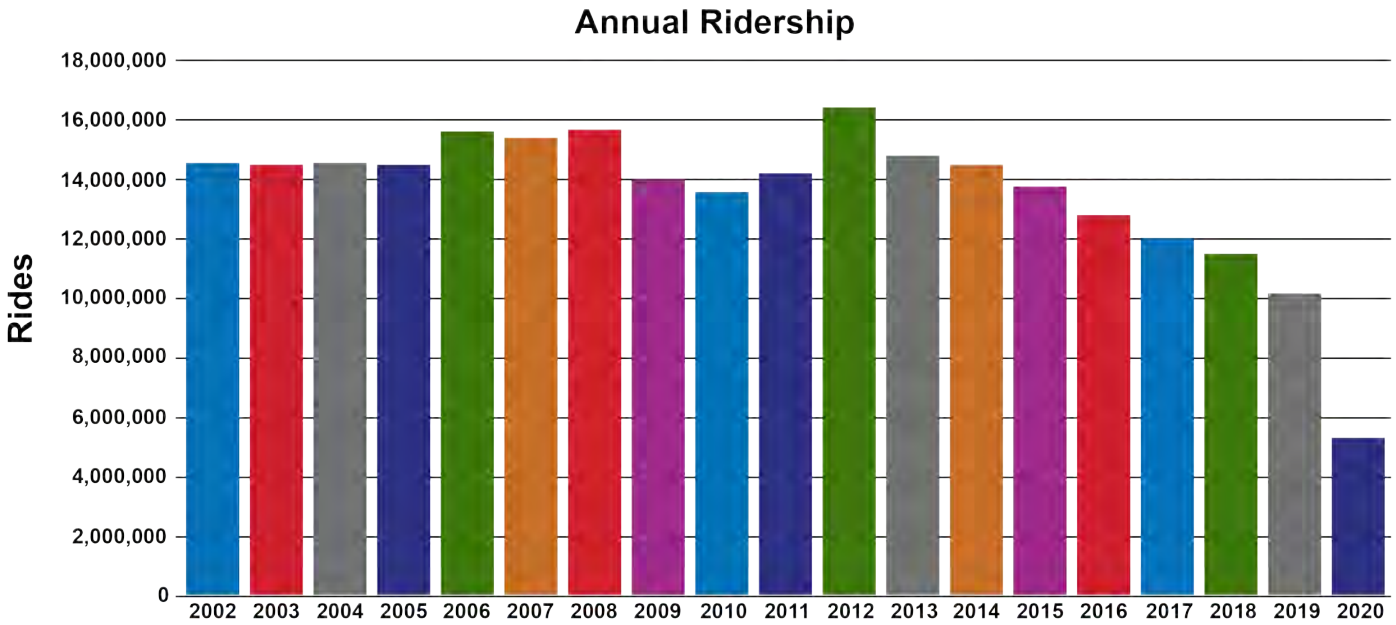


Figure 11: TARC System Annual Ridership 2002-2020 (Source: National Transit Database)

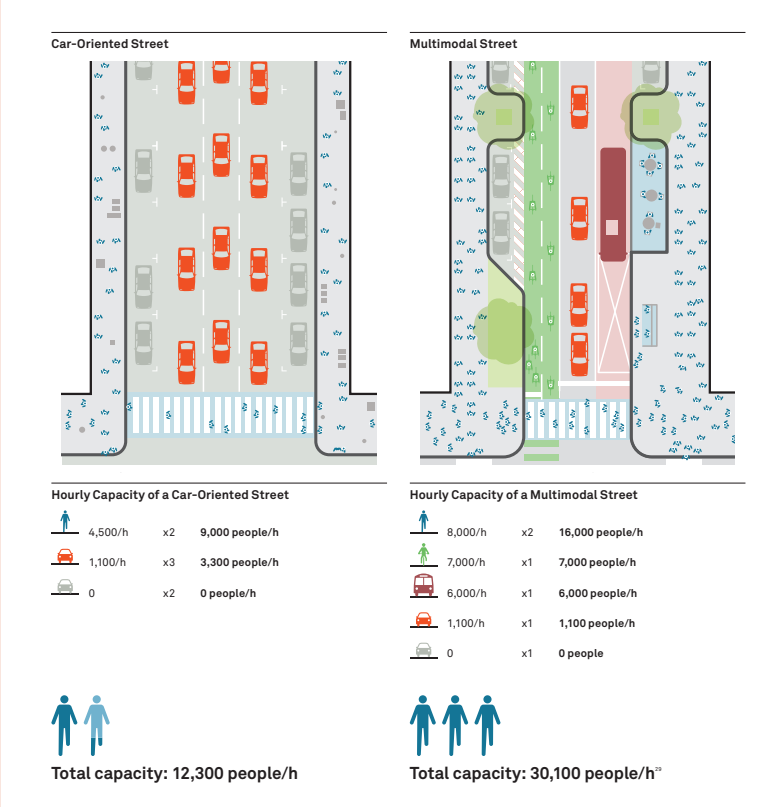
developing an equity action plan and moving towards a zero-emissions fleet. Including these items in this long-range plan will also support outreach and messaging efforts to the press and the public, allowing the agency to effectively tell its own story and eventually garner public and political support. As one example and as seen in the graphic in Figure 11, reimagining the public right of way in collaboration with Metro and other partner jurisdictions can serve as one very effective means of increasing access for disadvantage populations and reducing automobile dependency.

Implement COA Recommendations

Although the road to TARC Tomorrow is long and will require sustained commitment over the coming decades, all journeys begin with a single step. TARC is fortunate to already have a solid playbook for its next move through the Comprehensive Operations Analysis (COA), completed in 2021. The COA includes actionable, achievable steps for TARC, beginning with a bus network redesign to address the challenge of TARC's antiquated system. Having a plan like the COA, which already has support, allows TARC to immediately begin improving service for its riders, employees, and the region at large.

Mobility-on-Demand Services

While urban sprawl is a significant challenge for fixed-route transit services, the prevalence of smartphones among transit riders, in combination with the increasing sophistication of agencies' dispatching algorithms, has enabled the development of a new pattern of transit service. Mobility-on-Demand (MOD) is a service pattern where transit vehicles, often much smaller than a traditional city bus, provide service to riders who have hailed a trip via an app or phone call, providing responsive service throughout a predefined service area rather than along a fixed route. Vehicles are dispatched and routed in response to specific demand, minimizing wait times and travel times while still providing robust coverage of transit service across a much larger area than the walkshed of a traditional fixed route. MOD presents a tremendous opportunity for TARC to improve its service coverage and access in low-density areas while remaining cognizant of operational expenses.



An Example of Collaboration Benefits

By collaborating with local partners, TARC can support the development of Complete Streets that help transit work better while also improving the capacity of the mobility system in an environmentally conscious way.

Figure 12: Comparison of Capacity of a Car-oriented Street and a Multimodal Street (Source: NACTO)

Mobility Hubs

Traditional transit centers play a useful role in major transit systems, providing services and enhanced stop amenities at major transfer points, minimizing the friction often associated with changing routes or modes. A developing trend is to bring these benefits to more locations through smaller, neighborhood-scale facilities known as mobility hubs. Like their larger counterparts, mobility hubs bring one or more transit lines together with complimentary transportation services like ridesharing, bikeshare, and dockless micromobility, and even personal mobility options like bike racks. Depending on community interest and business support, mobility hubs are also an opportunity to locate neighborhood amenities such as package pickup, civic gathering space, and small-scale retail, further increasing the attractiveness and utility of the hub.

Figure 13: Example of a mobility hub

Facility Renovations & Upgrades

Technological developments constantly provide new tools and resources in our daily life, and transit service is no exception. From rider information to connected vehicles to the very drivetrains that power the fleet itself, evolving technology can allow TARC to improve safety, efficiency, rider experience, environmental impact, and more. In this way, the fact that some TARC facilities and vehicles need upgrading has a silver lining. These upgrades are a perfect opportunity to replace outdated systems and implement new tools and technology. With appropriate resources, new maintenance and storage facilities could furthermore give TARC the capacity to expand service and create a work environment attractive to the Transit Employee of Tomorrow.

Funding Challenges and Opportunities

While funding is first and foremost a challenge for TARC, recent federal and state-level developments have created opportunities for TARC and other transit agencies. The 2021 Infrastructure Investment and Jobs Act established several new funding streams, including multiple transit-specific grant programs, while also relaxing requirements and increasing flexibility for several existing programs. These changes allow TARC to seek out new funding streams and positions the agency to compete for previously unattainable dollars. With funding for transit-supportive infrastructure such as sidewalks and bike facilities there is now momentum for transit investment at all levels of government.

	2010 Census	2015 Estimate	2020 Projection	2025 Projection	2030 Projection	2035 Projection	2040 Projection
Total Population	741,096	763,623	790,010	815,058	837,477	857,013	875,459
Population in Households	726,943	748,427	774,511	799,248	821,350	840,563	858,679
Population in Group Quarters	14,153	15,196	15,499	15,810	16,127	16,450	16,780
Total Households	309,175	323,630	336,587	349,103	360,287	370,882	380,593
Average Household Size	2.35	2.31	2.30	2.29	2.28	2.27	2.26

Table 5: Jefferson County Population Projection (Source: louisville.edu)

Our Evolving Region

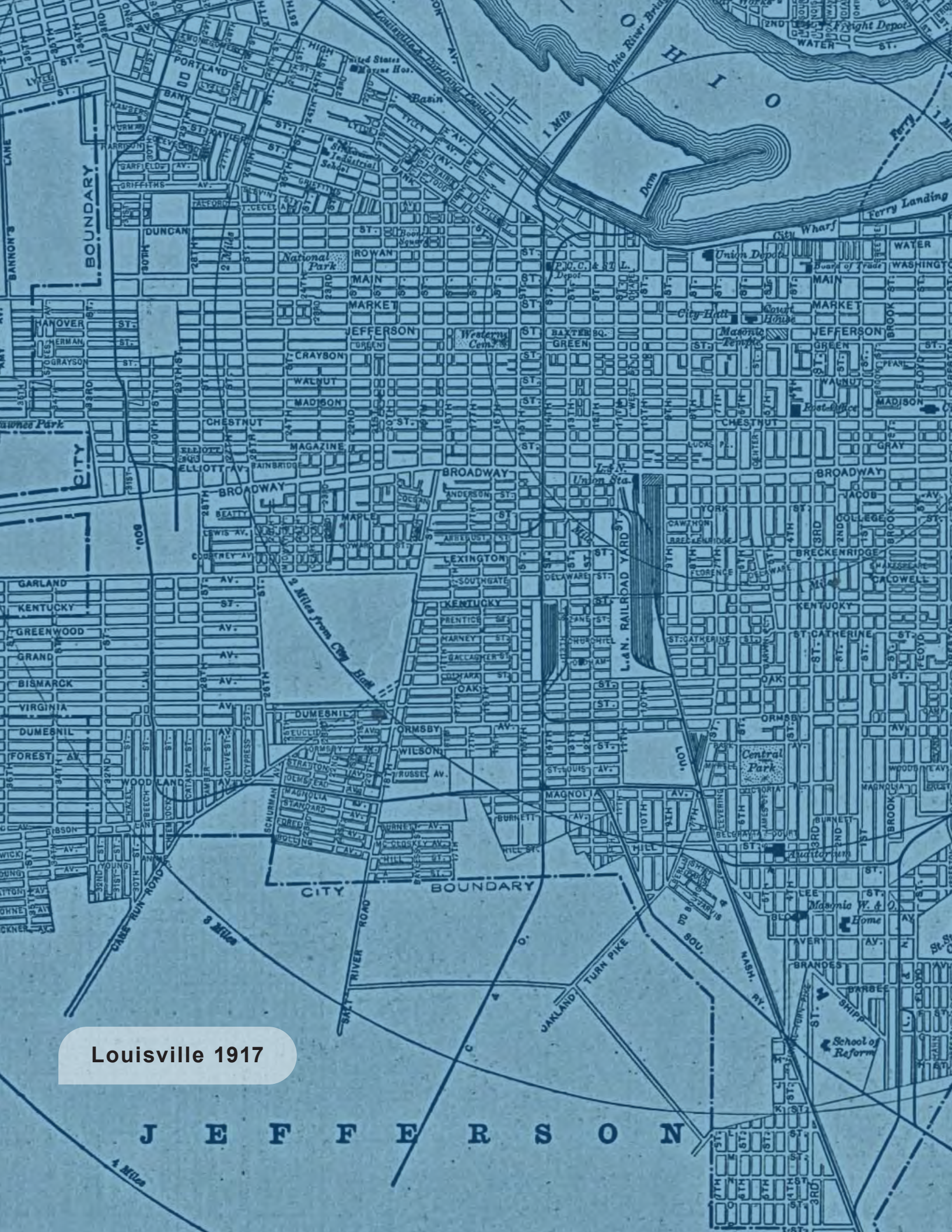
Louisville is projected to see steady growth in the decades to come, growing by an estimated 143,810 additional residents within Jefferson County by 2050 according to KIDPA's 2050 Forecast of Population, Households and Employment. While this is only a projection and not destiny for TARC or Louisville, the shape of the growth that is projected is not ideal. This can be seen in the map in Figure X where the lighter grey and white zones are projected to see no increase or even a decrease in population and the blue and darker grey areas are expected to gain residents. Unfortunately, this forecast is predicting continued outward expansion and a stagnant or even shrinking urban core. This forecast should serve as an alarm bell of sorts for the region, as this type of development pattern is auto-oriented in nature, and very difficult to serve effectively with public transportation due to the dispersion of people, jobs and activities.

As the region grows, the transit industry is also evolving rapidly. Technological inputs and fundamental shifts in the "why" of public transit are shaping the future. The COVID-19 pandemic resulted in transit agencies re-thinking their role in their community.

As a response to sudden COVID-related stay-at-home orders, TARC, like many transit agencies around the country, reduced service offerings and suspended some routes as ridership dropped significantly. TARC worked hard to offer mobility options to continue access to jobs and other necessary destinations. Now, with unprecedented challenges and unique opportunities, TARC can change the status quo, create space for new ideas, and advance new programs and policies to move Louisville forward.

With the drastic changes in travel demand and economic challenges, there has been a reduction in single-occupant commuters as work-from-home becomes more than just a temporary situation for a substantial percentage of the workforce. This now allows opportunities to reallocate scarce right-of-way for ideas such as dedicated bus lanes and traffic signal priorities, to increase the speed and reliability of bus transit.

It also has the industry looking toward the future. With the lack of personnel staff, many transit agencies are reducing service due to a shortage of operators. The demand and need for automated vehicles has never been greater. These automated operations can be explored in a controlled environment, such as for bus yard operations between servicing, fueling, and washing functions or on a fixed guideway



Louisville 1917

TOW HEAD ISLAND
Willow Bar
CATALPA
BROWNSBORO
Ky. Blind Institute
U.S.
SYCAMORE AV.
SHELBYVILLE
ROAD
NASH
PAYNE
FRANKLIN
ST. Vincents Orphan Asylum
City Work House
WORK HOUSE ROAD
Middle Fork Bear Grass Cr.
CAVE HILL CEMETERY
306 Acres
CHEROKEE PARK
City Hospital
SLAUGHTERS LANE
EVERETT
BROADWAY
BARNET
HIGHLAND
BAXTER
SARDTOWN
St. Louis Cemetery
VON BORRIES
NEWBURG ROAD
SHERWOOD AV.
CITY BOUNDARY
ROAD
St. Michaels Cem.
2 Miles
POPLAR LEVEL ROAD
TEXAS
PRESTON
SHELBY
CITY BOUNDARY
3 Miles from City Hall
4 Miles
CLARKS LANE
COUNTY
N
Railroads thus :
Scale of Feet
0
1000
2000
3000
4000
5280
ONE MILE

tarc Tomorrow

Our Opportunity

This section–Our Opportunity–builds on Our System by defining six themes around which TARC Tomorrow is built. The themes are Rider Experience, Mobility and Innovation, Service and Expansion, Financial Sustainability and Funding Growth, Equity and Environment and Collaboration. These themes represent significant challenges and opportunities for TARC and form the basis for the last section of the plan –Our Guide–which describes a detailed action plan for how the agency can move forward from today's position towards a new and better TARC.

Each theme is developed below with several components.

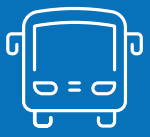
1. A brief description of the Theme
2. A spotlight example of a best practice that can serve as a model for TARC
3. A brief description of Goals to support the Theme

Rider Experience

In a world where many people expect to be able to summon a ride or reserve a trip at a moment's notice and where the personal automobile offers ever-increasing levels of comfort and convenience, enhancing the rider experience for transit users is more important than ever before. The theme of user experience (UX) extends well beyond the actual time a transit rider spends onboard a transit vehicle. The UX encompasses their entire transit experience from finding information on the agency's website, buying transit passes, spending time waiting for the bus, to reaching your destination. For transit to thrive and to become more useful for more people in Louisville, considering each customer 'touch point' is critical. This theme focuses on several areas where TARC can make improvements over the life of TARC Tomorrow.

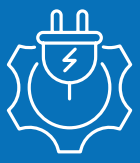
The following goals are intended to focus on enhancements that can personally benefit our current riders, while helping to attract new riders in the future.

TARC Themes



Rider Experience

Listening to our riders and aligning our plans with their needs means we're building a more reliable, equitable and useful system to provide access to all the opportunities that Louisville offers.



Mobility and Innovation

The world is changing faster than ever before. By thoughtfully adopting best practices and innovative technologies, we will bring new levels of convenience and quality to our transit system.

Service and Expansion

As Louisville grows and mobility needs change, we'll work to increase service levels on existing services and add new services to improve access for the community.

Financial Sustainability and Funding Growth

Meeting the growing mobility needs of the community means TARC needs added resources to grow and improve services.

Equity and Environment

Doing right for people and the environment happens through understanding, engagement, and action, and we're working hard to uphold and support community values in these areas.

Collaboration

Working in partnership with public agencies and the private sector to foster a more transit-supportive Louisville region is an ongoing and increasingly important effort for TARC.

Modify Services to Better Meet Community Needs

As identified in the Comprehensive Operations Analysis and reiterated in the SWOT analysis completed as a part of TARC Tomorrow's development, TARC's system of service has simply not kept pace with the changing demographics, mobility needs and travel patterns of the Greater Louisville area. In fact, much of the route structure is still built around the same services that have existed for decades. In many ways this makes sense because the former streetcar routes, for example, were developed in coordination with the adjacent land uses that are still today relatively transit supportive. However, outward expansion of homes, jobs and activities and the resulting decentralization mean that many of today's mobility needs no longer center on the downtown area. Taking action to modify services so that they better meet today and tomorrow's mobility needs is essential for TARC to achieve its mission.

Improve Transit Travel Times and Increase Service Reliability

A bedrock of a quality transit system that adds value to the community it serves is the ability to provide fast, frequent and reliable service. Buses stuck in traffic, that meander about, or that don't provide consistent levels of service mean that people cannot rely on the system and therefore will, whenever possible, find other ways to get around. Today's transit systems that are experiencing growing ridership and increased community support are those that have made willing to make significant, and sometimes difficult, changes to reduce delays, speed up services and improve reliability for their riders.

Figure 14: Seattle Bus Stop Example (Source: The Urbanist)

Develop a Comprehensive Bus Stop Improvement Program

A major part of the transit experience, and one that can leave a lasting initial impression, is the time customers spend getting to and waiting at their transit stop. Is the journey as a pedestrian to the transit stop safe and comfortable? Is the transit stop simply a pole in the ground, or does it have a shelter, trash and recycling, helpful information about the routes that serve the stop, where they go and how often they run, and a safe and comfortable place to wait? The impact on the customer experience between the two versions cited above is significant and goes a long way to determining whether customers will choose transit going forward. The now dated On-Board Ridership Survey found that over 35% of riders were dissatisfied with lighting and seating amenities at bus stops. Routinely seeking customer input via on-board ridership surveys and other means is an important component of a bus stop improvement program to help inform decision making and investment prioritization.

TARC will continue to improve the stop-level infrastructure throughout their system. These improvements lead to increased customer service and safety, with real-time information displays, improved shelters and seating, and additional lighting.

In addition to improving the infrastructure at the actual stop, TARC should revisit and update the standards for providing stops, looking at safety for other road users and other factors. This includes removing and consolidating stops where buses make frequent closely spaced stops. Over time, as customers request that a stop be added, there is a natural tendency to accommodate such requests with the end result being a situation where stops are too closely spaced. This results in delays for customers onboard, slower running times (eventually requiring additional buses and operators to provide the same level of service) and even impacts on public perception as those in automobiles grow frustrated by buses stopping so often. Optimizing stops along a corridor can help to reduce travel times and improve service reliability with the tradeoff in some cases of increasing the distance that riders must travel to access their nearest stop. Gathering input and communicating the agency's stop spacing guidelines within the Transit Design Standards Manual can help to justify stop spacing decisions. While challenging due to initial community resistance in some cases, consolidating stops yields multiple benefits, including the potential to provide more and better amenities at the stops that remain in service. TARC could benefit by including bus stop consolidation as a key element of a Comprehensive Bus Stop Improvement Program.

Upgrade the Fare Payment Experience for Customers and Reduce Barriers to Entry for New Customers

Attracting new transit riders stands as a significant challenge for TARC, and uncertainty about how to pay for service (Is exact change required? How does the farebox work? Is advance purchase required? Can payment be made with a credit card or smartphone? How much does it cost?) all can contribute to a potential rider choosing not to try transit. For this reason, taking action to upgrade TARC's existing system and modernize payment methods can make a significant difference for both current and potential customers. Equally if not more important is the ability for advance fare payment systems to increase equity and access using techniques such as fare-capping (relying on account-based electronic systems) to ensure that customers that pay on a per-use basis never pay more than those who can afford to buy a monthly pass. The On-Board Ridership Survey found that 59% of TARC riders currently use cash to pay for their fare. However, there is interest in smart card or app technology.

Assessing the current system, developing an approach, funding, and a timeline for upgrading or replacing it can position TARC to improve service and open new opportunities for collaboration and innovation.

Support Rider Safety at TARC Passenger Facilities and Onboard TARC Vehicles

The evidence is apparent that riding a bus is far safer than driving a car. However, despite statistics and multiple studies to support this basic fact, the perception of safety has a large effect on traveler mode choice and for this reason (as well, of course, as actual safety for both workers and customers) it is a fundamental goal for any transit agency including TARC to design and operate a safe transit system. This includes continual improvement and periodic campaigns to improve safety system-wide, primarily for customers at the bus stop and onboard TARC's services.

Mobility and Innovation

The world of personal mobility has shifted more in the past ten years than in the decades preceding. The rise of Uber and Lyft and related services, the explosion in micromobility including shared bikes and scooter systems, and changing consumer preferences and expectations (including an ever-growing impatience with waiting) have all contributed to these changes. However, perhaps the single biggest change has come from the role of wireless connectivity and personal electronic devices, primarily cell phones. With access to information in real-time virtually 'anywhere, anytime', travelers can now make much more informed choices about how and when they make trips. TARC has recognized this transformative power and has already made strides in developing an app and creating a web portal, etc., and there are additional opportunities to leverage the power of technology and communications to make transit more attractive and customer-friendly, as expressed in the following goals.

Leverage Technology and On-Demand Services to Improve Service Coverage and Access

Among the most promising 'emerging mobility' options for public transportation has been the marriage of a long-standing concept - on-demand transit–with the power of cellular connectivity, real-time vehicle tracking systems, sophisticated algorithms to optimize routing and user-friendly interfaces to create a form of "Mobility on Demand" (MOD). MOD services have been implemented by dozens of transit systems across the country with varying levels of success. The best examples show they can deliver a higher quality of service for a lower overall cost than traditional fixed route service, but only in certain situations. Why can't MOD simply replace what some perceive to be outdated and old-fashioned fixed route transit? Because of basic economics- fixed route transit is highly scalable and efficient as ridership on a line or in a system grows, with buses having the capacity to deliver many trips per hour. For example, TARC's Route 18 Dixie Highway was providing more than 6,000 trips per weekday before COVID in a very cost-effective manner. MOD, which is often a one customer per driver

situation and is rarely more than 2-3 customers onboard at any given time, simply cannot move the same volume of people at anywhere near the same cost. In fact, MOD's cost per trip is often two to five times more expensive per trip than a productive fixed route.

Given the above, what role does MOD play, and why should TARC be taking steps to implement it via pilot projects and full deployment? The answer lies in the area being served, land use, development patterns, and road and sidewalk infrastructure available. For example, these factors that affect transit-support are largely positive inside much of the Watterson Expressway. However, much of the remainder of the TARC service area and the surrounding metropolitan area do not have these transit-supportive characteristics because they were developed to accommodate auto drivers above all other modes. This car-centric orientation makes it much more difficult and costly for traditional fixed-route services to perform effectively and efficiently. It is in these areas where the opportunity exists to use MOD to extend the reach and access of public transportation, creating opportunities for TARC to expand service in a manner that is best suited to the geography being served. This goal will build off TARC's current work to evaluate MOD feasibility.

Enhance and Expand Employer Shuttle Partnership Program

A related area in which transit systems are leveraging technological advances and using innovative approaches to improve mobility and access for the community is through partnership arrangements for focused service. The ideal situation from a transit perspective is for major attractions such as employers, health care and social service facilities, government offices, retail and educational facilities to locate along a major transit spine (ideally part of a frequent route network). However, transit accessibility is all too often an afterthought in the site selection process with other factors driving the decision-making. This leads to new development taking shape in a greenfield site or off of major corridors in outlying areas, often with street networks that make serving the location difficult operationally, more costly and requiring route changes that are contrary to the service design principles of clean, simple and intuitive alignments. While there are clearly challenges involved in working with private sector employers to fund and either contract for shuttle services or operate them directly, this model (which may involve some form of cost-sharing) has proven to be an important part of the mobility portfolio for systems across the country. TARC should identify best practices and develop an approach to seek such partnerships in cases where service is needed to fill a "first and last mile" to and from these outlying employment sites.

Identify and Develop Mobility Hubs in Key Locations to Improve Access and Increase Non-Auto Choices for Travel

The emergence of new mobility options and smart personal devices over the past decade has created a significant opportunity to reimagine traditional transit centers and park and rides as Mobility Hubs. What is a Mobility Hub? They are “places in a community that bring together public transit, bike share, car share and other ways for people to get where they want to go without a private vehicle.” Mobility Hubs can also serve as the anchor points for MOD zones and/or Employer Shuttles as discussed in the two sections above, providing connections not only to the fixed route network but also other forms of mobility. These facilities can also be scaled or divided into tiers to correspond to their context and anticipated usage and include community-supportive features such as kiosks for social service or medical providers, lockers for deliveries, or vendor stalls to provide opportunities for local entrepreneurs. Mobility Hubs can also serve as “innovation platforms” where emerging mobility concepts can be piloted. As one example, Vertical Take-Off and Landing (VTOL) passenger services are likely to become available within the timeframe of TARC Tomorrow, as well as the potential for cargo and/or passenger drone services. While these may seem far-fetched at the moment, they offer a rationale for designing mobility hubs to have the flexibility to accommodate future transportation services to meet the community’s needs.

Figure 15: Mobility Hub Concept (Source: Sandag)

In the COA, TARC has identified five locations where potential improvements could be implemented to promote Mobility as a Service (MaaS) and also create new opportunities for pedestrians, bicycle, motorized bicycles, scooters, and on-demand services. These locations, listed below and shown on the map in Figure 14, also have opportunities for land-use changes that could support high density transit oriented development.

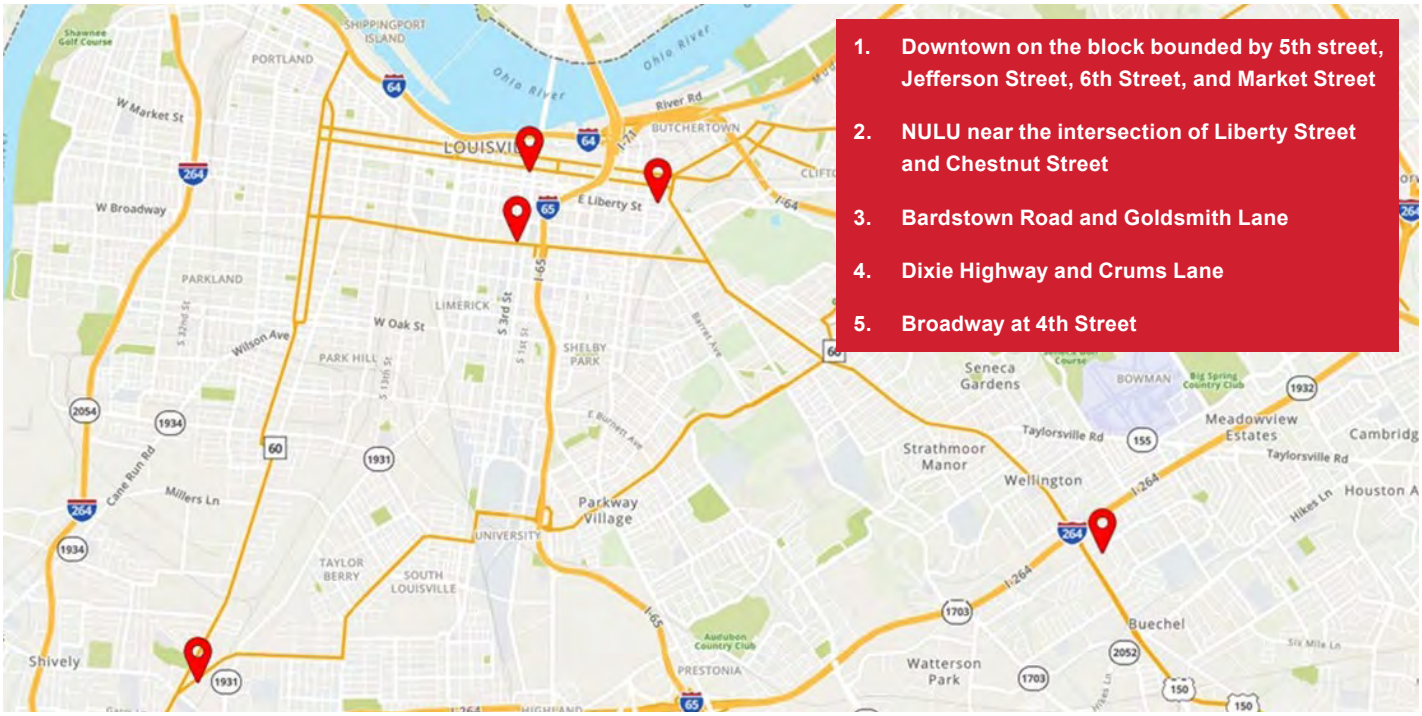


Figure 16: Potential Mobility Hub Locations Map (Source: TARC Comprehensive Operations Analysis, May 2021)

Service and Expansion

To meet the growing and changing mobility and access needs of the Greater Louisville area, the need for TARC to increase existing service levels and expand service is very clear. Today's TARC system is insufficiently funded to provide the quality, frequency, speed and reliability of service required to serve today's customers better and become useful and convenient enough to attract a larger share of the mobility market. This theme is not simply to benefit TARC however, it is about creating a better Louisville–one with more access to opportunity, improved air quality and a cleaner environment, a more attractive and successful economy and a more equitable condition where car ownership is not a mandatory burden for residents.

In 2021, TARC finalized the COA which concluded in three proposed system improvement concepts to optimize ridership, frequency, and coverage based on current and future funding.

Concept 1: Route Optimization

Modified existing network with neutral impact on the existing 2021 operating budget:

Goals:

- Maintain existing service
- Improve service quality and reliability
- Simplify complex routes and timetables
- Adjust routes to provide cost savings
- Increase frequency on key routes

The Route Optimization Concept maintains the general structure and coverage of the routes, but with route, simplifications to eliminate patterns or deviations and set frequencies to 20-, 30-, or 60-minute intervals to improve reliability and schedule understanding. This concept also includes service to Indiana's industrial and warehouse area, implemented through Congestion Mitigation and Air Quality Improvement (CMAQ) Program.

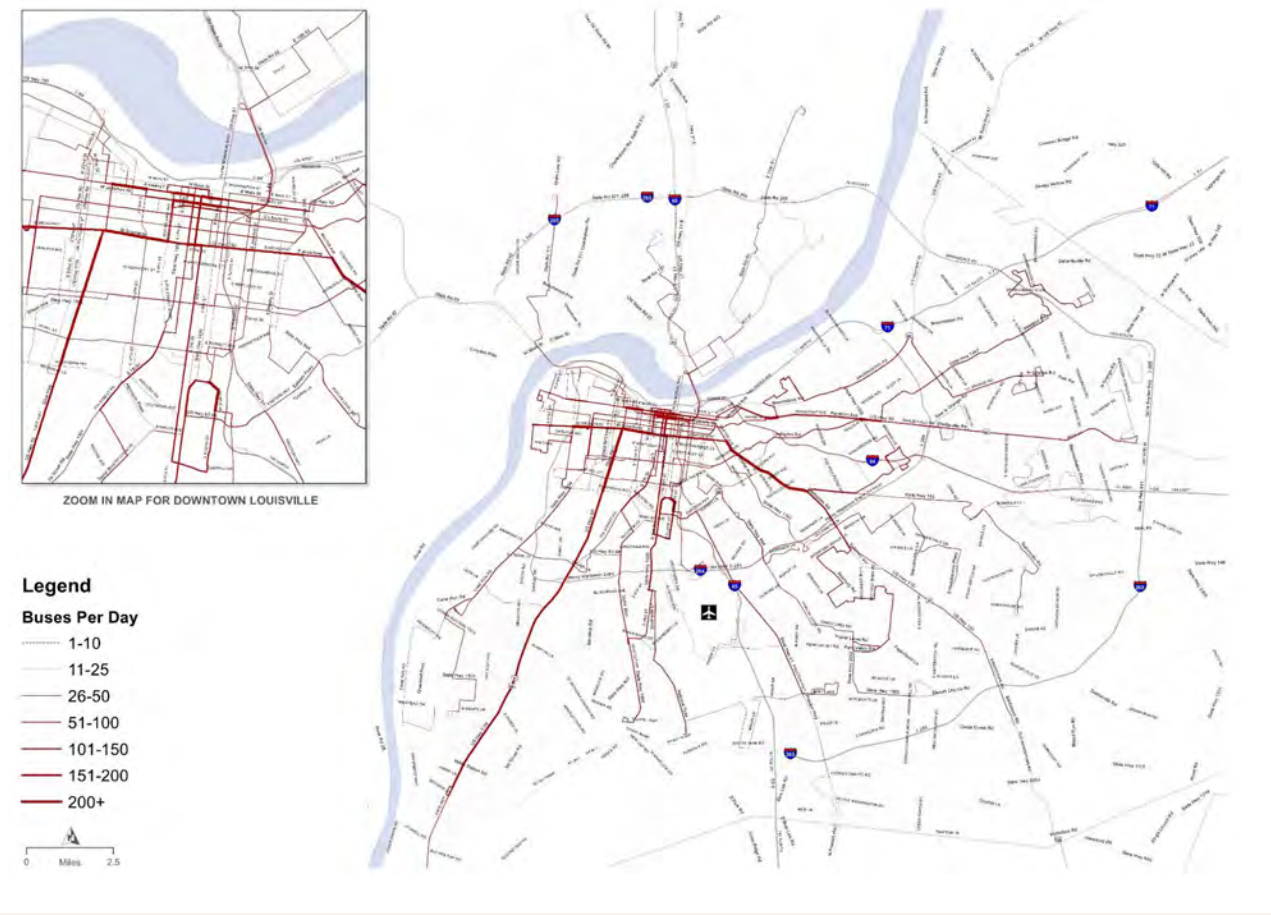


Figure 17: Route Optimization (Concept 1)–Weekday Frequency

Concept 2: System Restructuring Concept

Build upon Route Optimization concept and blend frequency with coverage with the cost of 18% / +9.7M additional funding. (Numbers from COA, might be from 2019).

Goals:

- Maintain existing service coverage either through modified fixed routes or on-demand zones
- Establish a frequent core network
- Simplify the network and improve legibility
- Streamline routes and reduce duplicative service

The System Restructuring Concept proposes new routes, an intuitive naming convention, and set the frequency of 15-, 20- and 60-minute intervals to improve reliability and schedule understanding.

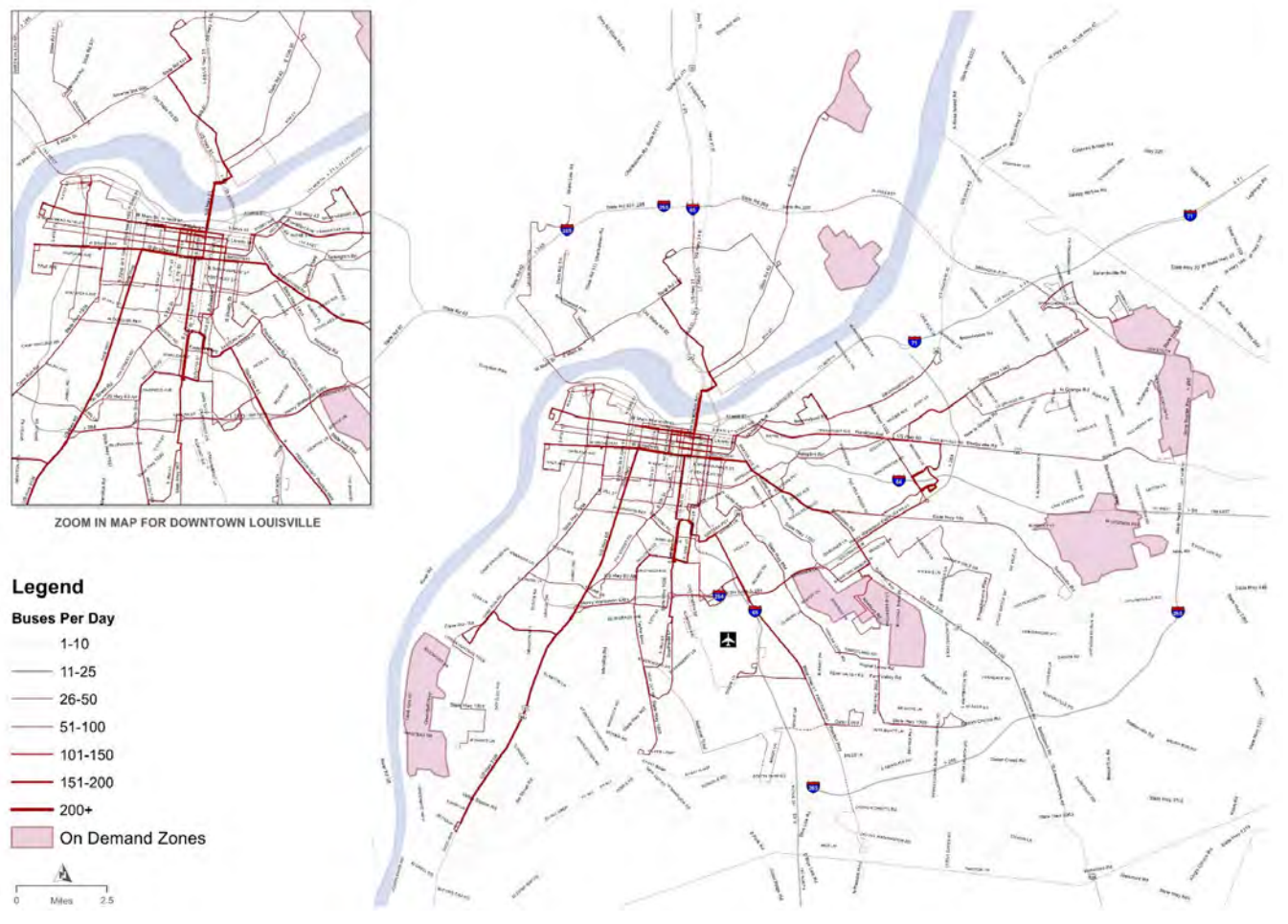


Figure 18: System Restructuring (Concept 2)–Weekday Frequency

Concept 3: System Vision Concept

This is a 5+ year long-term concept that would continue to build upon prior improvements with expanded service coverage and route frequencies. This would require an increase of approximately 31% / +17M over the 2021 budget.

Goals:

- Expand service coverage
- Expand the frequent core network
- Reintroduce express routes

Given the development patterns of the Louisville metro area, on-demand zones will be developed to provide service to both high-density areas and high employment areas where service by fixed route is not achievable.

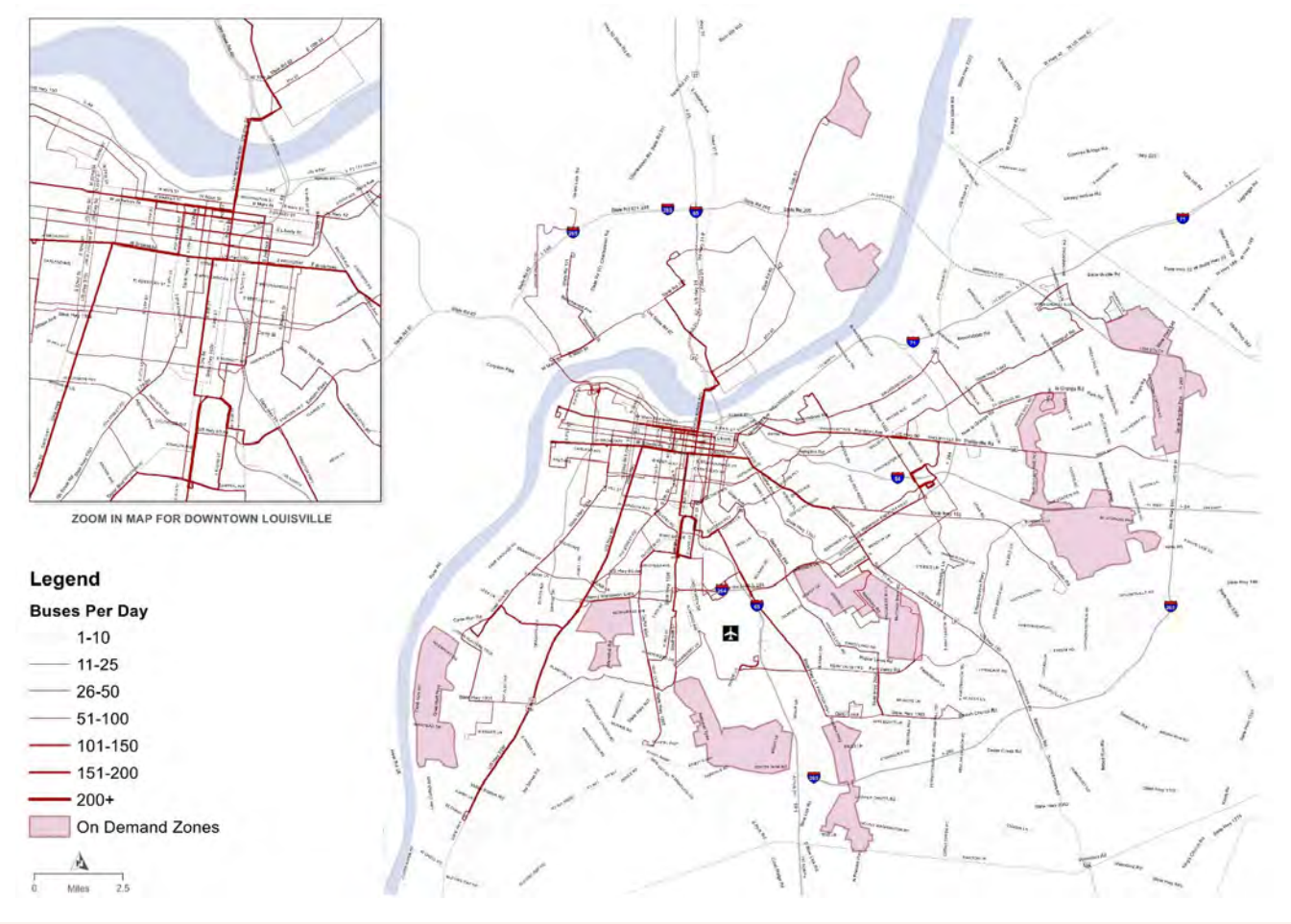


Figure 19: System Vision Concept (Concept 3)

Recommended Network

In the next 10 years, TARC should focus on several initiatives defined in the Guide to increase reliability, service frequency, ridership, and regional collaboration. Due to the financial limitations that TARC is experiencing and rebounding from a post-pandemic world, the transit system plan should be a combination of concept one and concept two from the COA. **High Frequency Network**

Establish a Frequent Service Network

Of the transit systems across the country that had success in growing their ridership pre-COVID, virtually all attribute their success to the deployment of and emphasis on frequent transit service. While agency definitions vary somewhat, in general, a route can be termed frequent service when it operates at least every 15 minutes across the majority of the service day, ideally seven days per week. Why has this been successful? Primarily because, particularly in the current world of mobility and consumer expectations, the 'traditional' level of half-hour or hourly service is simply not convenient enough for a large share of the transportation marketplace. However, when service levels are improved to every 15 minutes or better, riders no longer have to plan their daily lives around the bus schedule, they can enjoy the comfort and convenience of knowing that a bus will be along soon if they simply walk out to the nearest bus stop. Additionally, the rise of other convenient and essentially on-demand mobility options such as Uber and Lyft, bikeshare, carshare and scooters in some cities has further increased the need for transit to enhance its service quality to effectively compete. The map below shows the proposed Salt Lake City Frequent Route Network. Notably, one of the key actions to make such a network successful is in the map design and associated marketing and outreach. It is essential to make it as clear as possible to customers, stakeholders and the community what the network is and where (which corridors) it operates.

While additional resources (transit vehicles, operators and funding) are needed to fully deploy a frequent route network at TARC, one might ask: what will frequent service look like? Frequent service will be provided by an interconnected network of routes with a high level of reliable, easy-to-use service all day, every day. These routes will offer service that comes at least every 15 minutes, 12 hours a day on weekdays and 8 hours a day on weekends. Stop spacing will be optimized for operational efficiency while accounting for proximity to transit origins and destinations and walk distances will be approximately every quarter mile. This network will allow riders to travel faster and more conveniently for short, local trips to major destinations and mobility hubs. Frequent service will be reliable. Buses will move quickly along streets where buses have priority. TARC and city partners will invest in capital improvements to boost speed and reliability, such as bus lanes, signal priority, queue jumps, and other improvements. Improved fare payment systems, potentially including off-board fare payment at key stops and heavily used transfer points will get customers to their destinations sooner. The frequent transit network will be easy to use. Customer information, including signage, maps, smartphone apps, and TARC's website will clearly denote routes and stops with frequent service. Getting to and waiting for the bus or making transfers to other routes and modes will be easy, comfortable, and safe. Bus stops will have clear route and trip information, passenger amenities, and walking and biking infrastructure connections. TARC will use technology to improve the customer experience. Real-time information about arrivals, transfers, and vehicle capacity will be provided at stops with many boardings, on the bus, and via smartphone apps. The combination of frequent service with transit-supportive land use is one of the most effective and cost-efficient ways to encourage transit ridership and to reduce greenhouse gas emissions. TARC will emphasize frequent service on arterials and corridors with supportive land uses and connections to major centers, transit hubs, and destinations in the service area.

Characteristics of High-Frequency Transit Routes

1. Routes with service at least every 15 minutes
2. Stops spaced for operational efficiency while considering proximity to transit origins, and 1/4 mile walk distances
3. Fast, reliable service on streets where buses have priority

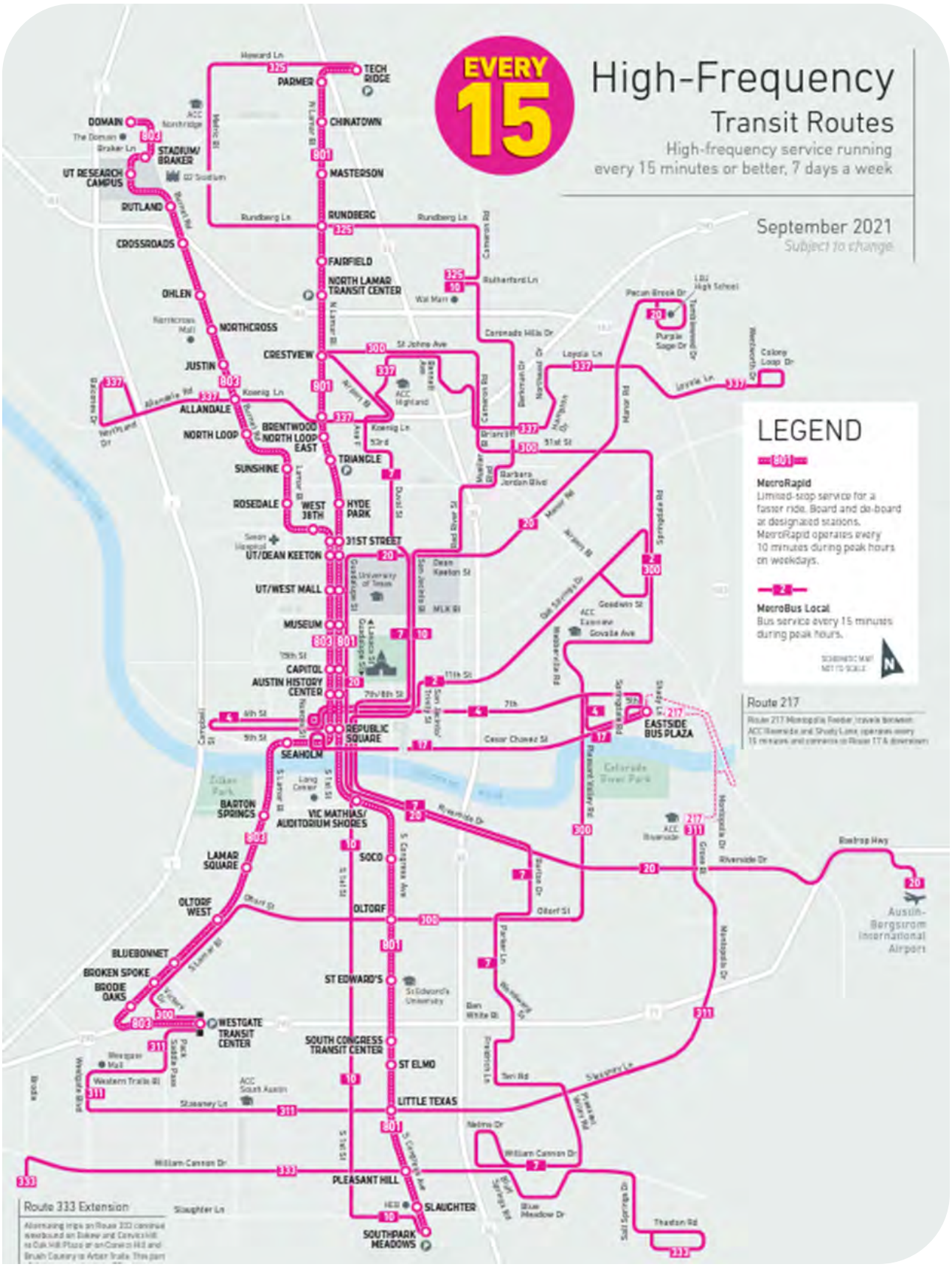


Figure 20: Capital Metro (Austin, Texas) Frequent Transit Network (Source: Capital Metro)

Develop Bus Rapid Transit on the Broadway Corridor and Initiate BRT Planning on Additional Corridors

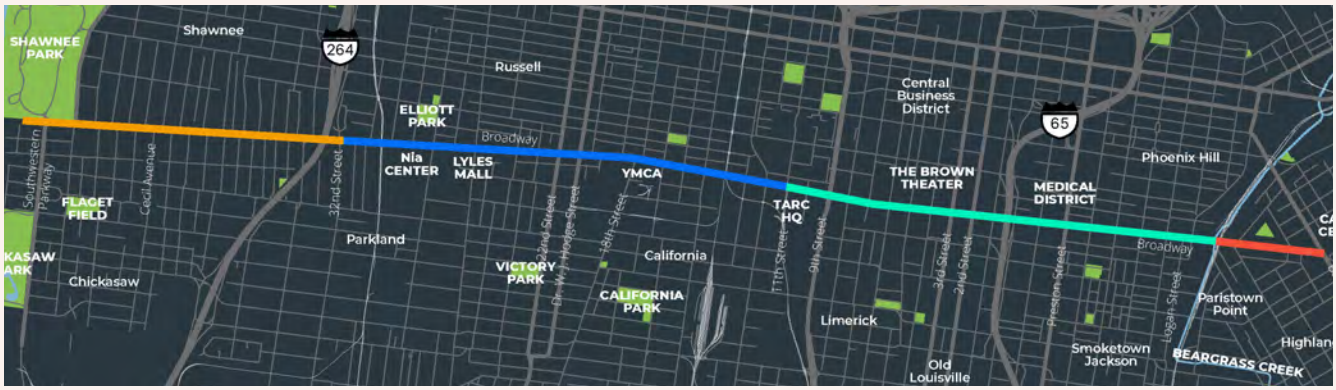
A major opportunity exists for TARC to leverage Metro's ongoing work to develop the Broadway Master Plan. This project creates a very transit-supportive vision for the corridor and contemplates the inclusion of high-capacity transit as a defining feature. Coordinating land use with a comprehensive mobility plan including transit is ideal for many reasons and creates opportunities to both transform the corridor and to demonstrate to the entire region how transit can play a transformative role in building equity and improving quality of life. To advance this effort, TARC should continue to coordinate closely with Metro and also initiate planning work to position the agency for federal funding opportunities, with more information provided in the Our Guide section below.

In addition to the Broadway Corridor, TARC should plan to kick-off additional BRT corridor planning in the near-term. Based on the preceding COA analysis and supporting work, three additional corridors–the Frankfort Avenue-Shelbyville Road Transit Corridor; the Preston Transit Corridor; and the 4th Street Corridor all merit evaluation for their BRT potential. Planning efforts can determine their potential for BRT and prioritize them for development and implementation based on a range of factors including ridership potential, equity, operational feasibility, coordination with Metro and KYTC corridor improvement efforts and other variables.

Broadway All the Way

Broadway All the Way is a transportation planning process meant to develop ideas that address community mobility needs.

A partnership between TARC, The Kentucky Transportation Cabinet, Louisville Downtown Partnership, and Metro Government of Louisville and Jefferson County, Broadway All the Way is a visionary transportation planning process to reimagine the entire corridor from Shawnee Park to Baxter Avenue. This process intends to prioritize personal and traffic safety, transportation, mobility, accessibility and equity. Reshaping the corridor into a sustainable Complete Street with an emphasis on premium transit will create a vibrant public realm that stimulates economic growth, health, wellness, connection to jobs and vital services, and overall quality of life.



Four Segments:

- Southeastern Parkway to 32nd Street
- 32nd Street to 11th Street
- 11th Street to Beargrass Creek
- Beargrass to Baxter

Project Goals

- Connected
- Healthy
- Authentic
- Sustainable
- Equitable

Three Phases

Phase 1

Engage & Analyze
Completed January 2020

Phase 2

Develop Ideas
January–December 2020

Phase 3

Preferred Plan
January–March 2021

For more information, visit *broadwayalltheway.org*.

Conduct High-Capacity Transit System Planning to Identify Regional Rapid Transit Corridor Investment Opportunities

TARC and Louisville advanced well into the development process for light rail in the 2000's, only to have the Federal Transit Administration (FTA) ultimately withdraw support due to a lack of local funding support. While it may be tempting for some to think about what might have been, in reality the only viable path for restarting this effort towards a high-capacity transit system is to reinitiate the planning process, begin with the development of a system plan. The system plan commonly serves as the basis for a voter referendum that, if successful, creates not only a great deal of momentum but also addresses a major early hurdle for entering into the competitive FTA funding category now know as the Capital Investment Grant (CIG) program. The system planning effort also helps build community support and provides up-to-date analysis to support the proposed approach and prioritization of projects and corridors.

Premium transit infrastructure and service is important to the growth of Louisville. Transit investments should align with many potential infill nodes to create opportunities for transit oriented development (TOD). The following routes have been identified as possible Premium Transit (potentially up to Bus Rapid Transit) and a potential Streetcar. Additional studies must be undertaken to determine the feasibility and cost and benefit of these routes.

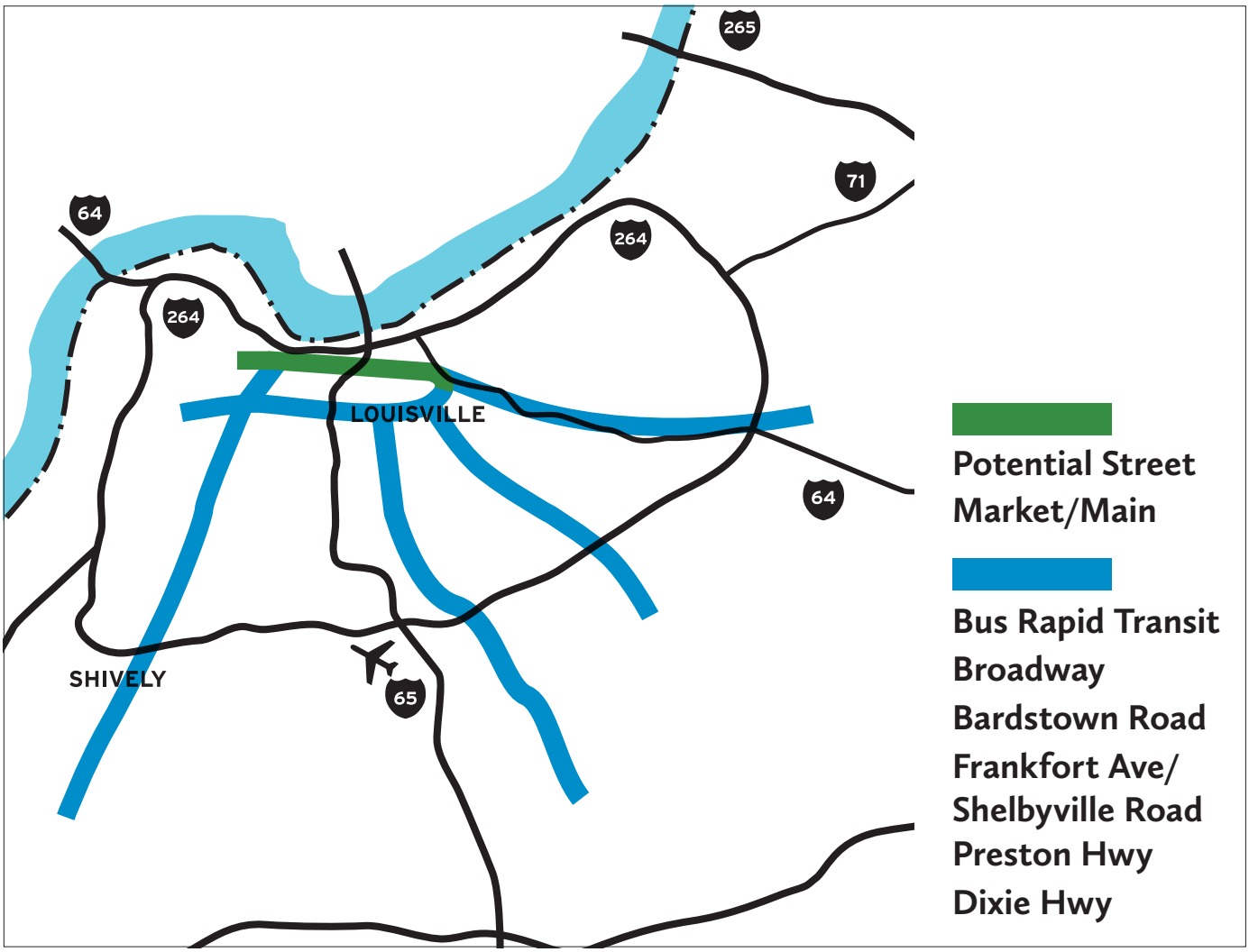
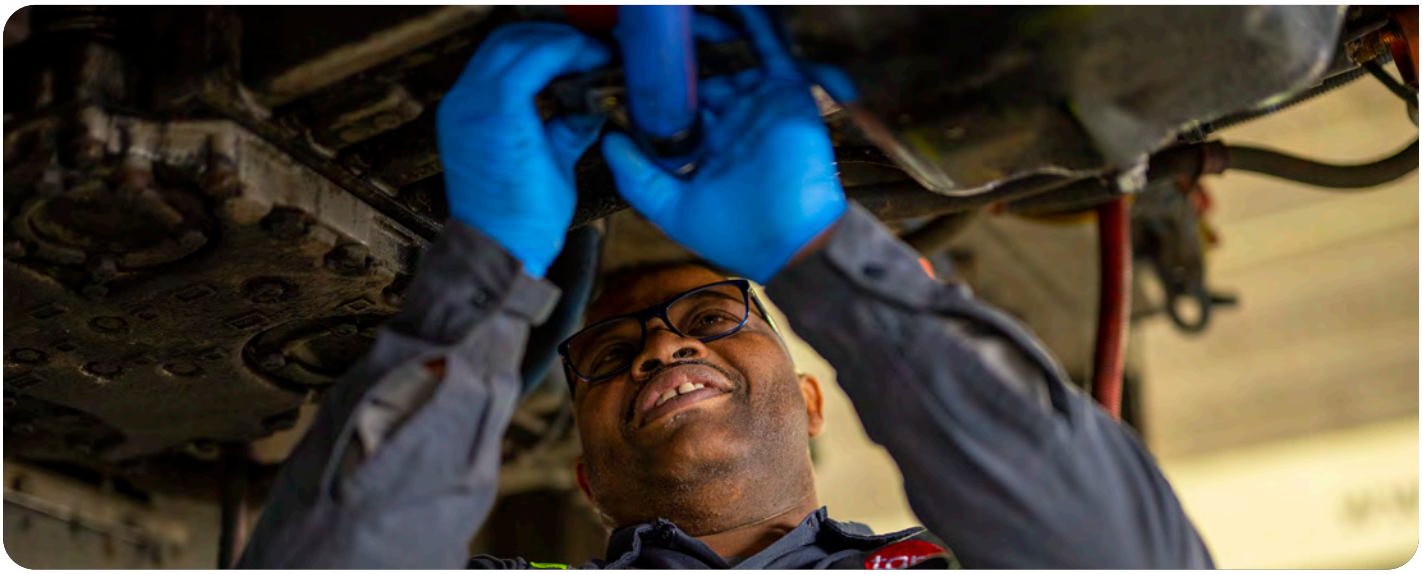


Figure 21: Source: Move Louisville 2016 plan



Upgrade and Expand TARC's Operations and Maintenance Facilities to Support More and Better Service

While there is clearly interest and a strong rationale for TARC to expand service and improve service levels on existing corridors, those initiatives and the existing services all require ongoing operations and maintenance support, including facilities to support the vehicles, bus operators, mechanics and other support and administrative staff. In fact, the FTA in recent years has emphasized 'state of good repair' as both an ongoing requirement and a key factor in assessing transit agencies that are seeking competitive funding. For these reasons, evaluating current conditions and developing a program for upgrading and/or expanding TARC's operations and maintenance facilities is a critical component of TARC Tomorrow.

Use a Customer-Centric and Equitable Approach to Guide Service Decisions

While TARC already has a robust public engagement process and complies with FTA requirements for Title VI and Environmental Justice, opportunities exist to enhance the role of today's customers and the broader community in shaping the mobility services offered. Not only can a deeper and more meaningful level of engagement yield services that are better suited to community needs, it can also facilitate increased trust, confidence and support for TARC and help restore and build the agency's public perception. Going the extra mile to facilitate involvement from Environmental Justice communities and putting ideas into action through service improvements also demonstrates public transportation's role in supporting equity.

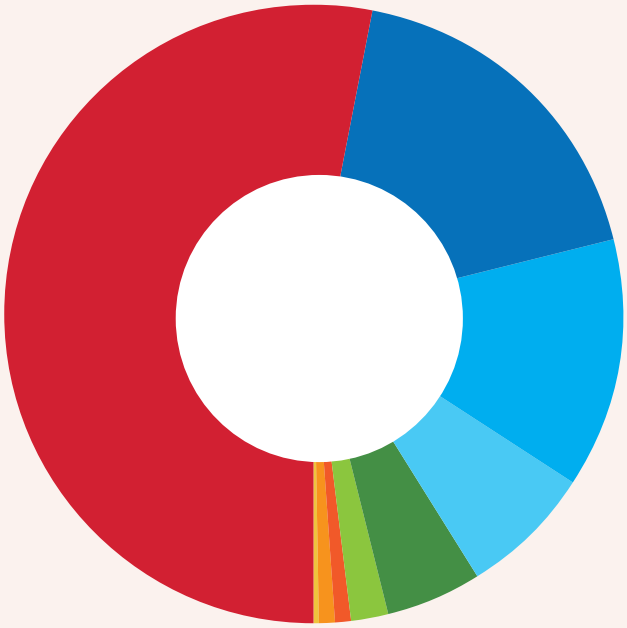
Focus on Regional Collaboration

TARC is the transit system operator for the Greater Louisville region. However, transit is more than just getting people from A to B, it is about connecting the community to opportunities. The Louisville region has several government entities, municipalities, and non-profits that have a vested interested in a robust transit system in order to accomplish their missions. TARC should focus and improve relationships to create equitable and sustainable transit for the future.

Evaluate Feasibility of Interregional Passenger Rail

The Louisville region is located within what is often thought of the 'sweet spot' for interregional passenger rail service. That is, the distances to other large metropolitan areas including Chicago, Cincinnati, Indianapolis, Nashville and Columbus are all between 100 and 300 miles away. At these distances, passenger rail can provide connections that are highly competitive with and in some ways superior to air travel. Passenger rail connections can also support economic development by increasing access to talent and resources and do so in a more environmentally sustainable way than either air or automobile options can offer. TARC should initiate discussions with peer transit systems in these metropolitan areas and other stakeholders to assess the level of interest and viability of developing a plan to advance interregional rail.

Operating Budget by Object Class



Operating Budget by Object Class: Revenue	
MTTF Collections	53%
CRRSAA Funds	18%
Cares Act Funds	13%
Capital Eligible Expense Reimbursement	7%
Farebox	5%
Partnership Fare Sales	2%
State Funds - IN & KIPDA	1%
Advertising	1%
Miscellaneous*	

Figure 22: Operating Budget by Object Class (Source: Ride TARC)

Financial Sustainability and Funding Growth

Few, if any, transit systems in the United States would report sufficient funding to meet their ongoing base costs much less be able to increase service levels to their community's needs. TARC is no exception. While there is always a need and obligation to be efficient and effective with existing funding, TARC simply does not have the financial capacity to sustain itself at current service levels over the timeframe of TARC Tomorrow. Moreover, the agency cannot afford to add new services and facilities to better meet the mobility needs of the community unless and until additional funding sources are secured. Finally, the need is not simply for one-time funding to deploy new projects and programs, but more importantly it is for sustainable revenue streams over time that can sustain the significant operating and maintenance costs that are inherent in the transit industry.

Like transit agencies nationwide, the fiscal impact of COVID-19 has been very challenging for TARC. And again, like other transit agencies, had there not been a large influx of Federal Stimulus Funding over the past several years the agency would have been forced to make major reductions in service and large reductions in staff. Figure 9, from TARC's FY 22 Budget and Annual Report, illustrates that non-recurrent federal funding sources (CARES Act Funds and CRRSAA Funds) constitute 31% of the agency's operating budget.

With the expiration of CARES Act and CRRSAA Funds in the coming fiscal years, and uncertainty remaining about ridership levels returning to pre-COVID levels as well as potential inflationary pressures, the agency's financial position represents a significant challenge. The following goals are structured to help the agency advance TARC Tomorrow through sound financial sustainability and funding growth.

> **"Have a bias towards action –let's see something happen now. You can break that big plan into small steps and take the first step right away."**
>
> **— Indira Gandhi**

Maximize Federal Funding Opportunities

Federal sources, with limited exceptions, cannot be used for ongoing operations and maintenance expenses and must (again with limited exceptions) be matched with local dollars. Nonetheless, there exists a major opportunity for TARC to leverage TARC Tomorrow as a key element in pursuing and obtaining funding through the 2021 Infrastructure Investment and Jobs Act (IIJA). IIJA's passage resulted in historic and unprecedented funding levels for public transportation in the United States of up to $108 billion for a five-year period through 2026. With these funding increases come additional opportunities for TARC to increase its resources for projects and programs as the agency will see a significant increase in formula funding as well as opportunities to compete for substantially larger pots of competitive funds.

The IIJA appropriates $91.2 billion in funding for federal transit programs administered by FTA over a 5-year period from 2022 through 2026.

The IIJA includes major funding increases for the Capital Investment Grant (CIG) program which can fund fixed guideway transit capital expansion and capacity improvement projects, such as bus rapid transit. This funding also increases other transit discretionary grant programs, such as Low or No Emission Vehicles which can help purchase additional electric vehicles for the TARC fleet and the pilot program for TOD planning, which can further the development of premium transit infrastructure.

Develop Transit System Plan and Associated Funding Program for Voter Referendum

As the quote emphasizes, for TARC to be able to deliver transformational mobility in the future, the planning needs to begin now. Given the very apparent mismatch between Louisville's mobility needs and the expected financial capacity of TARC's existing resources over the life of TARC Tomorrow, initiating a major effort to secure additional, recurring and stable funding for the future needs to begin now. Following best practices from transit agencies that have successfully gained new funding in the past several decades, this work can either be built off of TARC Tomorrow and a candid and transparent approach regarding TARC's current and future financial challenges, or it can begin with the development of a focused High-Capacity Transit System Plan (TSP) that fulfills the requirements of the "project development" step in the FTA's Capital Investment Grant (CIG) program process. This step is essential in positioning TARC for CIG funding and results in the selection of what is referred to as a "Locally Preferred Alternative" that is then incorporated into the KIPDA Metropolitan Transportation Plan.

With the former approach, TARC can begin laying the groundwork for a funding increase referendum by broadening and extending the community engagement effort around TARC Tomorrow. This can build the case that more funding is needed to sustain current operations and improve the system for the benefit of the community.

Under the second approach, TARC can initiate development of a TSP that builds upon the COA and TARC Tomorrow work, but with a specific focus on developing a high-capacity transit system. This includes identifying corridors for service and associated service and facility improvements and preparing a financial plan– all with the intent of developing a program of projects that can be presented to voters in a funding referendum.

Either approach requires very thoughtful assessments of current political conditions and an internal capacity analysis to determine if the staff resources and funding exist to undertake a major community engagement and technical analysis effort. Some initial engagement with key stakeholders and community groups to assess the initial viability of a funding initiative also merits strong consideration.

There are many resources available to help support investigations into additional funding, such as the Transit Cooperative Research Program's Financing Capital Investment: A Primer for the Transit Practitioner and the American Public Transportation Association's Center for Transportation Excellence.

Additional funding sources will be necessary to execute all the transportation needs and enhancements that were created in the COA to improve the overall strength of TARC. Cities use several tools to create dedicated revenue streams, taxes and user fees, and there is not a one-size-fits-all approach to transit funding. Many of these tax and user fees depend upon the region's political nature. The following are common ways transit agencies have found success:

- Sales tax is the most common funding source for local and regional transit agencies. This system provides the most significant revenue yield and consistent stability. Typical ranges go anywhere from a quarter to a full penny (0.25-1%) of any qualifying purchase within the transit service area.
- Tax Increment Financing (TIF) uses tax revenues in a specific area to support redevelopment. They capture a future stream of increased taxes that result from an increase in property values due to public investments.
- Transit agencies can receive funding from parking fees and fines that are levied by the city or other regional government. This can also help traffic management and mode shift for the municipality.

In TARC's case, existing state law provides three taxing mechanism to be used to support transit, including: (a) An ad valorem tax levy expressed as a certain maximum number of cents per each one hundred dollars ($100) of assessed valuation, subject to constitutional limits; (b) An occupational license tax; or (c) A sales tax upon all retailers at a rate not to exceed one-half of one percent (0.5%) of the gross receipts of any retailer derived from "retail sales" or "sales at retail". Other tax revenue sources could be collected by another entity, such as Louisville Metro, and used to provide support for improved transit services, but not enacted directly by the agency.

Program Category	5-Year Funding Total
Transit Formula Programs*	
Urbanized Area Formula – Section 5307	$33,541
State of Good Repair Formula – Section 5337	$23,140
Rural Formula – Section 5311	$4,581
Bus and Bus Facilities Formula – Section 5339(a)	$3,161
Elderly/Disabled Formula – Section 5310	$2,193
Fast-Growth State Supplement – Section 5340	$2,056
High-Density State Supplement – Section 5340	$1,823
Planning Programs – Section 5305	$966
Other Programs (FTA administrative and other federal spending)	$1,028
Total Transit Formula Programs	$72,489
Capital Investment Grant Program – Section 5309	
New Start	$4,400
Core Capacity	$1,600
Small Starts	$1,200
Expedited Project Delivery Pilot Program	$800
Additional Authorized CIG Funding (subject to annual appropriation)	$15,000
Total Capital Investment Grant Program	$23,000
Other Discretionary Grant Programs	
Low or No Emission Vehicle Program – Section 5339(c)	$5,625
Bus and Bus Facilities Competitive – Section 5339(b)	$1,966
All Station Accessibility Program	$1,750
Ferry Service for Rural Communities**	$2,000
Electric or Low-Emission Ferry Program**	$500
Pilot Program for Transit Oriented Development Planning – Section 2005(b)	$69
Total Other Discretionary Grant Programs	$11,910
Other Authorized Funding (Subject to Annual Appropriation)	
Washington Metropolitan Area Transit Authority Funding	$750
Total Federal Transit Program	**$108,150**

*Section numbers correspond to the section of Chapter 49 U.S. Code under which each program is codified.
**Half of the funding for Ferry Service for Rural Communities and Electric or Low-Emission Ferry Program is subject to annual appropriation.

Table 6: IIJA Transit Funding (Source: Advisory Services Policy Brief: Infrastructure Investment and Jobs Act — Transit and Passenger Rail Provisions (HDR))

Collaboration

TARC does not operate in a vacuum. It does not control the streets on which its vehicles operate, it does not control the development patterns that it serves, and it cannot shape consumer behavior like automobile manufacturers do with their large marketing budgets. However, TARC can collaborate with both the public and private sector to influence, both directly and indirectly, the ecosystem in which it operates. Time and time again, transit agencies that take steps to build alliances, foster collaborations, and develop partnerships are the ones who now coincidentally enjoy the broadest community support and have the most customers and the strongest ridership. TARC Tomorrow, therefore, highlights Collaboration as a key theme and recommends the following Goals (and corresponding actions) to advance collaborative efforts.

Develop a Transit Priority Speed and Reliability Program with Metro

Transit agencies nationwide face the challenge of operating their transit systems in growing metropolitan areas with increasing traffic congestion. When buses are stuck in traffic it produces three major negative effects:

1. **Average transit travel speeds decrease**–As buses slow due to congestion, operating costs go up as it takes more resources to deliver the same quantity of service. For example, a route that operates with 15-minute frequency on a corridor where it takes 120 minutes to complete a round trip requires eight buses to operate. When that same corridor grows more congested and the round-trip time increases by just five minutes, an additional bus will need to be added to maintain the 15-minute level of service, and if it increases further to 136 minutes, another bus becomes necessary. Not only does this entail a major capital investment, it also carries a substantial and ongoing operational cost.
2. **Customer travel times increase, and service becomes increasingly unreliable**–Slower buses mean it takes longer for TARC customers to get to where they want to go. This makes the service less attractive and useful.
3. **Transit becomes less competitive and fewer people ride**–The compounding effects of congestion ultimately results in fewer riders on the system.

To combat these adverse outcomes, TARC can build on best practices from other transit systems, beginning with collaboration with Louisville Metro to develop a transit speed and reliability program. Identifying the areas with the greatest transit delays, developing solutions to get buses “unstuck”, following that with implementation and measurement, and finally fine-tuning and adjusting the measures can be very effective in achieving the most beneficial outcomes. This approach has proved effective in Seattle, Austin and other areas by improving transit quality without significant adverse impacts to overall traffic.

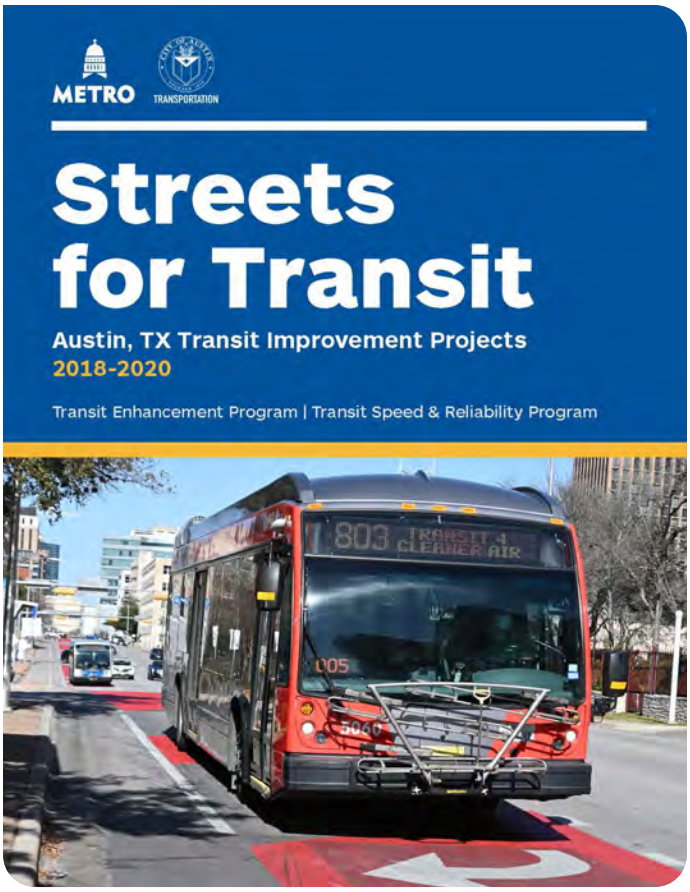


Figure 23: Capital Metro/City of Austin Transit Improvement Partnership (Source: City of Austin Transit)

Coordinate with KIDPA to Develop Approach for Regional Transit

As the region continues to grow, housing and employment centers that could benefit from robust transit access are being developed beyond the TARC service area. KIDPA can play an important role here as collaborator and convener and serves as the conduit for federal transportation funding that may be available to help support regional transit initiatives. While TARC offers limited service across the state line to communities in Indiana including Clarksville, River Ridge, New Albany and Jeffersonville, and as far south as Valley Village in Kentucky, employment centers and housing will continue to be developed in areas beyond the current TARC service area. Such outlying development can be difficult to serve effectively with public transportation, but at the same time, community needs for mobility may well extend into those same areas, creating a policy and financial challenge for the only substantial transit provider in the Louisville region.

For that reason, TARC should examine a range of alternatives for extending the reach of transit while also maintaining a clear focus on cost-effectiveness. This implies that service should be extended, whether through partnership funding programs, service area (and revenue collection area) expansion or other means, only when it can be accomplished in an equitable manner that does not result in any diminution in service to TARC's long-standing customers.

Develop a Transit Bike/Ped Access Program

A common phrase in the transit industry is the statement that "every transit trip begins and ends as a pedestrian trip" and the truism embodied in that statement also points to a need for a collaborative approach to facilitating safe, comfortable and human-scale transit stop access for TARC's customers. While TARC has responsibility for developing and maintaining its transit stops and stations, the transit agency does not control, fund or implement the surrounding pedestrian and bike infrastructure; however, the presence, absence and quality of those elements plays a tremendously important role in how well transit can function. For this reason, putting an increased level of focus and attention on improving transit access has merit. This type of effort can take multiple forms, yet perhaps the most common being what could be termed the "opportunistic" approach consisting of carefully scrutinizing Louisville Metro (and KYTC)'s capital project plans and identifying opportunities to add or upgrade the bike and pedestrian infrastructure elements in proximity to transit stops. The other is to collaboratively develop specific corridor or route segment bike and pedestrian upgrade programs, identify funding and programming requirements and advance them to implementation. While the opportunistic approach has benefits, the programmatic approach should also be used to make strategic improvements on high-transit potential corridors. The programmatic approach also affords the opportunity to create clearly visible demonstrations that stakeholders and the general public can see and experience to understand how such investments can transform the transit experience and contribute to "complete streets" development.

Increase Transit Ridership Through Coordinated Land Use Planning and Quality Development

Too often transit agencies are not invited to the table to be involved in land use and development issues when the decisions that are being made directly affect transit agencies and their ridership. Of course, transit agencies do not have the luxury of making land use decisions, but they can take action to play a more meaningful role in helping to shape transit-supportive outcomes.

Actions to progress in this area include:

- Being at the table during corridor studies
- Engaging at KIPDA in regional planning efforts
- Educating elected officials about the connection between land use decisions and transit
- Developing a guidebook or best practices document for developers about transit-supportive development and communities
- Promoting the successes of their projects and programs involving coordinated transit and land use planning

Equity and Environment

While this transportation advocate's focus is on Seattle, the statement applies to Louisville and TARC just as readily. Transit's role in providing mobility and access to opportunity in a sustainable, low-cost, safe and equitable manner gives it a crucial role in addressing both equity and environment issues in the community.

Develop a Collaborative Approach to Identify Opportunities for Transit to Improve Equity and Provide Access to Opportunity

Taking a deliberative and inclusive approach to equity at TARC can certainly be challenging and even uncomfortable, but it can also go a long way towards building community trust and support for the agency as it moves forward. TARC has and will continue to comply with FTA requirements for Title VI compliance reviews for service changes and fare adjustments and will also continue to conduct Environmental Justice analyses as a part of the service planning process. To build on this positive baseline, TARC should actively identify opportunities to further engage the community and seek out partnership programs (such as youth mentoring, apprenticeships and collaborations with community colleges for workforce training and development). Another means of advancing equity can be through development of geographically focused pilot projects to increase access and provide improved mobility options for historically disenfranchised portions of the service area.

"Public transit lies at the crossroads between climate and equity. An investment in public transit is an investment in a sustainable world, and it's also an investment in communities of color and underserved communities because they ride transit more than anybody else."

— Libero Della Piana, Community Advocate

Benefits of Transit Oriented Development to Our Region

Figure 24: TOD Benefits

Position TARC as an Employer of Choice

TARC, like transit agencies nationwide, has multiple challenges to overcome to hire, develop and retain talented people from bottom to top. The COVID pandemic and related shifts in the job market have made bus operator shortages a national issue, with systems across the country being forced to reduce service levels as a result of inadequate staffing. Compounding matters is the large segment of the transit labor force represented by the Baby Boomer generation- many of whom are now transitioning to retirement. With more options for workers and greater competition, TARC must take steps to position itself as an employer of choice so that it can provide the high quality of transit services that the community needs, including developing enhanced workforce training programs that emphasize recruitment of traditionally underrepresented groups.

Reduce the Environmental Impact of the TARC System

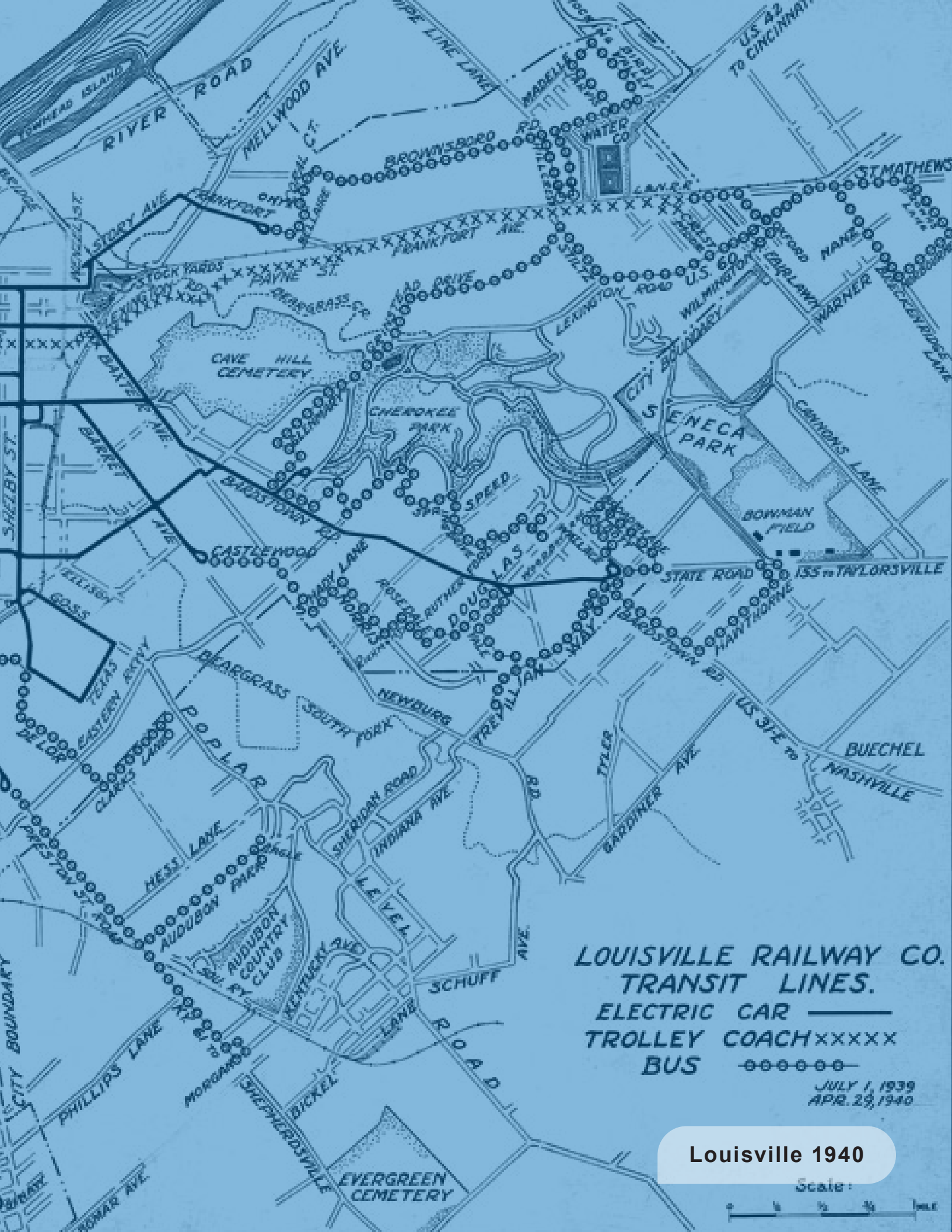
Transit is inherently a green mobility option due to its people-carrying efficiency. In fact, “a full-size diesel-powered bus with as few as seven passengers offers a fuel economy greater than the average car. A fully occupied bus has a fuel efficiency that is six-times greater…than the average single occupancy auto.”

Further, TARC has already made strides by operating 33 hybrid electric and 15 all-electric buses as a part of its 233-bus fleet. With more than 180 diesel-powered buses and a petroleum-fueled paratransit and support vehicle fleet, there remain opportunities for improvement. As one example, TARC can seek opportunities to deploy its low and no-emission fleet on routes serving Environmental Justice areas, an action that supports improved air quality and reduced emissions. Additionally, a comprehensive perspective on reducing the environmental footprint of the agency should be developed, encompassing initiatives such as:

- Energy audits and associated upgrades to existing administrative and operating facilities
- Deployment of solar powered lighting at bus stops and shelters
- Installation of recycling containers at passenger facilities
- Use of LEED design standards for new or upgraded facilities
- Other actions can both significantly reduce the agency’s impact

Taken together, such efforts can demonstrate to the community that TARC is committed to being a responsible steward of public resources.


OHIO RIVER
NEW ALBANY
JEFFERSONVILLE
N
31-W & 150
RUDD AVE.
BANK ST.
PORTLAND AVE.
CANAL
SHIPPING PORT
POWER PLANT
DAM
MUNICIPAL BRIDGE
PARKWAY
SHAWNEE PARK
MARKET ST.
MADISON
WALNUT
CHESTNUT
BROADWAY
GARLAND
GREENWOOD AVE.
DUMESNIL
WOODLAND
SOUTHERN
CHICKASAW PARK
WESTERN PARKWAY
STATE FAIR GROUNDS
CECIL
DUNCAN
GRIFFITH
BLEVIN
MAIN ST.
JEFFERSON
LIBERTY
BRECKENRIDGE
KENTUCKY ST.
OAK ST.
HILL ST.
BURNETT
UNION STATION
PENN. R.R.
L. & N. R.R.
SOU. RY.
HIGHWAY
DIXIE
CATALPA
CYPRESS
ALGONQUIN PKWY.
CITY BOUNDARY
CANE RUN ROAD
BRANDEIS
PRESTON ST.
CLAY ST.
U of L
BALL PARK
FLOYD ST.
ASHLAND
WOODLAWN
WELLINGTON
BLUE GRASS
DOUGLAS PARK
3RD ST. ROAD
7TH ST. ROAD
HIGHWAY 31-W
DIXIE HIGHWAY
T.C.R.R.
SCHOOL
TAYLOR BLVD.
CENTRAL
CHURCHILL DOWNS
WINKLER
MONTANA
BERRY BLVD.
ST. HELENS
CRUMS LANE
KENWOOD
OPEN AIR THEATRE
IROQUOIS PARK
PARK AVE.
ADAIR
WENTWORTH
PARK BOULEVARD
CRITTENDEN DRIVE
L. & N. R.R.
ASHLAND
5TH ST.
6TH ST.
MAIN ST.


LOUISVILLE RAILWAY CO.
TRANSIT LINES.
ELECTRIC CAR
TROLLEY COACH
BUS
JULY 1, 1939
APR. 29, 1940
RIVER ROAD
MELLWOOD AVE
BROWNSBORO RD
FRANKFORT AVE
STORY AVE
CAVE HILL CEMETERY
CHEROKEE PARK
SENECA PARK
BOWMAN FIELD
STATE ROAD 155 to TAYLORSVILLE
CASTLEWOOD
BARRET AVE
SHELBY ST.
BEARGRASS
NEWBURG
POPLAR
PRESTON ST. ROAD
AUDUBON PARK
AUDUBON COUNTRY CLUB
SCHUFF
ROAD
EVERGREEN CEMETERY
PHILLIPS LANE
BUECHEL
NASHVILLE
US 31-E to
US 42 TO CINCINNATI
Louisville 1940
Scale:

tarc Tomorrow

Our Guide

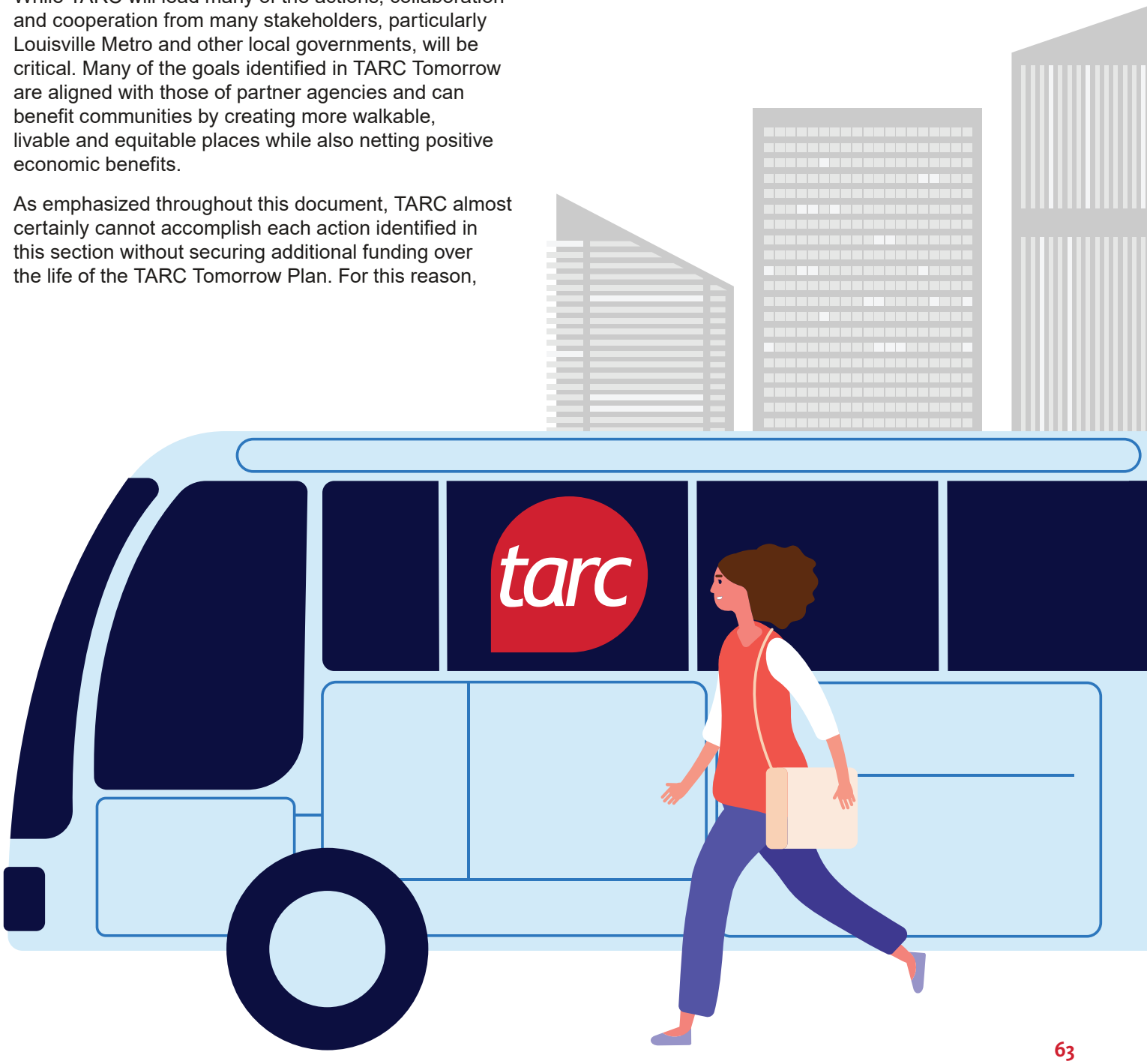
The third section of TARC Tomorrow, Our Guide, divides each of the six theme goals into a matrix of actions, timeframes, and responsibilities, so our customers, stakeholders, and the public can understand how and what we need to do to achieve those goals.

Attaining the Vision

While TARC will lead many of the actions, collaboration and cooperation from many stakeholders, particularly Louisville Metro and other local governments, will be critical. Many of the goals identified in TARC Tomorrow are aligned with those of partner agencies and can benefit communities by creating more walkable, livable and equitable places while also netting positive economic benefits.

As emphasized throughout this document, TARC almost certainly cannot accomplish each action identified in this section without securing additional funding over the life of the TARC Tomorrow Plan. For this reason, implementation will be premised on close coordination with the agency's budget and capital program to ensure that the TARC system is maintained in state of good repair and that service and expansion programs and projects are aligned.

The following pages highlight the goals, actions, timeframes, and responsibilities for the six themes of the Transit System Plan.



■ Task Period ● Lead ◐ Co-Lead ○ Support

TARC Tomorrow Goals and Objectives: Rider Experience

What	When				Who – Collaborators					How/ Estimated Financial Impact	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Modify Services to Better Meet Community Needs											
Begin Implementing the Comprehensive Operations Plan by 2023	■	■			●	○				LOW	MED
Downtown Routing Optimization		■									
Optimize TARC 3 paratransit performance to improve service delivery and minimize operating costs		■			●					MED	MED
Goal: Improve Transit Travel Times and Increase Service Reliability											
Conduct a 'hot spot' study to develop prioritized list of locations with recurring delays and identify actions to address		■	■		●	◐	○	○		LOW	POSITIVE
Upgrade Automatic Passenger Counter systems to meet or exceed FTA minimum threshold of reliability (75%)	■	■			●					LOW	
Partner with Metro to establish a Transit Speed and Reliability Program with annual funding and staffing commitment			■		●	◐				LOW	LOW
Goal: Develop a Comprehensive Bus Stop Improvement Program											
Update bus stop inventory and assess stops for upgrades and consolidations; seek funding sources		■			●	○	○			MED	NONE
Identify pilot projects to test bus stop enhancements from solar lighting to real time bus arrival displays to secure bike storage systems to level boarding platforms		■			●	◐				LOW	LOW
Goal: Upgrade the Fare Payment Experience for Customers and Reduce Barriers to Entry for New Customers											
Conduct a fare system evaluation and develop a fare improvement program that features an account-based payment system with smart fare and mobile pay options		■			●					LOW	NONE
Fund, procure and implement a new fare system with 'future proofing'			■							HIGH	LOW
Identify and implement fare equity strategies, including fare-capping			■		●					LOW	LOW
Pilot all-door boarding on at least one route and develop approach to deploy systemwide		■			●					LOW	POSITIVE
Goal: Support Rider Safety at TARC Passenger Facilities and Onboard TARC Vehicles											
Examine transit industry best practices including use of wireless cameras with real-time transmittal capabilities	■	■			●	○				MED	MED

*Goals in red and bold are considered Transformational Projects

TARC Tomorrow Goals and Objectives: Mobility and Innovation

What	When				Who – Collaborators					How	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Leverage Technology and On-Demand Services to Improve Service Coverage and Access											
Deploy initial pilot Mobility On Demand (MOD) Zones	■	■	■		●					LOW	NEUTRAL
Expand MOD Zones based on demand analysis			■		●					MED	VARIES
Goal: Enhance and Expand Employer Shuttle Partnership Program											
Identify partnership opportunities and develop employer shuttle projects for first/last mile connections		■			●				◑	LOW	LOW

TARC Tomorrow Goals and Objectives: Equity and Environment

What	When				Who – Collaborators					How	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Develop a Collaborative Approach to Identify Opportunities for Transit to Improve Equity and Provide Access to Opportunity											
Engage with Louisville Metro and other partners to assess how TARC can help address the "9th Street Divide" and support the recent RAISE grant-funded initiatives.		■			●	◑			○	LOW	VARIES
Goal: Position TARC as an Employer of Choice											
Develop an inclusive Workforce Training/Development program	■	■			●				○	MED	POSITIVE
Goal: Reduce the Environmental Impact of the TARC System											
Create a Zero Emissions Fleet Transition Plan by 2023	■	■			●					LOW	VARIES
APTA's Sustainability Commitment Program and achieve Gold Level by 2028	■	■	■	■	●					LOW	VARIES

TARC Tomorrow Goals and Objectives continue on next page

■ Task Period ● Lead ◐ Co-Lead ○ Support

TARC Tomorrow Goals and Objectives: Service and Expansion

What	When				Who – Collaborators					How	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Define and Develop Frequent Route Network											
Begin development of Frequent Route Network based on COA and additional analysis	■				●					LOW	NONE
Implement Phase I of Frequent Route Network		■			●					HIGH	HIGH
Implement Phase II of Frequent Route Network			■		●					HIGH	HIGH
Goal: Develop Premium Transit Corridors to Enhance Service Quality											
Leverage ongoing Broadway Corridor Study to initiate Project Development for BRT service	■				●	◐	○			HIGH	HIGH
Pursue FTA CIG funding for Broadway BRT		■			●	◐	○			MED	HIGH
Initiate planning work for Premium Transit Service development on Frankfort Avenue-Shelbyville Road Transit Corridor		■			●	◐	○	◐		MED	HIGH
Initiate planning work for Premium Transit Service development on Preston Corridor by 2025		■			●	◐	○	◐		MED	HIGH
Evaluate additional corridors for Premium Transit Service development			■	■	●	◐	○			MED	HIGH
Goal: Conduct Transit Investment Study to Support Regional Rapid Transit Corridor Program Development											
Initiate a Transit System Investment Study to select corridors and identify revenue sources to advance Regional Rapid Transit (BRT, LRT and advanced transit) corridors		■			●	◐	○	○		MED	NONE
Based on Transit Investment Study results, initiate next steps to secure funding support and advance projects to design and implementation		■	■	■	●	◐	○	○		MED	NONE
Goal: Upgrade and Expand TARC's Operations and Maintenance Facilities to Support More and Better Service											
Develop a Facilities Master Plan to support strategic investments and funding identification		■	■	■	●					HIGH	VARIES
Goal: Use a Customer-Centric and Equitable Approach to Guide Service Decisions											
Update Service Design Guidelines	■	■			●					LOW	LOW
Goal: Define and Advance TARC Mobility Hub Program											
Assess potential sites for pilot Mobility Hub development and develop guidelines for their development		■			●	○	○		○	LOW	NONE
Seek partnerships and funding to develop at least one Mobility Hub by 2025		■			●	○	○	○	○	LOW	LOW
Develop additional Mobility Hubs in key locations			■	■	●	○	◐	○	○	LOW	LOW
Goal: Evaluate the Viability of Interregional Passenger Rail											
Initiate discussions with peer transit systems and other stakeholders to develop an interregional passenger rail analysis		■	■		●	○	◐	○	○	LOW	LOW

*Goals in red and bold are considered Transformational Projects

TARC Tomorrow Goals and Objectives: Financial Sustainability and Funding Growth

What	When				Who – Collaborators					How	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Maximize Federal Funding Opportunities											
Include a "federal alignment" assessment for all capital projects in the annual budgeting process.		■			◐					LOW	POSITIVE
Develop and implement an ongoing program to elicit transit awareness and support among local, state and federal elected officials.		■			◐	○	○	○		LOW	POSITIVE
Goal: Develop Transit System Plan and Associated Funding Program for Voter Referendum											
Identify priority corridor projects and funding programs in coordination with Council Members or other elected officials as appropriate		■			◐	○	○	○	○	MED	HIGH

TARC Tomorrow Goals and Objectives: Collaboration

What	When				Who – Collaborators					How	
Goals and Actions	Ongoing	Short-Term	Mid-Term	Long-Term	TARC	Metro	KIDPA	KYTC	Private Partners	One time	Ongoing
Goal: Develop a Transit Priority Treatment Program											
Partner with Metro to establish a transit speed and reliability program with annual funding and staffing commitment		■			◐	○	○	○		LOW	POSITIVE
Goal: Coordinate with KIDPA to develop approach for regional transit services											
Develop regional transit study proposal and seek KIPDA/KYTC funding		■			◑	○	◐	◑		LOW	NONE
Implement pilot services under new "Beyond Service Area" program via partnership agreement		■			◐		○	○		MED	LOW
Goal: Develop a Transit Bike/Ped Access Program											
Conduct a stop access evaluation to determine locations with deficient or non-existent sidewalks and coordinate with local / state govt's to implement		■			◑	◐	○	○		MED	LOW
Goal: Increase transit ridership through coordinated land use planning and quality development											
Engage in Metro Land Development Code update process to coordinate with transit planning		■			◑	◐	○	○	○	LOW	POSITIVE
Coordinate with Metro to identify and incentivize TOD along priority transit corridors		■			◑	◐	○	○	○	LOW	POSITIVE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Financial Overview

Current Status

Financial constraints are perhaps the largest threat to the success of TARC Tomorrow. TARC's FY22 Annual Report highlighted limited revenues as an ongoing issue.

While TARC is in a generally stable near-term financial position thanks to infusions of non-recurring funds through the 2020-2021 federal COVID relief packages and a sizeable one-time award from the Volkswagen emissions settlement, the agency currently has negligible resources to expand service and in fact faces substantial shortfalls in its operating budget in coming years. Major service levels and staffing reductions will be required without sustained funding to replace these non-recurring infusions.

TARC must also expand its financial capacity for longer-term capital improvements. Suppose the region is to seize the opportunity to increase the quality, frequency, and coverage area of transit service as is called for in TARC Tomorrow: In that case, the agency must find ways to increase its capital expenditures today to reap the benefits tomorrow.

In addition to continuing to pursue discretionary awards for future capital projects, the agency must also engage with the community to impress upon them the need for increased and sustained operational funding. TARC Tomorrow will need the support of the full region to garner the political will to make these ongoing financial commitments.

"As our regional economy continues to expand—with employment opportunities and housing options covering a multi county, bi-state traveler and commuter workshed—TARC acknowledges that high quality public transportation is not consistently or conveniently available to the full region. The ability for TARC to deliver this level of service is directly related to the amount of revenues received and quite simply the pace of growth geographically has not led to a commensurate rate [of] increase in revenue. Coupled with the growth of costs for paratransit service, maintenance, health insurance, and pensions, TARC has not had the luxury of resources to expand service to keep up with the pace of regional development."

— TARC Fiscal Year 2022 Budget and Annual Report, "Outlook"

Funding Sources & Expenses

Although recent years have presented funding challenges to many transit agencies in terms of declining ridership and sales tax revenues, TARC is in some ways fortunate that these funding sources represent only a portion of its budget.

Historically, TARC's funding has come from various federal, state/regional, and local sources, with only a small percentage coming from direct farebox recovery. Similarly, while Louisville Metro's Mass Transit Trust Fund (MTTF) covers approximately 60% of TARC's overall budget, the MTTF is not funded by regional sales taxes. The MTTF is instead funded through the Jefferson County Occupational License Tax, a 0.2% tax on all income earned within the county, making it less susceptible to swings in purchasing demand or purchasing power due to changing economic conditions.

TARC's largest and most consistent source of revenue derives from a 1974 referendum that secured a dedicated local funding source for TARC based on a share of the Occupational License Fee. The next largest source of local funds comes from the farebox or from sales of fare media or pass programs. TARC also receives funds from the State of Indiana and/or the Commonwealth of Kentucky. TARC also generates revenues from advertising. Finally, TARC receives both formula and competitive federal funds.

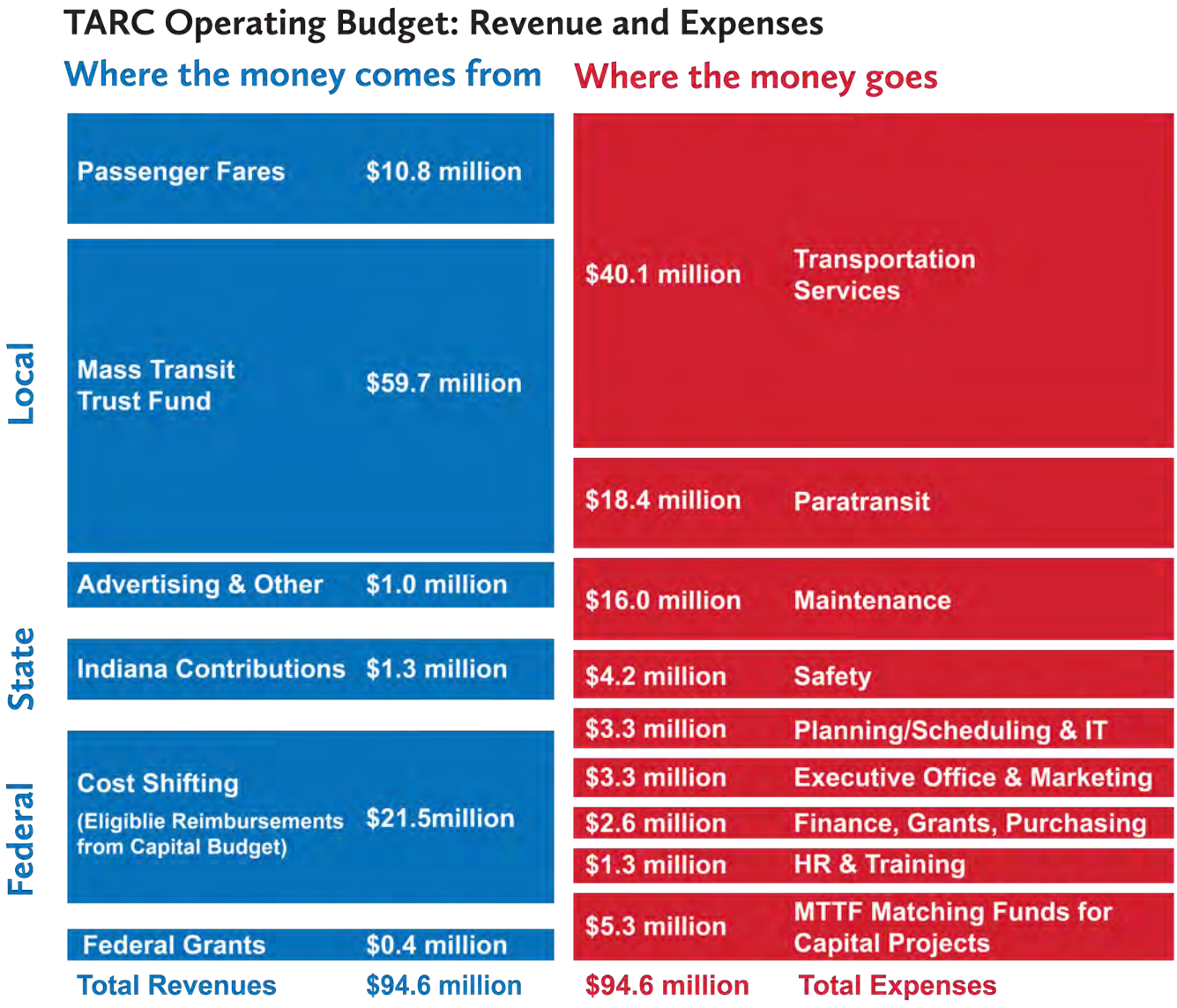
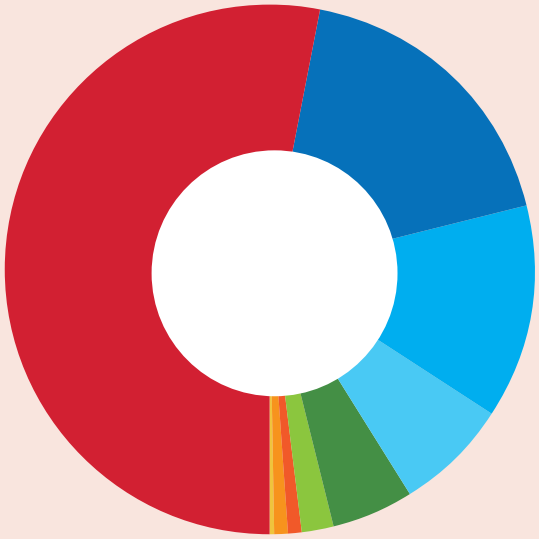


Figure 25: TARC Operations

Operating Budget Revenue

- **MTTF collections** represent the largest share of TARC's revenue, at 53% of the Operating Budget.
- Certain operational expenses are eligible for funding through the **Capital Budget** (7%) through federal Urbanized Area Formula Grants and CMAQ funding.
- **Non-recurring federal funding sources** through the CARES Act and CRRSAA cover a further 31% of the Operating Budget, presenting a substantial risk to both the future operations and capital budgets should an equivalent federal funding source not be offered in future years since this shortfall would require that additional funds be diverted away from the capital budget.
- **Farebox Recovery** (5%) and **Partnership Fares** (2%) are the next largest revenue sources, with **state funds** and **advertising revenue** (1% each) rounding out the Operating Budget.

Operating Budget by Object Class: Revenue



Operating Budget by Object Class: Revenue	
MTTF Collections	53%
CRRSAA Funds	18%
Cares Act Funds	13%
Capital Eligible Expense Reimbursement	7%
Farebox	5%
Partnership Fare Sales	2%
State Funds - IN & KIPDA	1%
Advertising	1%
Miscellaneous*	

Figure 26: TARC Operating Budget by Object Class: Revenue

Financial Risks and Challenges

In addition to financial constraints in the near to mid-term, there are considerable risks and uncertainties in long-range forecasting. The economy and sales tax receipts represent the largest single influence and risk on the viability of a financial plan. Other risk areas include:

- **Capital Costs –** changes in cost projections can have an impact on the timing of capital improvements
- **Operating Expense Growth –** Since running transit services day in and day out over time consumes the majority of TARC's budget, changes in the cost-of service can have significant impacts on service levels and the timing of service enhancements
- **Inflation –** increases in inflation can adversely impact both capital and operating costs while having the positive impact of increased local revenue.
- **Federal Funding –** While the INFRA bill provides record levels of transit funding, annual appropriations for some of the funding categories is still subject to Congressional budgeting each year, and changes in trendline federal formula and discretionary funding levels can influence the timeframes identified for capital and operating improvements
- **Fiscal Cliff –** As previously referenced, relying on one-time federal funding to support ongoing operating costs poses a significant challenge for TARC as those funds are exhausted by 2024.

Financial Capacity Analysis

The actions and investments called for in TARC Tomorrow require committed funding, both on the operations side for expanded service and in the capital budget for new infrastructure and vehicles. However, TARC's financial capacity barely covers its operating and capital budget at current service levels. Looking into the future, the agency faces significant revenue shortfalls versus the growth in expenses due to inflation, rising fuel prices, and the like.

Like many agencies, TARC relies on some federally-allocated capital dollars to cover shortfalls in its operating budget, thanks to federal policies that designate certain operational costs as eligible for reimbursement from capital funds. As this shortfall grows and without supplementary funding, TARC will have to redirect more funding away from the capital budget to fund operations. This situation will become particularly dire in Fiscal Year 2025 when the non-recurring COVID relief packages (CARES and CRRSA) expire, unless another federal funding stream is created to fill that gap.

As the region looks ahead to TARC Tomorrow, identifying additional funding sources must be the #1 priority to ensure the continued solvency of the agency and to provide it with the financial capacity to invest in the capital projects and growing operational costs that come with expanded, enhanced, high-quality transit service.

TARC Funding Relative to Comparable Transit Systems

Created in 1851, the Louisville Metro Revenue Commission is a municipal corporation founded by the Kentucky General Assembly as the bond servicing agent for the City of Louisville's general obligation debt. Its most important function is to collect occupational license fees on behalf of the Louisville Metro Government, the Jefferson County Board of Education, the Anchorage KY Board of Education, and the TARC.

The peer cities in Table 7 were selected based on the COA and their similarity to the TARC region and service levels.

These peers are in similar geographic relation to one another, and experience similar issues with the lack of state funding. However, TARC does leverage farebox recovery and local funding. TARC should focus its efforts on increasing state resources in addition to local funding because much of the operating revenue is derived from the occupational fee taxed to Jefferson County employees.

Peer Agency Comparison

Transit Agency	Population MSA	Service Area	Passenger Miles	Operating Budget	2020 Local Funding Source		2020 State Funding
	2020	2020	2020	2020	Tax/Fee	Farebox	
TARC	**1,262,287**	**357**	**39,128,540**	**$89,257,305**	**62.8%**	**12.4%**	**2.2%**
Jacksonville Transportation Authority	1,223,991	1,531	47,170,343	$118,604,188	62.6%	9.4%	2.6%
Indianapolis and Marion Co. Public Transportation	928,281	396	27,912,187	$105,476,083	33.9%	6.5%	10.5%
Greater Dayton Regional Transit Authority	559,062	274	42,143,407	$68,396,691	10.1%	10.9%	3.6%
Southwest Ohio Regional Transit Authority	774,901	289	41,989,581	$100,068,134	34.9%	16.0%	2.7%
Central Ohio Transit Authority	1,180,185	336	42,092,671	$185,759,519	40.1%	32.7%	0.0%

Table 7: Peer Agency Funding Shares

Working Together: Implementation Guide and Measurement Approach

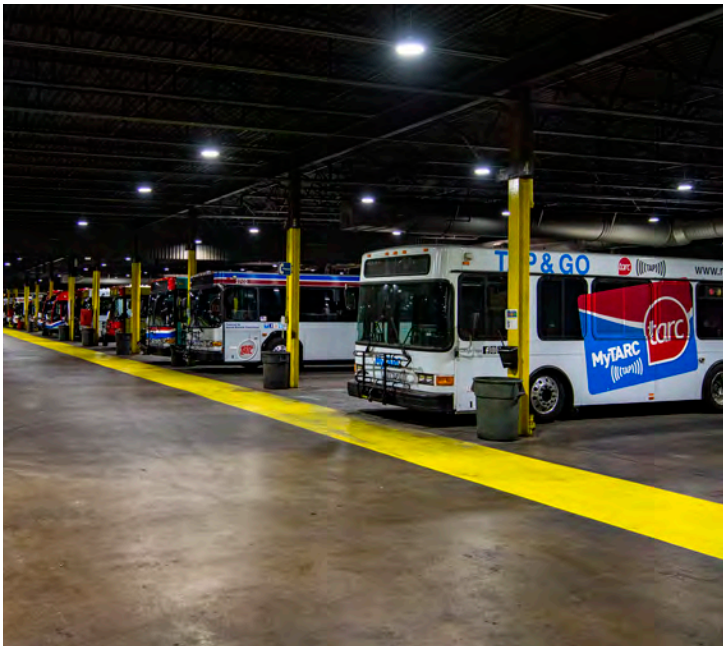
The development of a long range plan like TARC Tomorrow, and the process and engagement that occurs during that development can serve as an important catalyst for lasting change. However, as the quote above makes clear, the real "secret sauce" is in the implementation. Implementation is not a quick nor easy process, however, but one that takes commitment, leadership, focus and perseverance. For that reason, the following recommendations provide a framework to support effective implementation of TARC Tomorrow. Five approaches are recommended to advance the plan, each explained in more detail below.

Establish Action Teams

Most of the Goals and Actions identified in TARC Tomorrow do not reside neatly or efficiently in any one department within the agency, and a number of them extend beyond the agency itself to other jurisdictions, community organizations and business interests within the Louisville area. Due to their multi-departmental and multi-disciplinary nature, an effective approach to managing them can be to form cross-discipline and even cross-agency Action Teams with a clear charter, support from senior management and an appropriate level of empowerment to be able to take on their project and move it forward. While too many teams can be overwhelming, the agency can see significant benefit by establishing a small group of teams for the highest priority projects and programs that TARC wants to advance. Creating a framework within which these teams operate, e.g. by setting up monthly or bi-monthly reporting processes with senior management, will be critical to the success of these teams. Other elements could include establishing an internal structure which identifies key positions such as a team lead (ideally someone with project management experience) and creating standardized processes and procedures for things like agendas, meeting notes, project schedules, reporting, etc. such that each team is using a similar approach as all the others can also be tremendously helpful. In sum, empowered teams can make the difference between initiatives moving forward to implementation or staying in the development phase.

Keep TARC Tomorrow at the Center of Decision Making

Another area where transit agencies can face challenges in advancing their long range plans is when they aren't 'front and center' during budget development or when preparing items for board consideration. While this can happen for perfectly understandable reasons, those agencies that have been most effective at implementing their plans refer to them regularly, discuss their status at the executive level and agency-wide regularly, and work closely with their Board to maintain focus by providing periodic status updates.



"It's important to have a sound idea, but the really important thing is the implementation."

— Wilbur Ross

Annual Progress Reporting

Stakeholders, whether the Board of Directors, agency partners, the business community, advocacy organizations or the general public, all want to see tangible evidence that TARC is making progress and improving its value to the community. One of the best ways to demonstrate this is by producing an annual progress report for TARC Tomorrow that succinctly tracks progress within each Theme and on each Goal. Dashboards and other visually appealing graphics can be used to show progress, and the report can be printed as well as posted on the agency website. As one example, the Charlotte region uses a website for their Connect Beyond regional mobility initiative with information on all of the actions ultimately included in their plan. Two other elements are needed to make progress tracking and reporting function effectively- first is the assignment of a clearly defined lead within the agency that is responsible for this function; and second is to have that person (or team) develop and implement performance measures for each goal that can be used to determine if meaningful progress is being made and to define success. One example of performance measurement is shown in the graphic below from King County Metro in the Seattle metropolitan area:

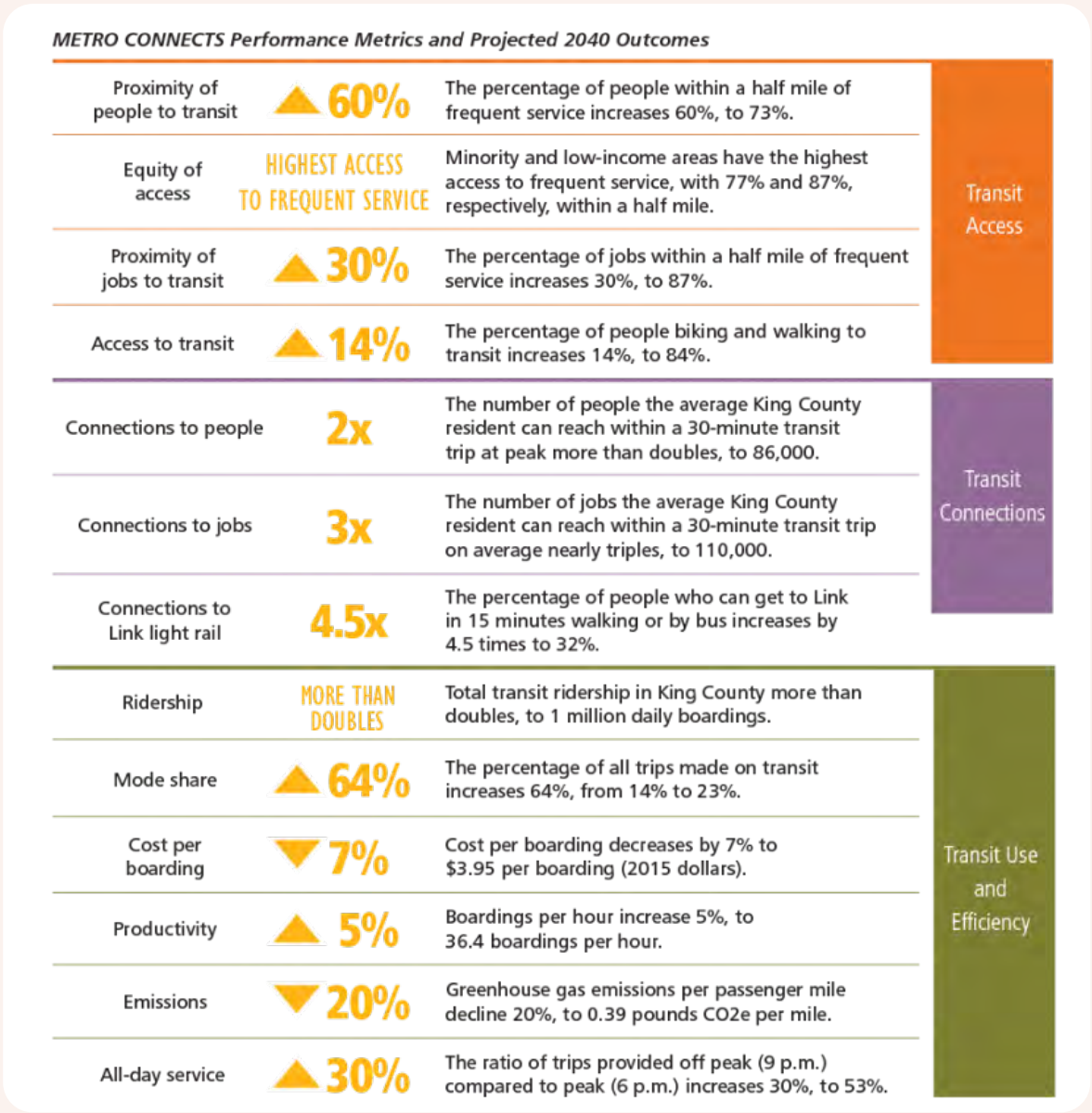


Figure 27: Example of Annual Progress Reporting (Source: King County, WA)

Partner Engagement

TARC's history shows that the agency does not operate in a vacuum. Public and private sector decisions and actions regarding TARC and where it operates directly impact the ability of TARC to provide valuable, useful and effective mobility services. Whether it be through decisions affecting the right-of-way, through changes to zoning and land use controls that support (or go against) transit-supportive development patterns, through location decisions by public or private developers and institutions that facilitate (or make near impossible) the use of public transportation to access jobs, education, healthcare and more, TARC's partners in the Louisville community make a major impact on the role and utility of public transportation each day. For this reason, effective and ongoing partnerships are essential to success. Cultivating partnerships is one of the most critical elements for TARC Tomorrow to move the agency forward. Fortunately, TARC already enjoys and benefits from productive partnerships with many public and private entities, but more must be done to advance those partnerships further in support of transit and ultimately for the quality of life in Louisville.

Louisville Metro, in particular, stands out as the key partner that understands the essential role that an effective transit system plays in support of improved mobility and quality of life in Louisville. As the entity that regulates land use and controls the public right-of-way across the majority of TARC's service area, Louisville Metro 's partnership and support is central to helping transit become a major contributor to mobility and access. For these reasons, TARC should build upon existing relationships and increase its efforts to develop and sustain collaboration in support of improved transit operations, enhanced access between transit stops and nearby origins and destinations for cyclists and pedestrians, and initiate zoning changes and other actions to support and incentivize more transit-supportive development patterns. Fortunately, Louisville Metro is already working towards these approaches through the Broadway All The Way corridor study and other efforts.

Best Practice Example

Capital Metro operates in the greater Austin, Texas area, well known as one of the most congested urban environments in the country. After identifying a systemwide trend of declining average operating speed, staff at the agency developed compelling data analytics to demonstrate these adverse impacts clearly and succinctly to City of Austin leadership. They developed communication strategies, identified best practices and potential solutions and initiated dialogue with counterparts at the Austin Transportation Department to take action.

Through this coordinated effort, the team identified transit 'hot spots' (where significant delays were occurring), assessed a range of potential transit priority treatments, and developed comprehensive implementation plans to improve transit service quality. Dedicated staff and ongoing funding were committed by both agencies to address the challenge, and a number of these projects have been implemented with the benefits quantified, including travel time savings of 10% and greater on key routes, to demonstrate their effectiveness, and the project is now an ongoing successful program.

Travel is as much as...

20% Faster

with most lines saving

1-5 Minutes per trip

Customer Satisfaction is high

Service is more reliable

Community Engagement

TARC and the project team relied on input from various groups to develop TARC Tomorrow. Beginning in August 2021, TARC and the team worked to identify stakeholders and members of the community that could provide feedback to the programs, projects and initiatives that could address the needs of the city. TARC will continue to engage the city as it completes the desired work to implement TARC Tomorrow.

Steering Committee

The Steering Committee's purpose was codified in the Charter at the October 2021 meeting:

- Advise the Long Range Plan project team
- Review information from the LRP Project Team and Community Advisory Committee to consider and approve milestone-level project deliverables
- Consider and recommend to the LRP project team adjustments to priorities if relevant conditions change to ensure alignment with business requirements and key communities of interest
- Identify, monitor, and help mitigate related risks or threats
- Monitor and review LRP project progress at regular meetings and relay information to and from organizations represented
- Facilitate effective communication and cooperation among all affected groups and programs for the LRP to support the fulfillment of the TARC's mission and LRP goals

The Steering Committee is composed of 16 members, representing an array of interests and partnerships with TARC:

- Bullitt County
- City of New Albany
- Greater Louisville, Inc. (GLI)
- Indiana Department of Transportation (INDOT)
- Kentuckiana Regional Planning & Development Agency (KIPDA)
- Kentucky Transportation Cabinet (KYTC)
- Louisville Metro Housing Authority
- Louisville Metro Office of Planning and Design Services
- Louisville Forward
- Metro Council
- Oldham County
- State Highway Department
- University of Louisville Department of Urban and Public Affairs

The Steering Committee was convened three times during the creation of TARC Tomorrow.

Meeting One: Tuesday, October 12, 2021

In the first meeting, held Tuesday, October 12, 2021, the committee was asked to envision the plan's success, review the charter, and discuss the potential members of the Community Advisory Committee. This meeting was held at the TARC offices and online via Zoom. Three key items were addressed at this meeting, with participants entering responses via the chat function.

- Activity One: envisioning the success of TARC's long-range plan
- Activity Two: review of the Steering Committee Charter
- Activity Three: suggestions for the Community Advisory Committee

In the first activity, The Steering Committee was asked to imagine the success of the plan with the prompt, "Imagine yourself in 2025: Looking back on this plan, how will you know it was successful?"

Increased ridership was the most common response to the question. Some of the ways to accomplish this include:

- Linking workers to employment
- Providing affordable housing near transit
- Increasing housing density near transit lines and stops
- Fully funding TARC
- Establishing a route structure that has adapted to modern trends and realities
- Expansion of BRT lines.

The Steering committee next reviewed the charter and provided feedback to the team. The committee was encouraged to review the document and provide feedback via email.

The final portion of the meeting focused on providing feedback on the Community Advisory Committee, providing additional team members to cover as many aspects of the larger community as possible.

Meeting Two: Tuesday, March 29, 2022

During meeting two, the Steering Committee was provided with an update on the progress of the plan, a summary of the November Community Advisory Committee meeting, and two opportunities for input: reviewing the SWOT Analysis and creating a list of transformational projects, programs, and initiatives. While discussing the SWOT analysis, the committee encouraged the team to think about the future of autonomous vehicles, mobility hubs, and transit as a system that includes Uber/Lyft and scooters.

The topic of land use was approached; the city needs to have a conversation about land use patterns that can support transit and the means to change policies to encourage these conversations.

Lastly, the group discussed functionality for the average user. Many have expressed frustration with making transfers to other buses, long circuitous routes, and a lack of clarity in the labeling of bus routes and directions of routes.

Figure 28: SWOT Analysis Graphic

Community Advisory Committee

The Community Advisory Committee (CAC) was formed to provide the larger community's feedback and make recommendations on the plan. The CAC comprises an assortment of community organizations, local employers, and representatives from the disabled community. The Community Advisory Committee met in person and via zoom for each meeting.

Groups Represented:

- Americana Center
- California Neighborhood
- Center for Neighborhoods
- Humana
- Jefferson County Public Schools
- Kentuckiana Works
- Louisville Urban League
- One Southern Indiana
- Riverport Business Association
- Simmons College
- Smoketown Neighborhood
- Southwest Dream Team
- TARC 3 Ridership
- TARC Advisory Council
- UPS

Roles and responsibilities of the CAC include:

- Evaluation of the recommendations generated during the development of the plan
- Interaction and communication with the project team and TARC Board members
- Make recommendations regarding local transit plans, capital improvements, and service changes
- Provide insight regarding transit customer experience and stakeholder opinions and needs

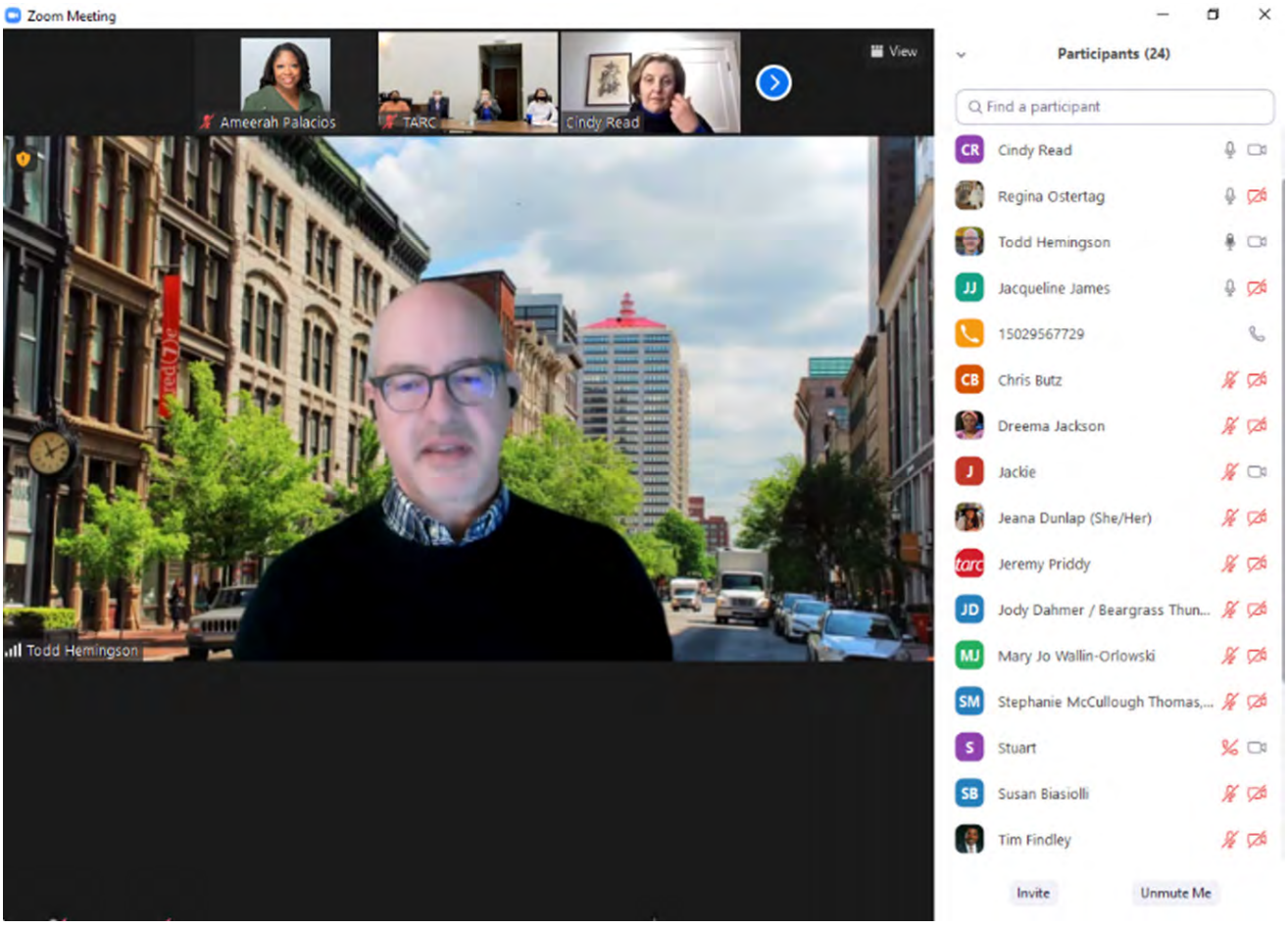


Figure 29: Image From a Community Advisory Committee Meeting

Meeting One: Tuesday, December 7, 2021

Approximately 30 participants attended the first CAC meeting in December 2021, in person at TARC headquarters or on online via Zoom. Participants were asked to weigh in on three questions by entering their comments in the Zoom chat window, or verbally once recognized by facilitators.

Question One: What is the ideal role for TARC in meeting Louisville's future mobility needs?

- Participants discussed workforce development, serving areas with fewer opportunities, or changing the focus to the areas where it can serve the greatest number of people (the urban core).
- Improving operations in the urban core would also provide improved service to tourists. Others suggested that TARC become involved with developers and partner agencies to encourage transit in housing development.
- The group discussed the concept of transit hubs around the city where transfers from one bus to another could take place. This idea is complementary to identifying locations for transit hubs and Park-and-Ride locations.

Question Two: What are the top two goals that TARC should aim to achieve as a result of the Long Range Plan?

- Many in the group were concerned that TARC's future success is at odds with the development patterns of Louisville.
- Sprawling, suburban development is a challenge to an efficient, frequent transit system.
- Parking needs in some areas combined with ample parking in others does a disservice to transit–land use is a key component to the success of TARC.
- There were not two specific comments that could be considered top goals for the group.

Question Three: What is the most important thing that TARC could do over the next five years to grow ridership?

Responses to this question can be grouped into three categories:

- Amenities
  - Wi-Fi on buses and at bus stops
  - Transit passes that work with smartphones, the app-based fare system
  - Integration with other modes such as scooters, Uber/Lyft and bicycle loan programs such as LouVelo
  - User incentives
  - Consideration of improvements that are equitable
- Land use
  - More transit hubs to eliminate the need to go downtown for transfers
  - Utilize city-owned parking or other locations for transfer points.
- Service
  - Increased direct service lines, particularly in tourist heavy areas
  - Frequency in a gridded network – consider consolidating redundant routes

Meeting Two: March 1, 2022

The second Community Advisory Committee meeting included 22 participants in the conversation, which focused on providing feedback on the SWOT analysis performed by the design team. This meeting was held online via Zoom and in the TARC board room.

Using the Mentimeter tool (menti.com), the Community Advisory Committee identified neighborhood assets that could benefit from re-assessing TARC routes. A neighborhood asset is defined as places, spaces, businesses, and institutions that serve as a support, resource, or source of strength to oneself and others in the community. Comments include:

- Affordable housing/ area apartment complexes/ public housing
- Arterial streets and parkways
- Business Parks/ employment centers
- Childcare facilities
- Colleges/ education opportunities
- Community centers/ senior centers
- Grocery stores/connections to and from food deserts
- Parks and recreation areas
- Shopping centers

The second question from the meeting asked for the group to prioritize four strengths:

- Job Coverage
- Good Street Network/Bones
- Partner Agency Support
- Climate/Sustainability

The third question from the meeting asked for the group to prioritize four weaknesses:

- Suboptimal Route Planning
- Decreasing Ridership
- Inadequate Funding
- Auto-Oriented Development Patterns
- Population Coverage Below Peer Agencies

The fourth question from the meeting asked for the group to prioritize four opportunities:

- Pursue Funding for Enhanced Service and Coverage
- Restore Community Perception
- Enhance Collaboration and Innovation
- Establish TARC as an Equity Leader

Internal Stakeholder Meetings

The TARC team hosted several internal stakeholder meetings to have a better understanding of the issues faced by each group. Each meeting began with introductions, a statement of the purpose of the long range plan, an anticipated timeline for the work, and an overview of the SWOT analysis. Following the presentation, each group discussed what was missing from the analysis.

Department	Meeting Date
Maintenance Department	January 31, 2022
Transportation Department	February 1, 2022
Diversity and Inclusion	February 2, 2022
Grants Department	February 1, 2022
IT Department	February 21, 2022

Table 8: Department Meeting Dates

Some of the issues and concerns discussed during the one-on-one meetings:

- Maintenance department is dealing with issues of not enough qualified technicians on staff. The mechanics they currently employ are experienced with diesel engines; these mechanics could be re-trained to be able to work on electric vehicles.
- Maintenance expressed that in order to adapt to future needs, they would need to start from scratch. Doing otherwise would be a waste of money.
- The Transportation Department would like to see the incorporation of microtransit in TARC Tomorrow.
- TARC is struggling with workforce issues–there are not enough drivers; they are down approximately 50 drivers from the budgeted number.
  - The part-time employees cannot work more than 25 hours per week, which does not help with the need for more drivers. There are opportunities to utilize part-time employees better if they were more readily available.
  - Overtime has been high, which impacts the budget.
- The IT Department described that there are some budgetary issues that might be addressed by cutting expenses, rather than increasing funding.

Help Shape the Plan Work Session

On Tuesday, May 17, 2022, the design team engaged with a group of TARC employees representing an array of departments, to review a preview of elements of TARC Tomorrow and provide feedback. This hybrid meeting was held in-person at TARC headquarters and via Zoom. Participants weighed in on four questions using Mentimeter and in-person discussion.

Question 1: Where do you see TARC in the next five to ten years?

Question 2: What project or initiative can TARC undertake in the next year or sooner to make an immediate impact in terms of rebuilding ridership?

- Fare Free
- Community Engagement
- Beat Car Travel Times
- Broadway Corridor Plan

Question 3: What do you believe are the community's expectations of TARC today and in the future?

- Tarc 3 Service
- Be Innovative
- Provide Reliable and Affordable Service
- Timely Service

Question 4: What is one major project or program that you would like to see TARC advance in the next five years?

- Light Rail
- System Wide Equity Plan
- Broadway BRT
- Cashless Payment Option

Future Engagement

A number of engagement strategies were utilized to promote the findings, projects and initiatives recommended by TARC Tomorrow.

Online Survey

- During summer 2022 a digital survey was deployed to further understand public sentiment and priorities for projects and initiatives recommended by the long range plan
- Results were scheduled to be shared shortly after the Mobility Summit in October 2022

Mobility Summit

- A TARC Tomorrow mobility summit to bring visibility to the long range plan is scheduled to be held on September 15, 2022
- The summit included an address by the executive director Carrie Butler and invited community partners, media and the general public to engage in stations themed after the important tenets of the TARC Tomorrow Long Range Plan:
  - Rider Experience
  - Mobility & Innovation
  - Service & Expansion
  - Financial Sustainability & Funding Growth
  - Equity & Environment
- Each station was staffed by a TARC and CAC/ Steering Committee member

Ad Hoc Community Meetings

With an equitable focus on neighborhood groups and other nonprofit, community-oriented organizations that support TARC riders, various ad hoc meetings were held to share TARC Tomorrow, answer questions and create open dialogue about the plan's priorities, initiatives and projects.

tarc Tomorrow

Summary

TARC has challenges and opportunities in each of the six theme areas that support TARC Tomorrow:

- Rider Experience
- Mobility and Innovation
- Service and Expansion
- Financial Sustainability and Funding Growth
- Equity and Environment
- Collaboration

The Our Guide section of this plan provides a diverse range of actions that TARC can take over the life of the plan and each requires a concerted effort, leadership and focus. With such an effort, TARC can position itself to become an indispensable mobility leader for the Louisville region. Primary actions should include:

Funding

Before TARC can make substantive progress on implementing TARC Tomorrow, it must move to deal with both the near and longer term financial challenges that it faces. In the near term, TARC must address the pending 'Fiscal Cliff' when federal COVID-19 related funds are exhausted in 2024. In the longer term, TARC must begin laying the groundwork for additional, ongoing and sustainable revenue sources going forward to provide the critical funding needed to move TARC towards its vision, mission and goals. This is an all-encompassing effort that includes community, stakeholder and elected official engagement, research, and finding the right way to 'tell the story' of TARC in a compelling way so as to create a basis and justification for what is likely to be a voter referendum at some point in the near future.

Continued Stakeholder Engagement

In addition to taking on the 'elephant in the room' of TARC's funding challenges, the agency should take steps in the near term to generate additional awareness, input and support for this TARC Tomorrow Plan. That includes a broad and inclusive engagement effort designed to reach the full spectrum of community members and stakeholders in the Louisville region and, as appropriate, plan refinements based on input received.

Internal Organization to Advance TARC Tomorrow

As has been stressed throughout this document, TARC Tomorrow, like any similar plan, is only as useful and relevant as the agency decides it should be. Making a concerted effort, from the Board of Directors through to the entire agency, to both raise and maintain awareness of the plan is an essential ingredient for success.

Identify and Execute 'Early Win' Projects

TARC should systematically review the actions identified in Our Guide and identify several that can be advanced to implementation within the first six months to one year of plan approval. With a focused effort, these should be managed and monitored carefully to help create a precedent for action, and once complete, TARC should use a variety of communication methods to show stakeholders and the community that TARC Tomorrow is achieving meaningful progress.

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Appendix

Progress!

A. TARC Tomorrow Review of Studies, Plans, and Policies

B. TARC Tomorrow SWOT Analysis Paper

C. TARC Tomorrow Transit Employee of the Future

D. TARC Tomorrow Industry Trends

E. TARC Tomorrow Investment and Funding Strategies

2040 Long Range Transportation Plan

TARC Tomorrow

Long Range Plan 2040

Summary of Review of Studies, Plans and Policies

January 2022

tarc Tomorrow

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Introduction

The project team reviewed relevant large-scale transit and mobility plans, studies, and policies completed in the region in the last ten years which will help inform the TARC Long Range Plan (LRP). This summary builds upon the Summary of Prior Studies completed for the Comprehensive Operations Analysis (COA), which was completed in early 2021. Plans and studies that were reviewed for the COA are listed below:

- Louisville Transportation Tomorrow Light Rail Project
- TARC Long Range Plan
- Oldham County Comprehensive Plan
- KIPDA 2035 Metropolitan Transportation Plan
- Bullitt County Comprehensive Plan
- Dixie Corridor BRT Plan
- Move Louisville: 2035 Transportation Plan
- Floyd County Comprehensive Plan
- KIPDA Downtown Mobility Study
- TARC's Transit Asset Management Plan
- Jefferson County Comprehensive Plan
- Clark County Comprehensive Plan

This memo highlights key findings from previous studies, summarizes relevant research, and underscores any pertinent technical analyses, public/stakeholder input, and recommendations. Plans and studies that have been published since the COA summary and will be reviewed in this document are:

- Louisville Metro Department of Economic Growth and Innovation
  - "Vision Louisville Phase 1" (2012)
  - "Vision Louisville Phase 2" (2013)
- Louisville Metro Government
  - Comprehensive Plan, "Plan 2040" (2019)
  - "Current Multi-Modal Planning Efforts"
  - "Move Louisville Projects Update" (2021)
- Kentuckiana Regional Planning & Development Agency (KIPDA)
  - "Connecting Kentuckian 2040 Metropolitan Transportation Plan, MTP" (2020)
  - "FY 2020-2025 Transportation Improvement Program, TIP" (2020)

Summary of Findings Related to the TARC Long Range Plan

The review produced the following highlights:

- Louisville is experiencing population growth and subsequent increases in traffic. A robust transit plan can help manage growth and help achieve social, equity, economic, and environmental benefits for the community.
- There is ample opportunity to provide improved transit services in the metro area with new and sustainable funding sources.
- Transit improvements must be developed concurrently with intelligent land-use policies (transit-oriented development, pedestrian and bicycle guideways, parks, etc.).
- Improved transit service will require strong financial, capital, and operational support from local and regional partners.
- Current and completed planning efforts for transit projects are a good start, but more improvements must be made to provide a reliable, efficient, and attractive public transportation network.

Summary of Previous Studies, Plans and Policies

Louisville Metro Government

The following plans were produced by the Louisville Metro Government and its respective departments:

"Vision Louisville Phase 1" (2012)

This report, although nearly ten years old, made it clear that public transportation options must be employed to alleviate challenges that arise from increased traffic and population.

It details different transit options, such as Light Rail and Bus Rapid Transit (BRT) and asks whether Louisville could sustain a robust public transportation system.

- **Transit must help mitigate traffic challenges**
- **Can Louisville sustain a robust transit system?**
- **Transit must consider growth, connectivity, and high frequency coverage**

For mass transit to succeed in Louisville, the city needs to provide a transportation network that considers the growing population, connects different modes, and has broad site coverage at high frequencies.

> *Mass transportation needs to be reliable, multifaceted, and pervasive to support the necessary scale and expanse of the city. The agenda: Put people first; pedestrians, cycling and mass transit before cars. This vision and change can start small and grow into a new paradigm for the city. With a progressive and scalable strategy, change is almost imperceptible, until it becomes the norm.*

"Vision Louisville Phase 2" (2013)

The second phase of the Vision Louisville report suggests that Louisville is set to experience significant population growth, distinct from previous decades. For the region to sustain and benefit from this growth, it must provide efficient transit services.

If Louisville takes proper action in accommodating this growth, the report expects new intermodal transport hubs and regional transit connections. It calls for better, more reliable transit that passes near parks and concurrently serves bicycle and pedestrian traffic.

- **Population growth will require efficient transit service**
- **Intermodal transport hubs may decrease automobile dependency**

The report asks the question, "Can the modal split in Louisville evolve?" It proposes six new, inter-modal exchange hubs that would improve connectivity in the city. This proposal hopes to decrease car traffic by 20 percent (from 90 to 70 percent), with 30 percent of traffic consisting of public transportation, bicycles, or pedestrians. Solutions for this decrease in automobile dependency include Park and Rides, "quick connect" bus routes or an eventual light rail system, bike-share programs, and high-capacity transportation systems like Bus Rapid Transit (BRT).

"Plan 2040: A Comprehensive Plan for Louisville Metro" (2019)

"Plan 2040" aligns with the goals of Move Louisville, which include investing in the transportation network, promoting freight movement, and enhancing access to the Louisville International Airport. "Plan 2040" also aligns with promoting nodal density, encouraging transit-oriented development, and reinforcing strategies that encourage "complete streets."

The mobility element of the plan presents three main goals:

1. **Implement an accessible, system of alternative transportation modes.**
2. **Plan, build and maintain a safe, accessible, and efficient transportation system.**
3. **Encourage land use and transportation patterns that connect Louisville Metro and support future growth.**

Goal 1: policies that are directly related to public transportation are below:

- Encourage existing and future high-density residential, commercial, and employment centers to support transit-oriented development, plan for new transit centers by incentivizing transit-oriented development, and ensure new developments support public transportation and transit amenities following the Transit Design Standards Manual.
- Complete a comprehensive operational analysis (COA completed in 2021) and encourage alternative forms of transit such as BRT or light rail. This section also describes the existing plan to create a Bus Rapid Transit corridor along Dixie Highway and its associated benefits

Goal 2: policies that are directly related to public transportation are below:

- Develop a Complete Streets Design Manual for consideration during the development and redevelopment of roads to include transit facilities and operations.

Goal 3: policies that are directly related to public transportation are below:

- Encourage a mixture of compatible land uses that are easily accessible by bicycle, car, transit, pedestrians, and people with disabilities, evaluate developments for their ability to promote public transit and pedestrian use, i.e., higher density mixed-use developments, and evaluate developments for their impact on the transportation network.

- Require developers to dedicate rights-of-way for street, transit corridors, bikeway, and walkway facilities. Provide street improvements and/or transit solutions to mitigate the impacts of development and re-development. Review and update the Land Development Code to make it consistent with changes to transit measures. Identify infill development

- **Sustainable and equitable transportation improvements will elevate the quality of life for Louisville residents**
- **Rightsizing streets would improve pedestrian, transit passenger, and driver safety**

opportunities to support biking, walking, and transit service. Encourage the use of, and provide incentives to incorporate, transportation demand management by new development and redevelopment such as transit promotion and user fare subsidy

Current Multi-Modal Planning Efforts

"Broadway Master Plan – Broadway All the Way:"

The Broadway Master Plan proposes sustainable improvements that include "safer and more efficient transportation, as well as environmental improvements that will help raise the quality of life for residents and businesses all along the corridor."[1]

The plan hopes to provide a more-equitable corridor that serves buses, cyclists, and pedestrians, as well as cars, safely and equally. The plan also champions improvements to service frequency and reliability to the existing Broadway transit service.

Street Rightsizing and Two-Way Street Conversions:

These two planning efforts attempt to improve existing roadways by either decreasing the number of lanes, repurposing existing lanes, or converting one-way streets to two-way streets, which would all improve pedestrian and driver safety, as well as improve reliability and safety for transit passengers.

[1] http://broadwayalltheway.org/

Move Louisville Projects Update (2021)

The table below describes each transit project in the 20-year Move Louisville transportation plan and provides an update on the projects as of February 2021.

Table 1 | Projects from the Move Louisville Transportation Plan

Project	Description	Benefits	Status
East/West Transit Corridor	• Cross-town transit route connecting Dixie Highway to Westport Road • Two major routes are proposed, one just inside the Watterson Expressway and one just inside the Snyder Freeway.	• Enhanced crosstown transit routes to better connect residents to jobs	Routes will be evaluated as part of TARC's Comprehensive Operations Analysis which was started in 2019 and is ongoing, despite delays due to COVID-19.
Transforming Dixie Highway Bus Rapid Transit (BRT)	• Improvements to Dixie Highway including a Bus Rapid Transit line, Sidewalk enhancements, landscaping, and traffic signal upgrades	• Creation of a safer, more efficient, and economically successful multimodal corridor	Construction complete. The new BRT line began operations in early 2020.
Broadway Complete Street Bus Rapid Transit (BRT)	Complete street retrofit of Broadway from Shawnee Park to Baxter Avenue to accommodate Premium Transit Service along with bicycle and pedestrian safety and mobility improvements.	• Increased transit frequency, reliability, and efficiency • Transit user experience improvements • Enhanced bicycle and pedestrian infrastructure to improve safety, mobility, and access to high capacity transit services	Broadway All the Way (Broadway Master Plan) is currently underway. The consulting firm has developed preliminary concepts that are being vetted through community engagement. Project should be finalized in Spring 2021.
Preston Corridor Premium Transit	• Introduction of Bus Rapid Transit (BRT) or Premium Transit, pedestrian, and streetscape enhancements.	• Provide enhanced transit service and better connect residents to jobs.	A master planning process for Preston Highway, that will include analysis for premium transit, will begin in 2021.

KIPDA

The following plans were produced by the Kentuckiana Regional Planning & Development Agency:

"Connecting Kentuckiana 2040 Metropolitan Transportation Plan, MTP" (2020)

The MTP calls for improvements in public transit connectivity to identified Community Access Clusters such as high-density employment, residential, and retail areas, commerce centers, and education. By 2040, the agency appeals for the following milestones to be met:

- Increase by 20 percent the amount of land area within identified clusters of community access, high-density employment, high-density medical, high-density shopping, high-density housing, and schools served by public transit.
- Increase the number of occupied spaces in Park and Ride Lots by 40 percent by 2040.
- Increase the number of park and ride lots with dedicated bicycle access by 10 percent.
- Increase the number of park and ride lots with pedestrian access by 20 percent.

The plan also calls for increased availability and efficiency of person-based multimodal options and proposes the following goals:

- Increase system-wide transit ridership by 20 percent by 2040.
- Reduce by 20 percent the identified gaps in pedestrian walkways along functionally classified roadways by 2040.
- Reduce by 20 percent the identified gaps in bikeways along functionally classified corridors by 2040.

New transportation projects should:

- **Improve connectivity by developing transit service in/near Community Access Clusters**
- **Improve multimodal options such as pedestrian walkways and bikeways in conjunction with transit development**

Transportation Improvement Program (TIP) FY 2020-2025

Projects and programs in the Transit Improvements Program are intended to enhance the operation of public transit and to contribute to maintaining, and when possible increasing, its utilization. Examples of Transit Improvements include, but are not limited to:

- Bus stop improvements
- On-board transit amenities
- Facility improvements
- Bicycle and pedestrian facilities that improve non-motorized access to transit
- Park and ride facilities
- Transit education and awareness programs
- Rolling stock purchases, updates, and modifications

For projects and programs to be considered for the Transit Improvements Program, the projects and programs:

- **Must contribute to enhancing the operation of public transit and contribute to maintaining, and when possible, increasing its utilization**
- **May not have a total project cost in excess of $1,000,000**
- **Must contribute to meeting KIPDA Performance Targets**
- **May not be considered regionally significant as defined in 23 CFR 450.104**
- **Must be categorized as an Air Quality Exempt project as defined in 40 CFR 93.126 and 93.127**

The TIP details the funding options for public transportation, how projects should be listed in the Transit Program of Projects (POP), and all transit-related projects currently on the TIP.

Next Steps

The project team will reference the summarized plans and studies from this report to complete the Long Range Plan.

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SWOT Analysis

January 31, 2022

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Introduction

As a building block of the TARC Tomorrow Long Range Plan, this SWOT analysis identifies and documents the Strengths, Weaknesses, Opportunities, and Threats that are real and measurable, both in today's context and in the medium and long term. It addresses TARC's role and performance in the broader community, with an emphasis on economic development, workforce development, and mobility frameworks.

It is important to state that while terms like "weaknesses" and "threats" can carry a negative connotation, the purpose here, and of SWOT analyses generally, is not to dwell upon negatives. Instead, it is to be forthright in identifying issues so that they can be addressed. All transit agencies have faced challenges over the past decade with ridership, funding, and other concerns, and the COVID-19 pandemic has magnified these issues. TARC is not immune to these shared challenges. TARC has had internal management misconduct and public image impairment on top of the broader challenges faced by transit as an industry. Articulating these challenges can help bring focus to them and provide a pathway for taking the actions necessary to mitigate and overcome them moving forward.

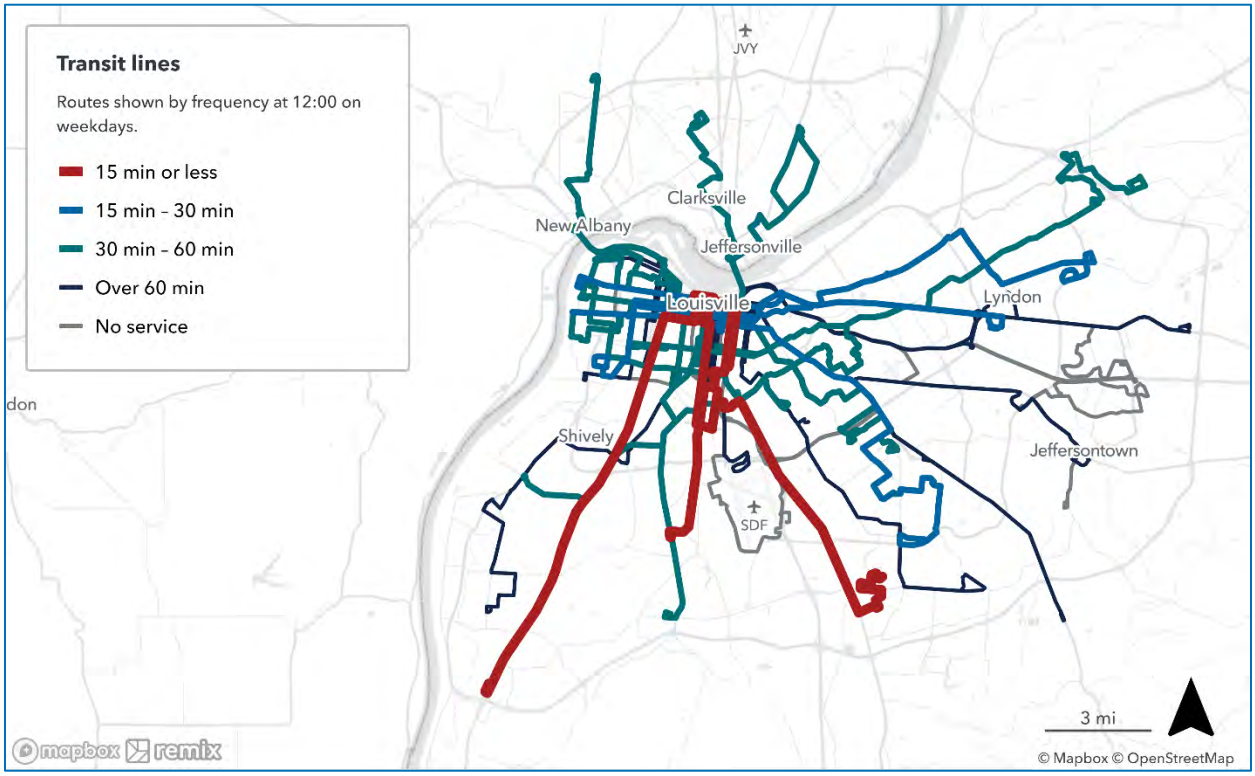
To help level-set this analysis, four peer cities were selected to provide context for Louisville's performance: Sacramento, Milwaukee, Louisville, Detroit, and Memphis. Their Service Area Populations can be seen in Table 1. Figure 1 shows TARC's existing service coverage and frequency.

Table 1. Peer Cities and Service Area Populations (2019)

City	Service Area Population (2019) [1]
Sacramento, CA	1,056,979
Milwaukee, WI	948,201
Louisville, KY	806,893
Detroit, MI	713,777
Memphis, TN	708,275

[1] FTA – NTD Transit Agency Profiles, 2021 (https://www7.fta.dot.gov/ntd/transit-agency-profiles)

Figure 1. TARC Existing Service Frequency and Coverage



Strengths

Job Coverage

TARC reaches nearly 50 percent of jobs within the Metropolitan Statistical Area.

Based on data from the U.S. Bureau of Labor Statistics[2] and Remix software, Louisville compares favorably to peer cities, where 47 percent of jobs in the Metropolitan Statistical Area (MSA) are served within 0.25 miles of transit service (see Table 2). Should the System Vision Concept (Concept 3) from the 2021 Comprehensive Operations Analysis (COA) be implemented, the percentage of jobs served by TARC would increase to 57 percent, making it the highest of its peer cities. As discussed further in the "Threats" section, locational decisions by employers in the future, particularly those that continue a trend of placing job centers in outlying areas, may have a negative effect on this factor in the future.

Table 2. Percent of Jobs within 0.25 Miles of Transit Stops

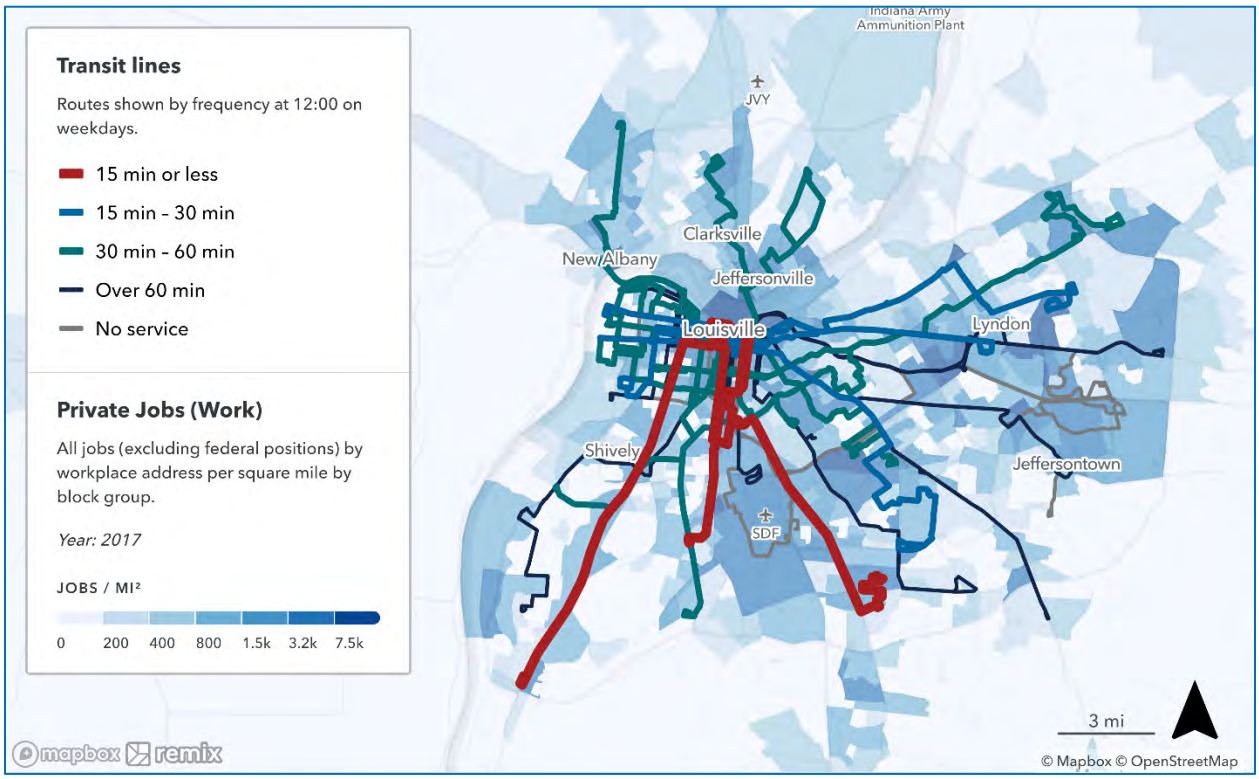
City	Service Area Population (2019) [3]	Jobs Served by Transit (2017)	Jobs in MSA (2017)	Percent of Jobs Served by Transit
Milwaukee, WI	948,201	409,200	796,312	51%
Louisville, KY	806,893	299,700	636,093	47%
Memphis, TN	708,275	250,200	599,222	42%
Sacramento, CA	1,056,979	391,500	1,025,455	38%
Detroit, MI*	713,777	278,200	2,023,076	14%

**it should be noted that Detroit, MI experiences a massive disparity in job opportunity between the city and the surrounding areas within the MSA[4], resulting in only 14 percent of jobs in the MSA served by Detroit's transit network*

Figure 2 shows Louisville's current transit service coverage and route by frequency.

[2] U.S Bureau of Labor Statistics - Louisville-Jefferson County, KY-IN, 2021 (https://www.bls.gov/eag/eag.ky_louisville_msa.htm)
[3] FTA – NTD Transit Agency Profiles, 2021 (https://www7.fta.dot.gov/ntd/transit-agency-profiles)
[4] Forbes – *Why Has Detroit Continued to Decline?*, 2018 (https://www.forbes.com/sites/scottbeyer/2018/07/31/why-has-detroit-continued-to-decline/?sh=7aac27aa3fbe)

Figure 2. TARC Job Coverage and Route Frequency



Ambition

TARC has the ambition to improve transit in the region

In January of 2020, TARC unveiled their first BRT system, “Dixie Rapid,” which now operates along Dixie Highway.[5] The system helps to improve safety, enhance traffic flow, and create a more efficient and reliable transit service for TARC riders. The launch of BRT service and a focus on continuous improvement can provide an important indicator to the community that transit matters and is a collective priority for the local governments. This is espevislly so when there are clear visual indicators, such as dedicated bus-only lanes with red paint, queue jumps at congested intersections, premium, and distinctive bus stations/stops and a fleet that stands out from the agency’s other buses.

The development of the COA, LRP and the appointment of a new executive director will carry TARC’s goals of commitment and stability forward to the Louisville community. These actions build upon TARC’s engagement with public agency partners in planning for future mobility through Move Louisville, City of Louisville Transportation Master Plan, and Connecting Kentuckiana 2040 Metropolitan Transportation Plan.

[5] Mass Transit – *BRT comes to Louisville with launch of TARC’s Rapid*, Jan. 2020 (https://www.masstransitmag.com/bus/article/21120393/brt-comes-to-louisville-with-launch-of-tarcs-rapid)

Partner Agency Support

TARC has a solid foundation of support from which to build.

Transit agencies in major metropolitan areas, such as Louisville, can find themselves in a difficult position because they are heavily dependent on other agencies and governmental entities to create and manage their operating environment. Three key examples include:

- TARC does not own or control the right-of-way in which it operates its services
- TARC has little input in how the pedestrian infrastructure that its riders rely upon to access transit are built and maintained
- TARC does not have a direct influence on development patterns and land-use decisions that can dramatically affect the likelihood of citizens electing to use public transportation

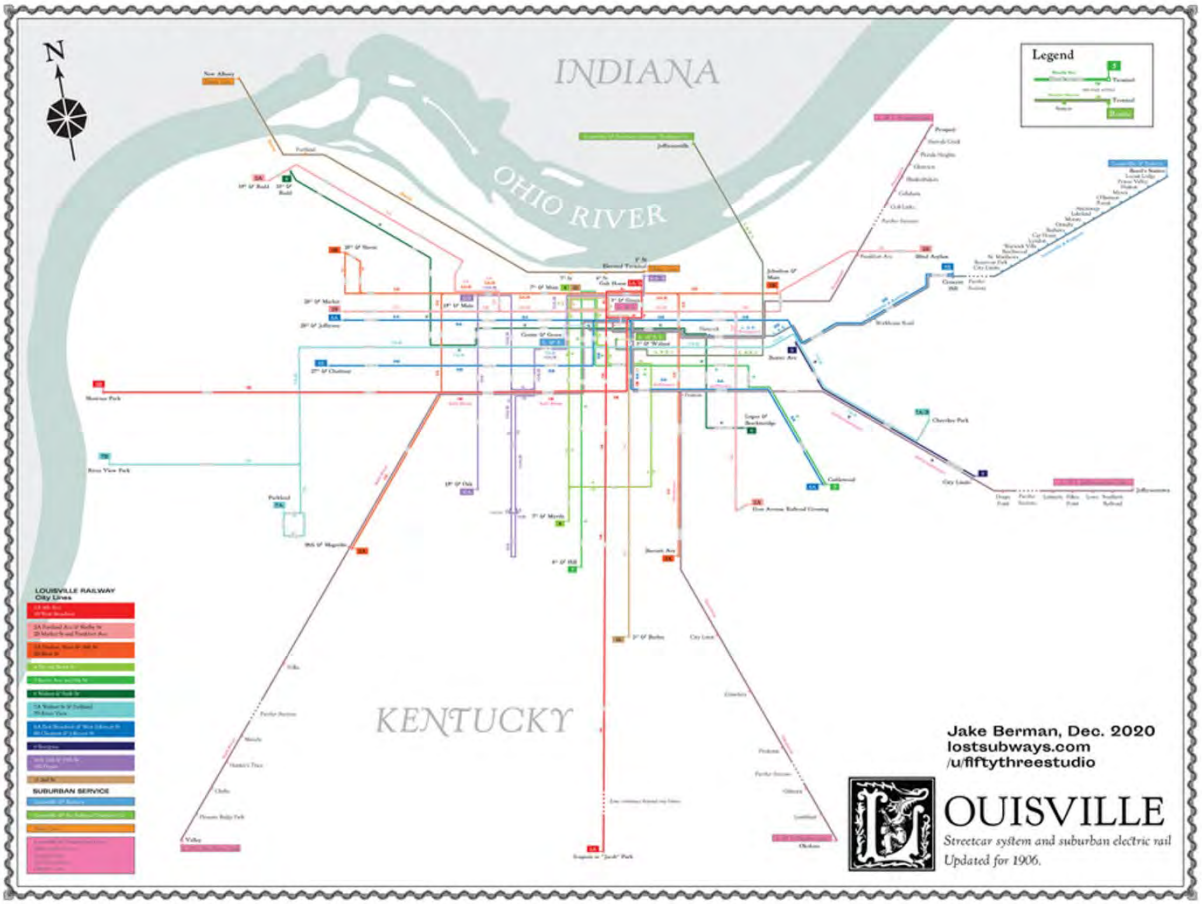
While there is significant room for improvement in all the areas above, TARC's partner agencies including METRO (highlighted by their forward-thinking MOVE Louisville Plan), KIPDA, and other local governments have expressed a clear intent to develop a more transit-supportive environment in the future. This awareness and expression of intent is positive and bodes well for TARC's future.

Good Street Network "Bones"

The urban core of the service area was built to support transit.

Transit functions best in mixed-use, dense, walkable environments because these places concentrate activity and enhance accessibility. The truism of "You get what you build for" is evidenced in pre-World War II development patterns, some of which stretches back to the streetcar era as seen in the map below, where a dense grid of streets with smaller blocks and higher-density commercial, retail, and housing all combine to form an environment where transit can function effectively. Recognizing this inherent transit-supportiveness and partnering with the public and private sector (such as the Louisville Downtown Partnership) to emphasize the revitalization of these areas (which is highly consistent with real estate market trends and consumer preferences) can go far to support TARC Tomorrow. As is cited in the "Weaknesses" section, and in common with metropolitan areas nationally, TARC's challenges in providing useful and productive service are far greater in the outlying areas (generally outside the Watterson Expressway) that have been built almost entirely based on auto-dependency.

Figure 3: Historical Streetcar Network [6]



Climate/Sustainability

TARC has made strides to improve its sustainability practices.

TARC added or will add 47 new, cleaner emission buses to their fleet.[7] Lower-emission vehicles will improve the overall air quality of the region, reduce the effects of climate change, and provide more reliable and sustainable transit service.

[6] https://www.courier-journal.com/in-depth/news/history/2021/01/27/louisvilles-forgotten-streetcar-lines-get-new-life-from-artist/6655456002/

[7] Mass Transit – *TARC celebrates arrival of first 15 of 47 new buses set to begin service*, July 2021 (https://www.masstransitmag.com/bus/vehicles/press-release/21229184/transit-authority-of-river-city-tarc-tarc-celebrates-arrival-of-first-15-of-47-new-buses-set-to-begin-service)

Weaknesses

Funding

There is little doubt that the primary constraint on TARC's future as a mobility provider for the greater Louisville area is the agency's limited funding.

While the recent approval of the Infrastructure Investment and Jobs Act of 2021 with its historic commitment of more than $1.2 trillion to the nation's infrastructure is a promising sign for TARC and transit agencies nationwide, the agency cannot fully benefit from federal funding unless it has sufficient local funds available to serve a local match. Further, federal funding for transit has both formula-derived (meaning a more consistent annual appropriation amount with Congressional approval) and competitive sources (which require significant preparation and are not guaranteed) as well as specific limits (particularly on use for ongoing operations costs) that mean that it must be paired with local funding for a transit agency to be viable.

Table 3 below shows the service area population, operational spending, and the subsequent operational spending per capita for Louisville and its peer cities.

Table 3. Transit Agency Annual Operational Spending Per Capita (2019)

City	Service Area Population (2019)	Operating Funds	Op. Spending Per-Capita
Detroit, MI	713,777	$ 129,767,400	$ 181.80
Sacramento, CA	1,056,979	$ 183,112,472	$ 173.24
Milwaukee, WI	948,201	$ 150,558,636	$ 158.78
Louisville, KY	***806,893***	***$ 89,788,580***	***$ 111.28***
Memphis, TN	708,275	$ 58,402,315	$ 82.46

Table 4 breaks down operating funds by source to provide more context into how each transit agency spends its operational budget.

Table 4. Sources of Annual Operating Funds Expended (2019, $M)

City	Operating Funds	Fares & Directly Generated	Local Funds	State Funds	Federal Assistance
Sacramento, CA	$ 183.1	$ 37.7	$ 95.9	$ 13.7	$ 35.8
Milwaukee, WI	$ 150.6	$ 37.6	$ 22.1	$ 68.9	$ 22.0
Detroit, MI	$ 129.8	$ 19.6	$ 54.7	$ 39.2	$ 16.3
Louisville, KY	***$ 89.8***	***$ 11.7***	***$ 58.8***	***$ 1.6***	***$ 17.8***
Memphis, TN	$ 58.4	$ 7.7	$ 29.5	$ 7.9	$ 13.3

A notable difference between Louisville and its peer cities is its limited funding from State sources.

Population Coverage

Louisville reaches only 37 percent of its Service Area Population.

While TARC performs relatively well in terms of providing job access, based on data from the National Transit Database and Remix software, only 37 percent of the Service Area Population benefits from service within a quarter-mile (see Table 5). This measure, which translates to roughly a five-minute walking distance, is widely held to be the industry standard within which most riders are willing to walk to access transit. As transit service frequency and usefulness increase (for example, along the Dixie Rapid line) that distance tends to increase and factors such as the pedestrian environment, sidewalk conditions, speeds of adjacent traffic, shade, public safety (and perceptions thereof) all can affect the willingness of people to walk to access transit. Within the TARC service area, the Klondike, Houston Acres, Highgate Springs, and Bon Air neighborhoods do not have effective transit service and are high-population density areas.

Table 5. Percent of Population within 0.25 Miles of Transit Stops

City	Service Area Population (2019)	Fares & Directly Generated	Percent of Population Served by Transit
Detroit, MI	713,777	712,500	100%
Milwaukee, WI	948,201	736,900	78%
Sacramento, CA	1,056,979	716,700	68%
Memphis, TN	708,275	389,200	55%
Louisville, KY	806,893	299,700	37%

The following figures portray the service coverage of each transit network and their respective population densities (people per square mile, 2019) by block group. Additionally, the transit lines are organized by service frequency, illustrating how the transit networks prioritize certain areas within their service area. While this may not specifically define a transit system's serviceability, it may help explain the disparity between Louisville and its peer cities.

Figure 4. Detroit Service Area and Population Density

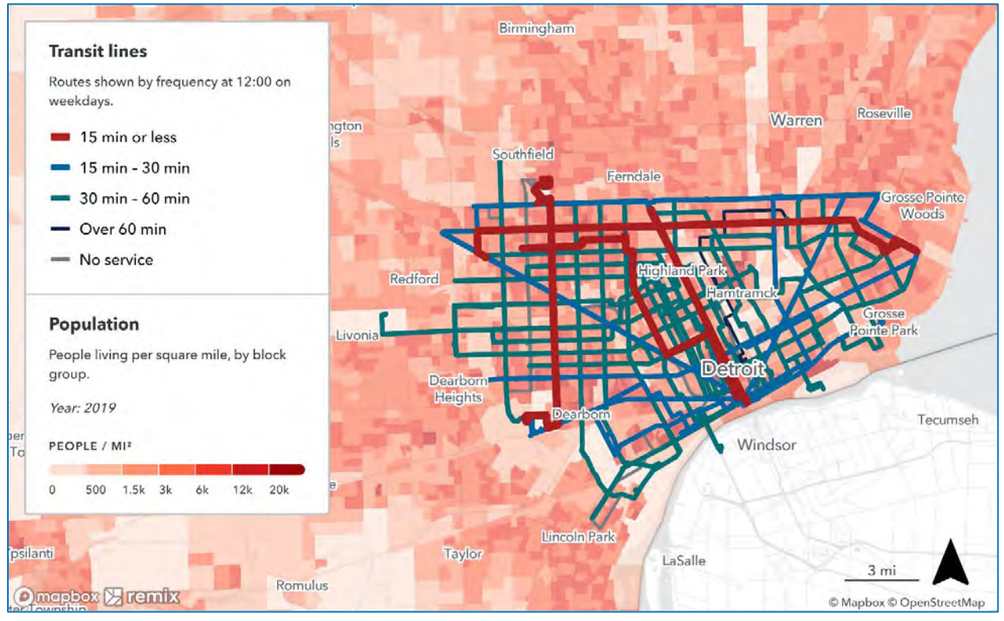


Figure 5. Milwaukee Service Area and Population Density

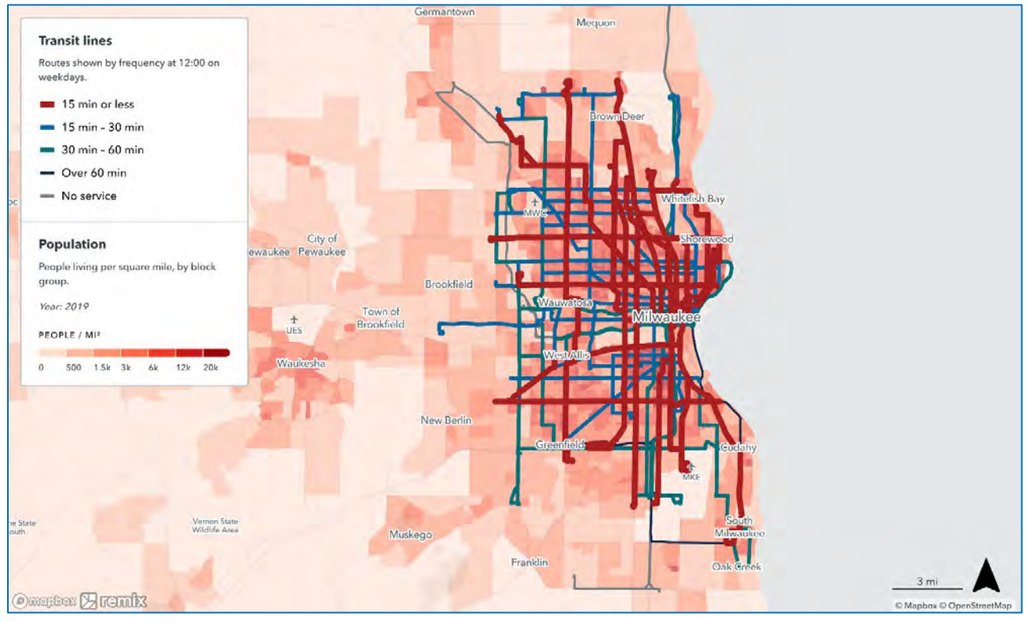


Figure 6. Sacramento Service Area and Population Density

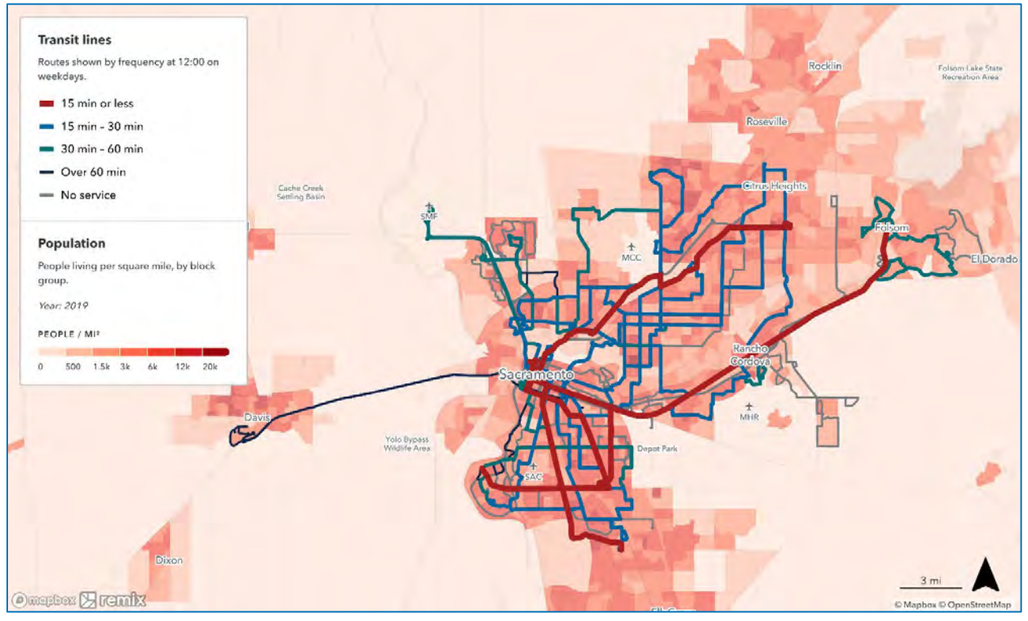


Figure 7. Memphis Service Area and Population Density

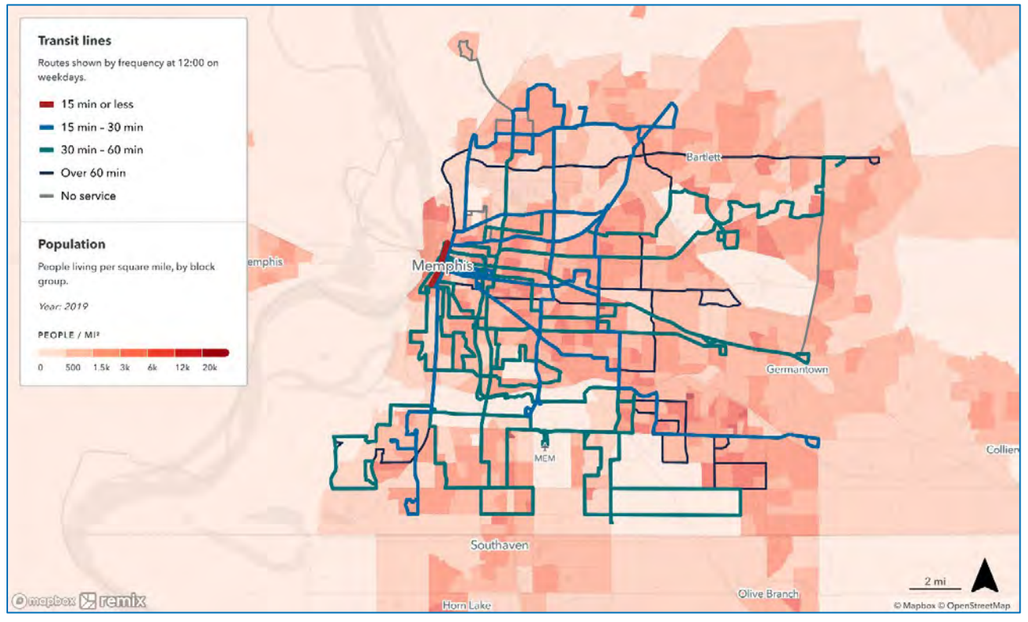
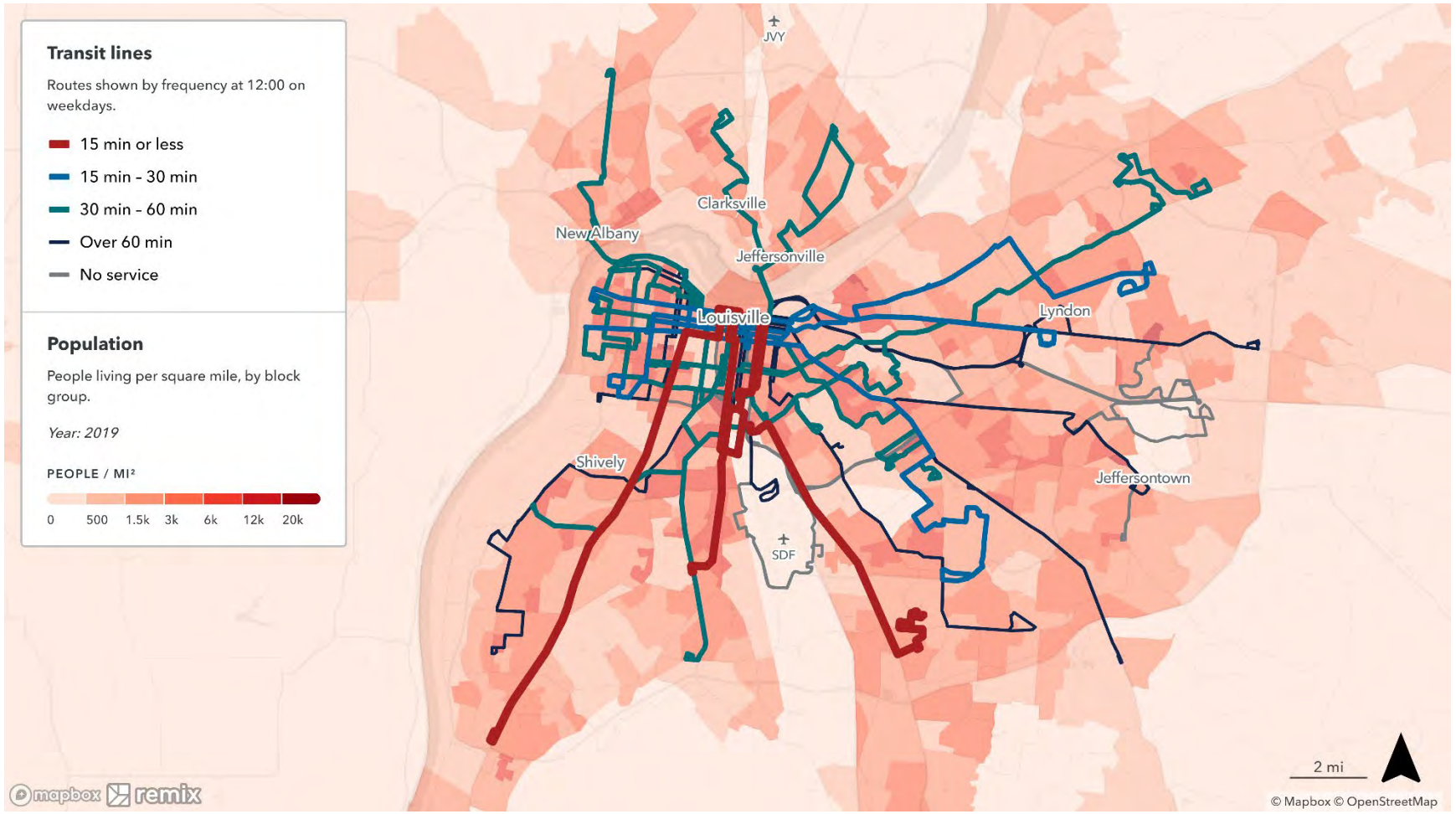


Figure 8. Louisville Service Area and Population Density

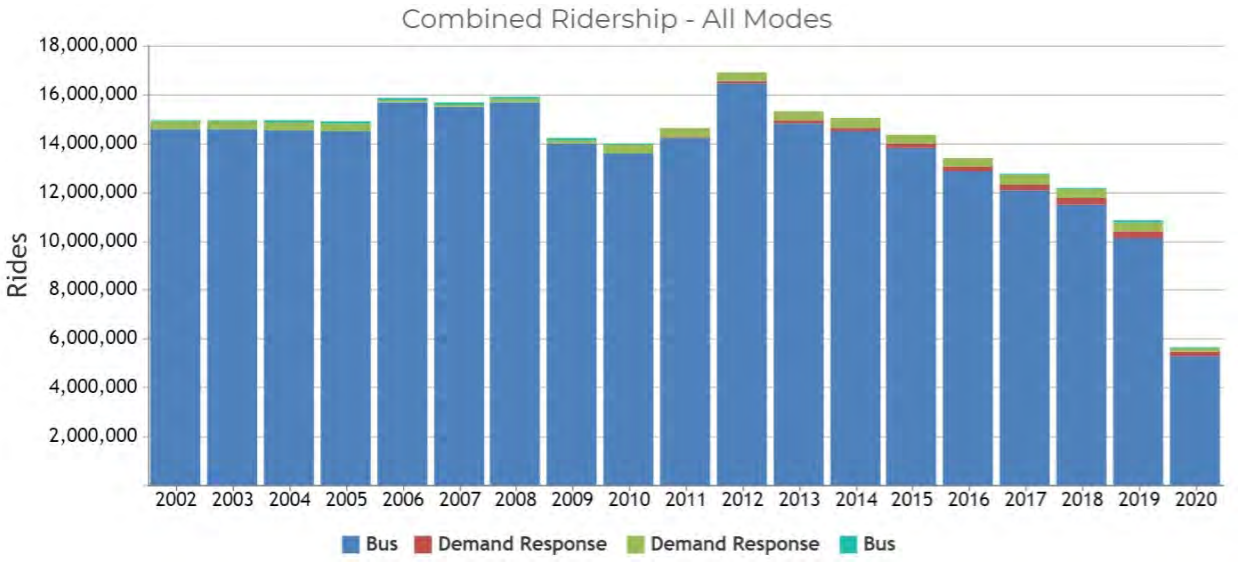


Ridership

TARC ridership has steadily decreased over the past decade.

Although total transit ridership has decreased by about 2 percent and per capita ridership has decreased by about 11 percent nationally over the past decade, since 2009, TARC ridership has experienced a 25 percent (or more, considering the COVID-19 Pandemic) decrease in ridership (see Figure 9).[8] This stark difference is certainly a weakness when compared to national transit ridership trends.

Figure 9. TARC Ridership (2002-2020)[9]



Despite the concerning data shown in Figure 9, Table 6 shows that Louisville has experienced similar decreases in annual passenger miles when compared to its peer cities.

Table 6. Annual Passenger Mile Percent Change (2013-2019)

City	Annual Passenger Miles, 2013 (PMT)	Annual Passenger Miles, 2019 (PMT)	PMT Percent Change
Sacramento, CA	125,252,756	98,821,770	-21%
Detroit, MI	142,714,227	107,136,505	-25%
Louisville, KY	70,179,891	51,769,341	-26%
Memphis, TN	51,678,745	35,180,679	-32%
Milwaukee, WI	151,268,785	94,803,053	-37%

The table above shows that all the transit networks mentioned have experienced significant changes in annual passenger miles, but it may not account for large shifts in population or population density. Additionally, “annual passenger miles” may not fully correlate with annual

[8] TARC – Comprehensive Operations Analysis, 2020
[9] National Transit Database – TARC, 2021 (Transit Authority of River City (TARC) | National Transit Database)

ridership, and specifically measures the number of miles traveled by paying passengers, rather than just a rider boarding and alighting a transit vehicle. Table 7 shows how the passenger miles per capita have changed from 2013 to 2019 for Louisville and its peer cities. Although it ranks in the middle of the pack, a 26 percent drop in six years leaves room for concern.

Table 7. Annual Passenger Miles Per Capita Percent Change (2013-2019)

City	PMT per capita, 2013	PMT per capita, 2019	PMT Percent Change
Detroit, MI	200	150	-25%
Louisville, KY	87	64	-26%
Sacramento, CA	129	93	-21%
Memphis, TN	74	50	-32%
Milwaukee, WI	158	100	-37%

Inefficient Route Planning

Circuitous routes, duplicative routes, and multiple route variants create inefficient service for transit riders.

As described in the COA, circuitous and duplicative routes cause inefficiencies within the transit system, resulting in poor reliability and excess spending. Table 7 and Table 8 show Detroit and Milwaukee, respectively, and their grid-based transit service patterns. Compared to these cities, Louisville experiences many indirect route patterns outside of the downtown area. Whether developed with the right intention of serving the most passengers with limited resources or necessitated by the circuitous nature of existing road networks, winding indirect routes create an inefficient path and longer travel times for customers, and lack the user-friendly clarity and simplicity of more direct patterns.

Similarly, the TARC system has several routes that have multiple branches, such as the #19 Muhammad Ali Boulevard. While there are often valid reasons that result in the creation of routes of this type, they are generally not preferred because can create confusion for both transit riders and operators. Clear, simple, and easy-to-understand routing makes the system easier and more convenient to use, particularly for new riders.

Figure 10 and Figure 11 show two examples of particularly indirect or circuitous routes within TARC's network.

Figure 10. Route 23 – Chestnut Ave

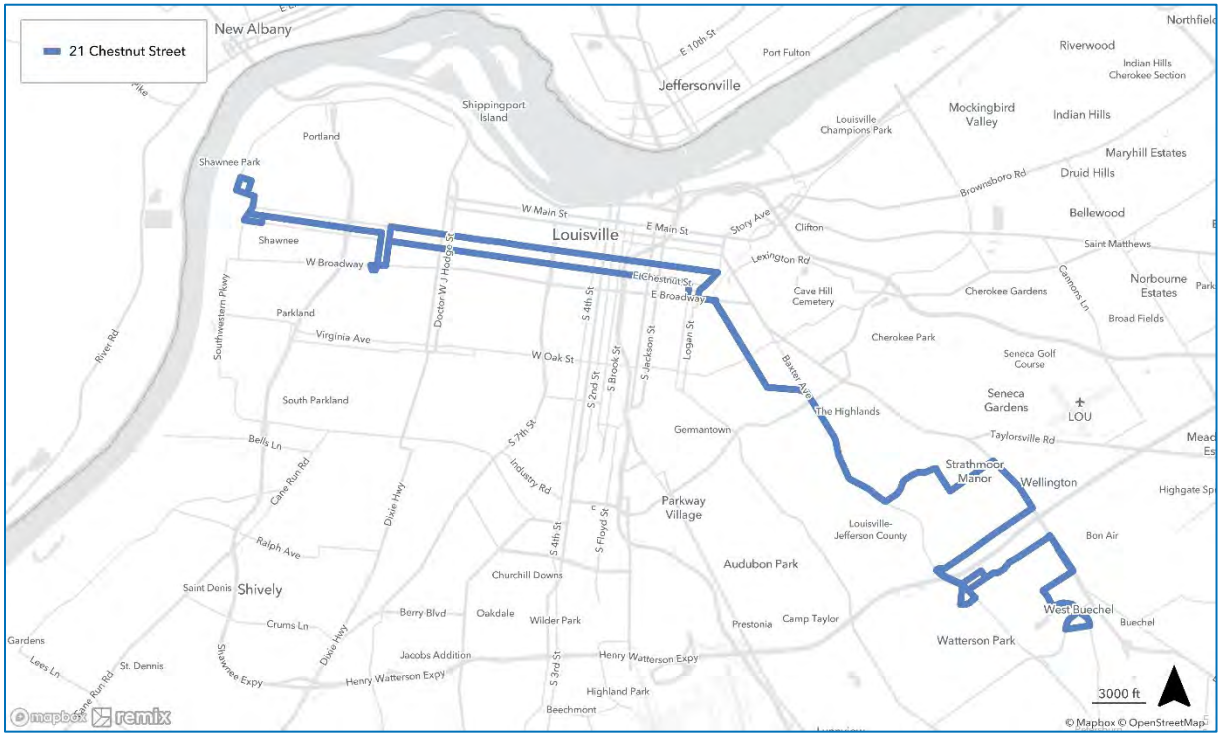
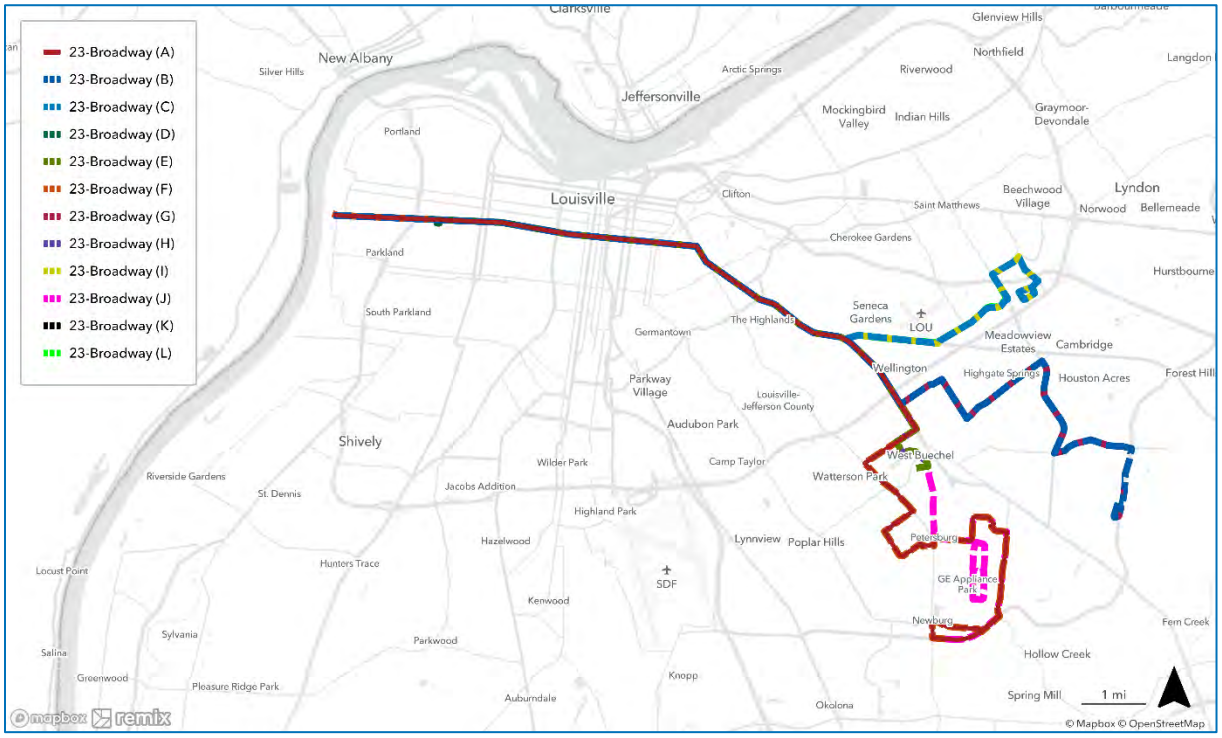
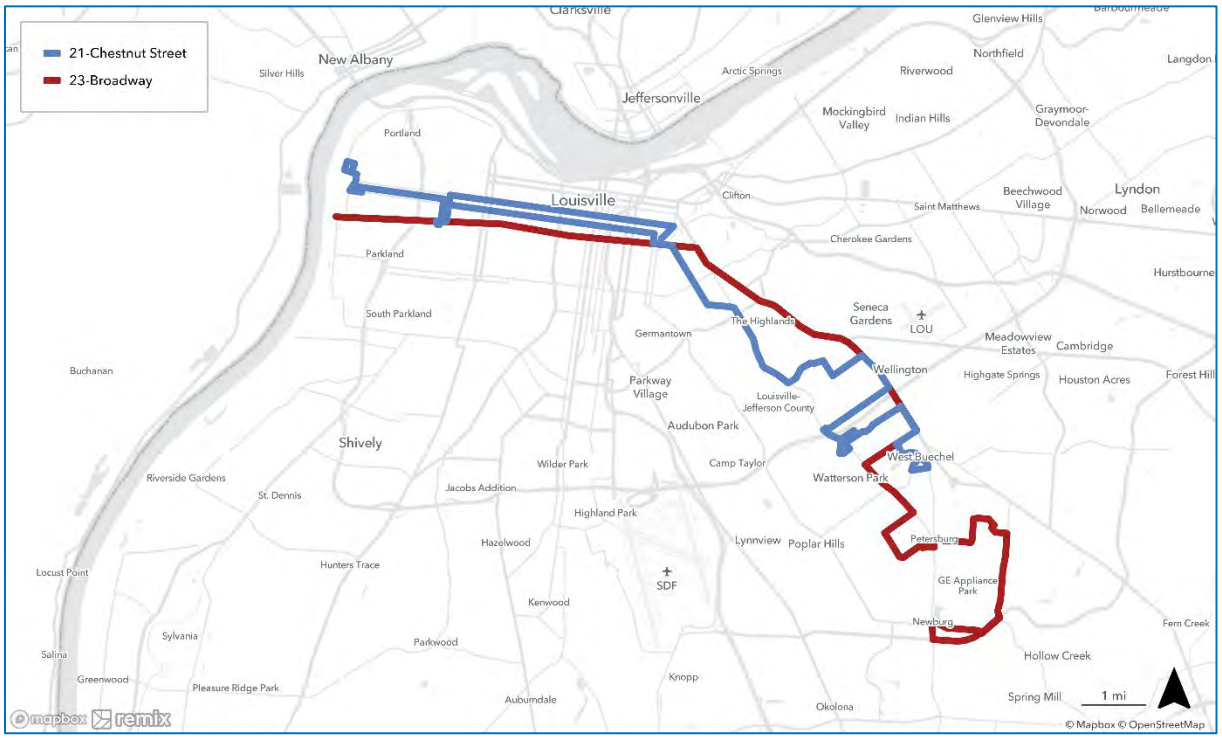


Figure 11. Route 23 – Broadway



Route 21-Chestnut Ave has a circuitous path in the southeast portion of the route and Route 23-Broadway is also circuitous in that area. Additionally, Route 23 has TWELVE different route patterns, which could easily confuse a driver, much less a passenger. Incidentally, they operate along very similar paths, as seen in Figure 12, further illuminating the comments made in the COA about duplicative and circuitous routes.

Figure 12. Routes 21 and 23



Auto-Oriented Development Patterns

Decades of Auto-Focused Growth Discourage Transit Use

Like most U.S. cities, auto-oriented development has dominated the Louisville area for more than 70 years. In contrast to the walkable, mixed-use, and relatively concentrated development patterns within the Watterson Expressway, newer developments of housing, retail, industrial and office all share the distinction of being oriented towards auto accessibility at the expense of walking, biking and transit access. Characteristics such as cul-de-sacs, office parks, high-speed arterials with limited pedestrian crossings, large parking areas separating buildings from the public right-of-way, limited or non-existent sidewalks, few or no bike facilities and more create an environment where transit is extremely difficult to provide in a manner that is sufficiently attractive and convenient enough to serve as a viable mobility option. Retrofitting such development patterns can be arduous and takes time as well as significant focus and commitment from policymakers. However, as evidenced by cities in the U.S. and globally, it is possible within the lifespan of TARC Tomorrow to achieve major progress towards reducing vehicle miles traveled and increasing transit mode share.

Opportunities

TARC's Long Range Plan will, in part, be guided by this SWOT analysis, and of the four areas evaluated this one – Opportunities – has the greatest potential to positively influence the outcome. TARC and the greater Louisville area it serves, stand to benefit by maximizing each of the opportunities discussed here as a means of building a stronger and more successful transit system and providing greater mobility and access to opportunities for the people. As noted previously, the recent passage of the Infrastructure Investment and Jobs Act of 2021 and the current Administration's prioritization of economic, climate, equity, safety, and accessibility goals for all transit projects. Incorporating this existing framework can encourage federal funding while improving the quality of life for not only the most-underserved communities in Louisville but also the city and region as a whole.

Increased Service and Coverage

Extending service and coverage would improve economic outcomes and accessibility.

Adding new service, extending existing routes to reach areas without transit access, and increasing service frequency could benefit both transit riders and the economy as a whole. There is a strong correlation between transit access and economic opportunity.[10] Not only would increased service and coverage improve economic outcomes, but access to education and healthcare would improve the quality of life of many of Louisville's residents. TARC's funding constraints limit expansion capacity in the near term, however, leveraging this TARC Tomorrow Long-Range Plan to build a case for increased transit service can be a powerful tool to attract new funding.

Equity

Although challenging, equity must be at the forefront of future planning efforts.

Urban Institute defines Transportation Equity as the following:

> *Transportation equity means that transportation decisions are made with deep and meaningful community input that leads to transportation networks and land use structures that support health and well-being, environmental sustainability, and equitable access to resources and opportunities.* [11]

There have been several opportunities this year to receive funding from the U.S. Department of Transportation for equitable transit planning efforts, may translate to future opportunities for TARC to pursue:

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[10] Urban Institute – Access to Opportunity through Equitable Transportation, 2020 (https://www.urban.org/sites/default/files/publication/102992/access-to-opportunity-through-equitable-transportation_0.pdf)

[11] Urban Institute – Access to Opportunity through Equitable Transportation, 2020 (https://www.urban.org/sites/default/files/publication/102992/access-to-opportunity-through-equitable-transportation_0.pdf)

1. $10 Million Funding Opportunity for Transit Planning to Address Climate Change and Equity in Communities Nationwide[12] (closed June 2021)
2. $16 Million Funding Opportunity to Help Communities Prosper through Transit (closed September 2021)[13]
3. $409.6 Million Funding Opportunity to Support America's Transit Bus Fleets[14] (closes November 2021)

Beyond funding, putting a clear emphasis on equity in terms of service provision, operating practices, and overall organizational alignment may be one element of building and enhancing TARC's reputation within the community, with riders, and with staff.

Overall Performance

TARC has room for improvement when considering a variety of metrics

AllTransit™ is a data source platform provided by the Center for Neighborhood Technology that utilizes connectivity, access, and frequency data to better understand the value of transit and enhance service and operations planning.[15] This data source was used to evaluate Louisville and its peer cities to see how Louisville performs when considering metrics such as employment, socio-economic quality, mobility, and others. Table 8 below shows Louisville and its peer cities' performance score as well as five important metrics for measuring transit quality.

Table 8. AllTransit™ Performance Scores and Metrics

City	AllTransit™ Performance Score	On average, households have:			
		Transit Trips per Week within 1/2 Mile	Transit Routes within 1/2 Mile	Jobs Accessible in 30-minute Trip	Commuters Who Use Transit
Milwaukee, WI	7.7	2,979	8	215,877	8.39%
Detroit, MI	6.9	1,901	8	165,696	7.86%
Louisville, KY	***6.3***	***1,424***	***7***	***164,696***	***6.51%***
Sacramento, CA	6.3	1,163	10	158,886	3.95%
Memphis, TN	4.1	613	4	78,616	1.97%

One metric in particular stood out in favor of Louisville, where 100 percent of Low Income Housing Tax Credit units are within ½ mile of transit (visit https://alltransit.cnt.org to view this metric and others). Despite this positive result, Louisville can improve its status by increasing the number of commuters that use transit and generally increasing service throughout.

[12] FTA – U.S. Department of Transportation Announces More Than $10 Million Funding Opportunity for Transit Planning to Address Climate Change and Equity in Communities Nationwide, April 2021 (https://www.transit.dot.gov/about/news/us-department-transportation-announces-more-10-million-funding-opportunity-transit)

[13] FTA – U.S. Department of Transportation Announces $16 Million Funding Opportunity to Help Communities Prosper through Transit, July 2021 (https://www.transit.dot.gov/about/news/us-department-transportation-announces-16-million-funding-opportunity-help-communities)

[14] FTA – U.S. Department of Transportation Announces $409.6 Million Funding Opportunity to Support America's Transit Bus Fleets, Sept. 2021 (https://www.transit.dot.gov/about/news/us-department-transportation-announces-4096-million-funding-opportunity-support-americas)

[15] AllTransit™ - Metrics, 2021 (https://alltransit.cnt.org/metrics/)

Threats

Lingering Image and Public Perception Concerns

Prior administration scandals, ridership declines, and service quality issues threaten TARC's ability to become a valued community partner.

Transit agencies, like most public entities, can quickly see their reputations damaged and face years of hard work to recover from the stigma associated with major negative events. TARC has, unfortunately, experienced such an event under their prior leadership and is now working to recover. This can be difficult and complex work as management must simultaneously address issues and concerns from the community at large, from riders who may feel as though they have been neglected or mistreated, from staff who may similarly feel a lack of trust and confidence in leadership and from agency partners who play such an important role in shaping the "ecosystem" in which a transit agency operates. Similarly, a transit agency in this situation must also focus on a "back to basics" approach to restore public confidence in its abilities to handle the fundamentals of transit service delivery, while at the same time demonstrating a clear commitment to change and to a forward-looking approach. These concurrent strategies focused on the immediate ("back to basics") and the future (with the long-range plan serving as a logical basis) are also critically important to build a successful platform from which to seek additional funding.

Prolonged Effects of the COVID-19 Pandemic

If ridership does not return to pre-pandemic levels, the viability of transit service may suffer.

Transit ridership dropped to nearly 40 percent of 2019 levels at the height of the pandemic. While ridership has increased slowly, it may not return to 2019 levels any time soon. Restoring public confidence in the system and being purposeful and focused about communicating TARC's numerous efforts to make their system safe from a public health perspective can make a significant difference, however, absent a clear pathway to pandemic recovery this will likely continue to dampen ridership.

Funding

Low ridership may impact funding from local, regional, and national sources.

Should ridership continue to decline, funding resources may be less inclined to fund TARC's transit system. Federal grants for transit improvements focus heavily on existing ridership, rather than the potential for new ridership. Additionally, as seen in Weaknesses: Funding, state funding sources are *already* low in comparison to Louisville's peers. Local leaders should encourage the state to better fund transit and build a compelling case to do so that aligns with state goals and priorities (and those of the local delegation) to make up for any potential struggles for funding in the future.

Increasing Suburbanization

Suburbanization threatens public transit success.

As the Louisville region experiences increasing suburbanization[16] and the subsequent increase in single-occupancy vehicle traffic, fewer people will find that using public transit is a viable choice. Not only will this harm TARC's funding, but it will also cause declines in air quality, increase traffic congestion, and diminish the overall quality of life. Strong urban planning policies, such as increased support for transit-oriented development, are essential to counteract this trend. Compounding this concern is the fact that Louisville is already heavily auto-dependent.

Next Steps

As 2022 begins, TARC finds itself with a mix of strengths, weaknesses, opportunities, and threats. Many of these are shared with similarly situated transit agencies nationwide. However, TARC also has relatively unique challenges in terms of agency reputation and public image to address due to the prior administration's missteps. Outcomes of the SWOT analysis will inform TARC Tomorrow, including the development of effective transit and mobility services, program, and service delivery options, and TARC's real and perceived role and relevance in the community.

[16] The Green Report – Look at the Census Data – Louisville is Still Suburbanizing, 2021 (https://thegreenreport.org/look-at-the-census-data-louisville-is-still-suburbanizing/)

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TARC TOMORROW

Long Range Plan 2040

Transit Employee of The Future Issues Paper

January 2022

tarc Tomorrow

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Introduction

No transit agency can successfully serve its community without a strong and talented workforce. Yet over the past several years, transit agencies nationwide have been faced with unique challenges in terms of building and sustaining their workforce. From bus operators to mechanics, field supervisors, and administrative staff — there is a myriad of challenges for transit agencies to address in order to deliver mobility solutions. As the American Public Transportation Association (APTA) recently stated:

> *Transit agencies are transitioning to applications of new technologies, new energy sources, new models of service, and collaborations through nontraditional partnership models. This calls for a nimble workforce that brings a range of knowledge, skills, and accumulated experiences from customer service to technology applications.*[1]

As TARC develops its TARC Tomorrow Long-Range Plan, this supporting document will examine the following challenges to help identify key issues and potential solutions that may position the agency for long-term success.

This paper consists of two primary sections:

- An overview of national and international trends related to transit workforce issues, including:
    - An assessment of the near-term issues as they continue to affect transit agencies over the next several years, including COVID-related impacts.
    - An evaluation of the longer-term trends and possibilities, such as autonomous vehicle operations, and how they may be impactful.
- A detailed discussion of TARC's workforce issues, challenges, and opportunities as they relate to the TARC Tomorrow Long Range Plan.

Overview of Public Transportation Workforce Issues

Near-Term (Next 1 – 5 Years)

Transit agencies have experienced workforce hiring and retainment challenges for some time, but the emergence of COVID-19 and its tumultuous impacts on the public transportation industry has brought workforce issues to the forefront.

[1] Transit Workforce Readiness Guide, APTA, 2021 (https://www.apta.com/research-technical-resources/aptau/transit-workforce-readiness-guide/)

According to the Transportation Trades Department at the AFL-CIO, about 400,000 people in the U.S. are employed in the public transportation sector and more than 90 percent of those workers are in “front-line” occupations.[2]

Over the past several years, transit agencies across the nation have been forced to reduce service levels or have experienced severe service quality degradation due to a lack of bus operators. In some instances, these changes are a result of layoffs or attrition during the early phases of COVID-19, when ridership declined dramatically, and transit agencies saw their revenues take a major hit. Many agencies predicted catastrophic financial impacts for the future. Fortunately, federal funding provided an important reprieve from the financial hardships and kept transit agencies from having to implement more severe service reductions. However, as ridership stabilized and transit agencies began to reinstate service, labor shortages became an increasingly large concern and continue to be a challenge.

Before the pandemic, transit agencies still faced a range of workforce issues that were indicative of patterns across the U.S. These included an aging workforce, immigration patterns and baby boomer retirement. Furthermore, the workforce continues to diversify in the following ways:

- gender
- ethnicity
- culture
- religion
- sexual orientation
- disabilities

The pandemic only exacerbated the challenges.

Retirement and diversity are among the most pressing of these issues. The public transportation industry is experiencing an extremely high level of retirement, which is more than double the rate for the nation’s entire workforce.[3] Over half of the nation’s public transportation workforce is expected to become eligible for retirement in the current timeframe (1 – 5 years). This loss of institutional knowledge can be addressed with proper transition planning. Transit agencies are also having trouble attracting top-flight talent to fill vacated positions.

Along with retirement, the industry has also struggled with diversity issues for a while, as summarized below:

> *Historically, public transportation organizations have struggled to achieve a diverse workforce that reflects the demographics of the local area or the larger labor force (C. B. Cronin, Alexander, Cronin, B., Riches, & Stern, 2013; U.S. Dept. of Labor, 2007). Ivey, Powers, and Clark (2019) recently outlined the*

[2] *Priorities for Frontline Public Transportation Workforce Development*, Transportation Trades Department (AFL-CIO), 2020. (https://ttd.org/policy/policy-statements/priorities-for-frontline-public-transportation-workforce-development/)
[3] *Workforce Planning and Human Resource Development Strategies for Minnesota's Public Transportation Agencies*, Minnesota Department of Transportation Research Project Final Report 2021-06, March 2021.

reasons diversity is important in the transportation industry workforce as well as the factors that have made recruitment and retention of underrepresented populations a challenge. Traditionally, tenure has been attained in the public transportation industry through seniority which has resulted in male Caucasians gaining promotion at a higher rate than other demographic groups (Cronin et al., 2013). In addition, promotion and managerial qualifications have relied heavily on technical skills versus people management skills. A lack of diversity and people management skills in senior positions have resulted in reported challenges with communication, knowledge transfer, and training and development within the industry (Cronin, 2013; U.S. Dept. of Labor, 2007).[4]

Addressing the diversity challenge is one of the critical success factors for agencies like TARC, moving forward. A diverse workforce supports more creativity and new perspectives that can help transit agencies adapt to changing conditions. It increases cultural awareness and helps agencies better reflect the customers and communities they serve. In turn, this can position agencies to be viewed as “employers of choice” and therefore broaden the talent pool. This last point is particularly important, as competition for talent in a stretched labor market makes it harder for transit agencies to compete for those entering the workforce. As with other parts of the government sector, the ability to be competitive can be hindered by hiring practices relative to the private sector as well as (in many cases) salary differentials.

Recruiting and retention remain an ongoing challenge for many systems, regardless of variation among transit agencies. Adapting to online recruiting involves both securing and making effective use of agency funds to develop and maintain a competitive, attractive online presence. This can be difficult as new platforms emerge. Rapidly changing technological needs are another related factor are highlighted by the transition to zero-emission buses, with their very different maintenance requirements. The increasing use of technology in nearly all aspects of the public transportation industry magnifies the need for a comprehensive approach to workforce development. Such an approach will ensure that transit providers can continue to deliver quality service to their communities.

Longer-Term (5 Years and Beyond)

In the longer term, there is the threat of the autonomous operation of transit agencies’ fleets. A transition to fully autonomous operation has been speculated for more than a decade. Yet, few full-size buses are operating autonomously in the world and none are operating in full-time revenue service open to the general public within the U.S. (as of the publication date of this Issues Paper). Nonetheless, technological advances and the promise of benefits, like improved safety, increased reliability, and lower operating costs, will probably continue to drive the development of autonomous operation for public transit vehicles. This transition appears to be inevitable and is simply a matter of when. For transit agencies, this means establishing an early plan to transition bus operators to other functions within the agency, along with a gradual reduction through attrition. There is some expectation that bus operators will remain onboard

[4] *Ibid.*

revenue vehicles for an interim period in a 'backup driver' role or possibly a customer service position later in the transition to autonomous operation. Similarly, it is possible that having agency staff onboard all revenue vehicles may be commonplace, long after autonomy takes over due to public perception concerns, customer service, and/or safety and security functions.

Beyond autonomy, there are other considerations, such as increased use of technology and data across all aspects of transit system functioning, automation, the internet of things (IoT) bringing connected devices and even parts, and the continuation of trends as discussed in the near-term section. More than likely, these will all call upon transit agencies to accelerate their responsiveness and ability to adapt to change.

In addition to the internal considerations, transit agencies are also expected to face an ever-evolving and increasingly global competition for talent. As the mobility landscape continues to evolve, transit agencies will need to be holistic in their approach to building a sustainable workforce, as the graphic below from "TCRP Report 162: Building a Sustainable Workforce in the Public Transportation Industry - A Systems Approach (2013) emphasizes.[5]"

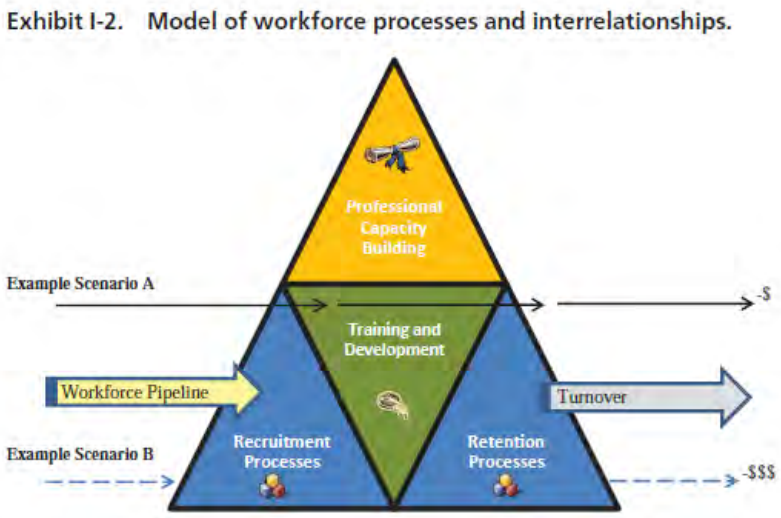

Figure 1: Model of Workforce Processes and Interrelationships

As indicated in the graphic, components include professional capacity building, recruitment, retention, training, and development. Each of these requires focus to successfully address the inevitable and never-ending process of new members of the workforce coming in (as depicted by the "Workforce Pipeline" arrow) and those who leave (Turnover).

The Transit Employee of the Future at TARC

So, what does all this mean for TARC? Perhaps the most significant takeaway is that workforce recruitment, development and retention cannot be left on the backburner if TARC is truly committed to becoming a valued and integral mobility provider for the Louisville community. As

[5] National Academies of Sciences, Engineering, and Medicine 2013. Building a Sustainable Workforce in the Public Transportation Industry A Systems Approach. Washington, DC: The National Academies Press. https://doi.org/10.17226/22489.

it has been routinely seen in the service industry, earning and retaining customers depends heavily on the talent and customer-service orientation of the workforce. For this reason, establishing the agency's workforce as a foundational element of the TARC Tomorrow Long-Range Plan is recommended.

Below are several initiatives for TARC's consideration in support of a robust "Transit Employee of the Future" component within the TARC Tomorrow Plan:

- Drawn from an APTA initiative, **TARC should consider developing a "Workforce Readiness Program" to cultivate future talent**. As noted by APTA, such an initiative can increase awareness of transit as a career field among high school and young college-age students, create a pipeline of talent ready to fill entry-level positions, support equity, and inclusion, and even motivate students who might otherwise lack the sense of purpose to continue their education. APTA identifies five steps to create a successful program of this type, including:
    - Identify needs and opportunities
    - Form outreach partnerships
    - Develop and implement programs
    - Close the loop with entry-level jobs
    - Evaluate hiring, onboarding, and retention.[6]

- **Develop a curriculum and training and development plan for the transition to battery-electric buses**. The skills required to maintain a zero-emission fleet are quite different than longstanding practices for diesel or even CNG-fueled vehicles, particularly for the complex electronic systems onboard.

- **Review and adopt the four-module approach identified in *TCRP Report 162: Building a Sustainable Workforce in the Public Transportation Industry- A Systems Approach*[7]**. As illustrated in the "route map" below, this document lays out a systematic and very well-organized approach to addressing transit agency workforce issues.

[6] Transit Workforce Readiness Guide, APTA, 2021 (https://www.apta.com/research-technical-resources/aptau/transit-workforce-readiness-guide/)
[7] National Academies of Sciences, Engineering, and Medicine 2013. Building a Sustainable Workforce in the Public Transportation Industry A Systems Approach. Washington, DC: The National Academies Press. https://doi.org/10.17226/22489.

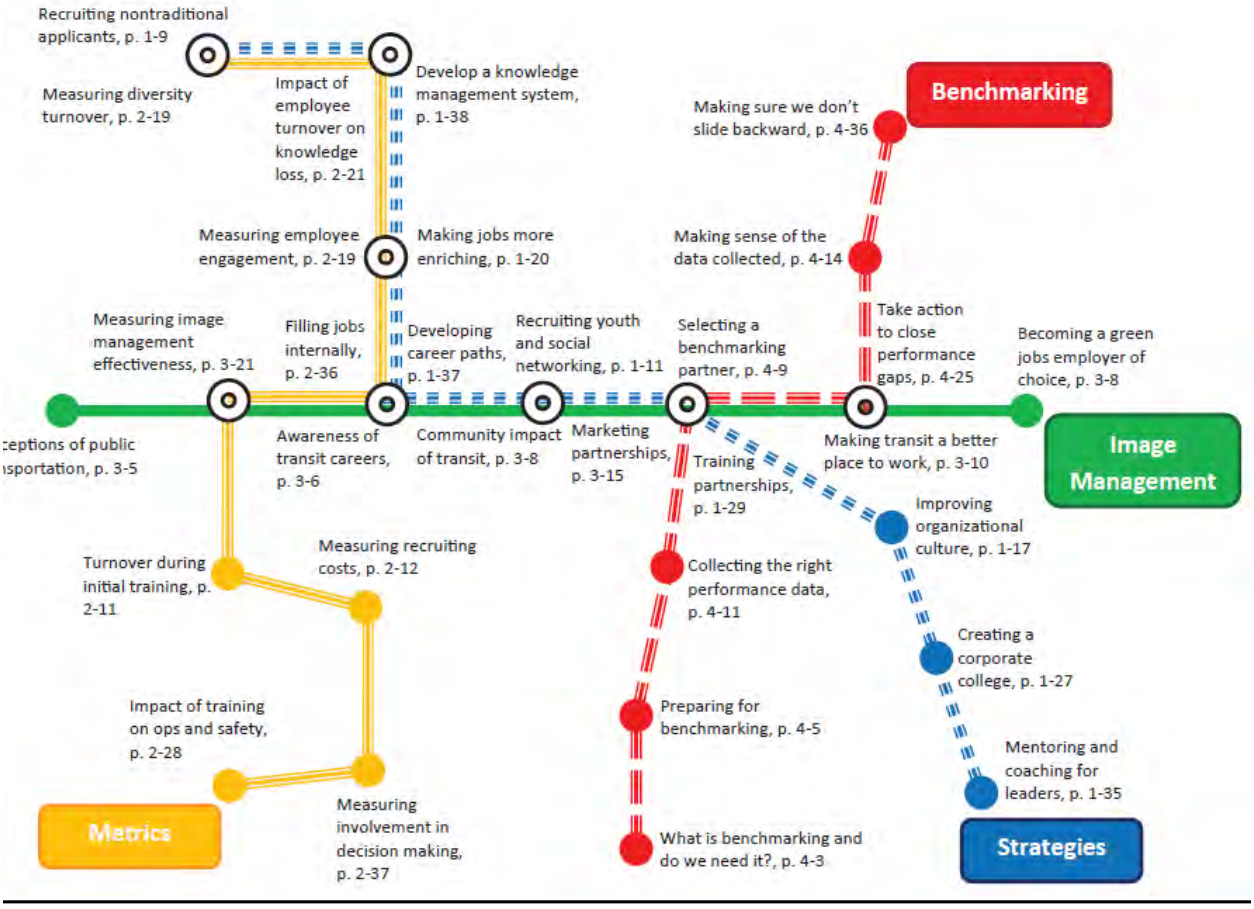

Figure 2: Route Map for a Sustainable Workforce [8]

In summary, the nation's transit industry and TARC are challenged by a complex tangle of issues that include baby boomer retirements, public perception issues, changing technologies, and increased competition in the marketplace for workforce talent — all overlaid with near and long-term implications of the COVID-19 pandemic. While there are no simple answers, a strategic, systematic approach to workforce recruitment, development, and retention will be a cornerstone for successful transit agencies moving forward.

[8] National Academies of Sciences, Engineering, and Medicine 2013. Building a Sustainable Workforce in the Public Transportation Industry A Systems Approach. Washington, DC: The National Academies Press. https://doi.org/10.17226/22489.

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2040 Long Range Transportation Plan

TARC TOMORROW

Long Range Plan 2040

Transit Industry Trends Paper

March 8, 2022

tarc Tomorrow

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Introduction

The transit industry is evolving rapidly. The national and global transit landscape is experiencing a significant change in terms of service delivery models, emerging technologies, use of transportation network companies (TNCs) such as Uber and Lyft, public and customer expectations, funding and financing, and several other disrupting factors. As transportation technologies continue to evolve at an ever-accelerated pace, cities throughout the country are faced with the dilemma of managing the operation of these new technologies in coordination with outdated infrastructure. Many communities and transit systems are addressing these changes with creative and innovative solutions.

Not only are the technological inputs evolving more rapidly than ever before, but there have also been some fundamental shifts in the “why” of public transit that are shaping the future. Social unrest, the COVID-19 pandemic, climate change, and other factors are resulting in transit agencies re-thinking their role in their community. These external forces and changing views of public transportation's role in modern society and metropolitan areas, combined with the rise of new technologies and emerging mobility, create the potential for transformative change and an opportunity to shape the future for public transportation in Louisville.

The Transit Authority of River City (TARC) provides public transportation for the greater Louisville, Kentucky area. The purpose of this document is to explore potential opportunities for the advancement of transit service in the Louisville region as TARC plans for the future. This document is not intended as a comprehensive transit plan or analysis; rather, it identifies potential viable near-term and “longer-term” transit strategies as a starting point of continued analysis and discussion among local and regional stakeholders and to inform the development of the TARC Tomorrow Long Range Plan. Topics discussed include alternative delivery service models as well as innovative applications of new technologies.

Transit Agency Purpose and Role

As evidenced by the recently released 2020 Census, the Louisville region is growing, and the form of that growth offers challenges and opportunities for the agency as mobility needs grow and change. TARC will play a key role in supplying expanded mobility options and access to opportunity whether it be getting workers to jobs, students to education, patients to healthcare or other critical trips. Traditionally, transit agencies like TARC delivered services through buses and paratransit alternatives. While these modes continue to play a role as core elements of a transit network, a continuum of new mobility options are offering innovative opportunities to enhance customer experiences in the new mobility landscape.

While transit agencies focus on moving the community forward and providing access to opportunity through effective transportation services, the role of transit agencies is moving beyond being a bus agency to incorporating a framework of mobility management. The Federal Transit Administration defines mobility management as follows:

The roles for transit workers are evolving just as the options for transit riders are expanding. Transit agencies are incorporating new methods of service delivery, new electric vehicles, and

expanding fleet composition to include additional shuttles and passenger vehicles of a variety of sizes. At the center of the ongoing transit evolution is technology in a variety of forms. The trends shaping the transit industry today and in the future are highlighted below.

> *Mobility management is an innovative approach for managing and delivering coordinated transportation services to customers, including older adults, people with disabilities, and individuals with lower incomes. Mobility management focuses on meeting individual customer needs through a wide range of transportation options and service providers. It also focuses on coordinating these services and providers to achieve a more efficient transportation service delivery system.*

Transportation as an industry is evolving quickly, with a focus on innovation and technology to provide more frequent, reliable, and direct connections. Transit agencies can expand opportunities for riders by collaborating and integrating with new mobility options. Mobility options now include on-demand microtransit services, transportation network companies (e.g., Uber and Lyft), electric bike and scooter rentals, and other technology-enhanced mobility options.

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Service Delivery Industry Trends

Over the years, the way in which transit agencies deliver their services to passengers has evolved to meet the needs of the community. It is important to continue to evaluate user needs with a goal to provide offerings that best serve customers. This section discusses a variety of service delivery trends that have been implemented within the transit industry in recent years as agencies adapt to changing travel patterns.

TARC Long Range Plan (2008-2009)

In 2009, TARC published its Long Range Plan Update in consultation with the Kentuckiana Regional Planning and Development Agency (KIPDA). The report indicated that TARC and the greater Louisville community have a tremendous opportunity to build a more robust and comprehensive transportation system. With proper financing and political support, the system can provide a broader range of transportation options that respond to changing demographics, the changing climate, and changing consumer preferences.

The key finding of the report stated that an increase in occupational tax could generate enough revenue to provide TARC with consistent funding for service expansions such as a light rail project or another advanced transit option. Other findings of the report include:

- Louisville residents desire convenient, fast, frequent, and affordable transit.
- Community leaders and residents would like to see improved bus services for seniors but would prioritize a light rail system or intercity passenger rail.
- Policy changes, such as dedicated busways and congestion pricing, could enhance transit operations.

It is clear that the proposed increases in funding sources for light rail did not come to fruition, however, with the opening of the Dixie Highway BRT line, there is momentum to find support for similar projects and programs that improve mobility and access for the community.

Comprehensive Operations Analysis/Bus Network Redesign

A Comprehensive Operations Analysis (COA) examines the existing transit services and identifies opportunities for improving system efficiency and effectiveness. It is a planning level tool used to develop potential near-term operational changes to help deliver more effective and useful service to the community. TARC recently completed a COA project that evaluated the current transit system and developed a range of potential improvements aimed at helping to meet the evolving transit needs of the greater Louisville region. Beginning in 2018, the TARC COA project team followed a four-step process that included establishing goals, collecting data, stakeholder engagement, and the development of recommendations.

Figure 1: TARC COA Process[1]

The COA proposed three potential improvement concepts which could be phased over time:

- Concept 1: Route Optimization
- Concept 2: System Restructuring
- Concept 3: System Vision

The three proposed concepts present a strategic, phased approach to improvements that focus TARC's limited resources on the routes and service periods that will yield the most benefits to new and existing customers.

In addition to the proposed improvement concepts, several 'Next Steps' were proposed at the completion of the COA:

- Deliberate on which improvement concept to advance and engage all stakeholders
- Complete the network analysis of the selected concept
- Complete Title VI and Environmental Justice analyses as prescribed by FTA
- Develop a Comprehensive Implementation Plan that outlines concrete steps from the finalization of the recommendations to the roll-out of new service

Based on the findings of the previous LRP and the conclusions and recommendations of the COA, it is evident that the community's mobility needs have evolved over decades. This includes a shift seen in many metropolitan areas from a predominant "many to one" travel pattern (based on the majority of jobs and activities being located in the urban core of the city) to a "many to many" situation (where jobs and activities are effectively lumped in many different locations across the metropolitan area). Yet TARC's network of

[1] TARC Comprehensive Operations Analysis, May 2021

transit routes has not yet made a similar transition. This gap between new and different mobility needs and a system that is still largely focused on older patterns is a primary reason ridership has been in decline for many years. It is time for TARC to implement the most needed and effective options to improve transit service in Louisville by bringing its services into alignment with current and future transportation needs.

In a similar frame of mind as a COA, many transit agencies looking to start fresh have completed a bus network redesign. When a city is looking to invigorate its bus system, simplicity is the core organizing principle. Several opportunities for improvements arise in a transit system redesign. Goals include:

- **Provide direct routes.** Aim to offer riders routes that directly serve the most frequented destinations. Ensure route offerings provide access to main areas where passengers travel for employment, education, and civic life.
- **Enhance frequency.** A focus on high-frequency routes allows transit agencies to provide a better quality of service to the routes with the highest ridership.
- **Make the system easier to understand**. Provide service at predictable intervals. In addition, make sure that riders are aware of any differences between weekday and weekend service offerings.
- **Create reliability.** Where possible, divide long routes into shorter, more direct segments. In some cases, long, aimless routes can be eliminated outright. GPS technology helps address gaps in service or bunching in real-time.
- **Improve trip speeds.** Transit signal priority ensures buses move through intersections more quickly. Consider removing less-frequented bus stops to reduce the number of times buses must slow or stop.
- **Provide real-time information.** Riders expect the convenience of apps that make it easier to plan a trip and navigate a route. Real-time information allows travelers to compare available trip options, potentially combining modes or shifting a travel schedule.
- **Leverage catalytic events**. Bold improvements to transit systems can be combined with other regional initiatives to maximize positive changes. Synergies among public communications and roadway enhancements can build on the potential changes from a transit redesign.

Transit agencies have found success by heavily investing in customer outreach and education campaigns to ensure communities were ready for their redesigned networks. Outreach has included individualized education, with online information specific to each customer's route and street teams to educate riders at bus stops before, during and after implementation.

COAs and bus network redesigns have proven to be extremely useful tools for transit agencies looking to adapt to current service needs and prepare for the future.

Mobility on Demand

The culmination of new technologies, emerging service models, and changing user preferences result in what has been termed mobility on demand (MOD). This is a user-driven model where transit agencies respond to user locations via smartphone mobile applications. The model compliments microtransit and flex-route transit design alternatives. This section provides an overview of these service delivery models.

Microtransit

Technological advancements driven by the private sector have pushed new possibilities for serving public transit customers. One of these advancements, microtransit, offers new opportunities to provide enhanced service in low-density areas. Microtransit services are intended for shorter trips under approximately 20 minutes in duration in defined service areas. This service utilizes vehicles that are smaller than traditional transit vehicles and is meant to improve first- and last-mile connections to higher frequency transit services. Microtransit solutions provide direct, efficient, and demand-responsive service. Operating specifics such as service hours and coverage area can be tailored to meet the needs and/or resources of the agency such as fleet availability or available operating budget.

Flex Route

Fixed routes function best along main streets that connect many people to many destinations. In areas with meandering streets connecting fewer people and fewer jobs, fixed routes might not be feasible when limited resources need to be deployed effectively. Flex-route services run on a fixed route and schedule, but unlike typical fixed-route services, passengers can request a deviation or a special stop up to 1/2-3/4 of a mile from the regular route. In this way, flex-route services also help improve first- and last-mile connections, though it is not as direct as other solutions. Flexible service in lower-density areas has existed for decades, often referred to as traditional dial-a-ride services, as transit agencies have sought a balance between serving customers and limiting the extent of fixed routes. In the past, flexible transit services could be limited by the hassles of advanced scheduling and insufficient customer communications. Today, technology advancements have created new types of flexible route transit business models. The addition of flexible routing is a potential mobility solution that can be implemented in low-density areas or where gaps in development patterns or pedestrian infrastructure exist.

Mobility As A Service

Mobility as a Service, or MaaS, represents another component of a comprehensive MOD approach to meeting community needs. MaaS focuses on providing people within the community with a comprehensive ‘portfolio’ of mobility options, generally through their internet-connected device (i.e.- smartphone). While there are few successful examples worldwide of this concept in practice – Pittsburgh is likely the leader in the U.S. at present with its MOVE PGH program (see https://pittsburghpa.gov/domi/emerging-mobility) – the overarching concept is to bring together diverse mobility services to provide more choices so that people have a full range of options available. For example, a traveler may be able to open a single app on their smartphone and, based on the specific conditions and travel needs at the time, select and pay for a:

- Transit trip (with real-time departure, arrival and vehicle occupancy information provided)
- Transit trip with multimodal connections on either end (for example, book a scooter ride to the nearest bus stop and a bike ride to complete their journey after departing the bus)
- Ridehail trip via Uber, Lyft, other TNC or local cab company
- Flexible Vanpool
- Bikeshare
- Scooter
- Other micromobility device

With MaaS, the intent is to provide the user with comprehensive information so that they are empowered to identify and choose the most appropriate means to gain access to their desired destination, with features such as artificial intelligence facilitating the selection process. For example, a user may let the app know their price sensitivity, the urgency of the particular trip and degree of certainty required for the arrival time (a work trip may have very different parameters than a shopping trip, for example), their weather sensitivities (travelers may, for example, be willing to ride transit except in rainy conditions) and other factors. All of this data is used to offer up the specific travel options that best match the unique requirements of the user at a particular point in time. Additionally, the app would bring in other information, such as congestion levels along the desired path, special events that may affect travel time, and more all to empower the user to select the mode(s) that work best for their specific travel needs.

All of these technology-empowered mobility tools are oriented towards providing better, more useful mobility and access for customers. While they can be developed on their own, they also can become core components of a comprehensive mobility management approach, as discussed in more detail in the “Multimodalism and Mobility Management” section below.

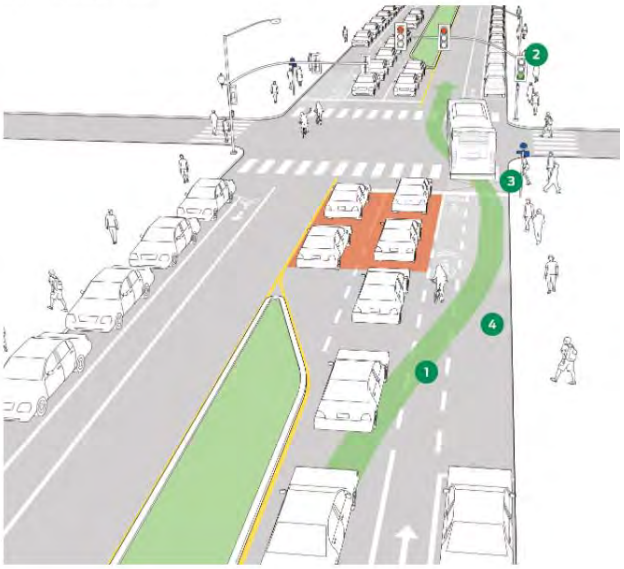
Transit Priority Treatments

Transit agencies across the country are increasingly recognizing that their ability to retain and grow ridership is constrained if their buses are stuck in traffic alongside other vehicles. And communities are also recognizing the inherent inequity of giving the same priority to a single-occupant commuter as is given to a 40-foot bus carrying dozens of riders. In response, there has been a proliferation of projects and programs designed to help transit services improve their speed and reliability, with the dramatic reductions in overall travel during COVID-19 providing an unprecedented opportunity to reallocate scarce right-of-way without the backlash that was

typical beforehand. Transit Signal Priority (TSP), in conjunction with bus-only lanes and queue jumps, can improve the transit riding experience and create more efficient operations. TSP describes technology that utilizes wireless communication and vehicle location to allow buses to travel through signalized intersections quickly.

By either extending the green time or changing a red light to a green light, TSP automatically operates to keep buses on time and reduce delays. Per the National Association of Transportation Officials (NACTO), "Active TSP can reduce transit delay significantly. In some cases, bus travel times have been reduced around 10 percent, and the delay was reduced up to 50 percent at target intersections."[2]

Figure 2: Queue Jump Example



Queue jump lanes are a design treatment that allows buses to bypass stopped traffic through a short, dedicated transit lane and enter traffic flow at an intersection in a priority position, thereby reducing delay. Queue jump lanes can provide a beneficial transit advantage at congested intersections, reducing delays and improving service reliability. However, depending on congestion levels, buses may still experience a significant delay as they approach the queue jump access point. An illustration of a queue jump from NACTO can be seen in Figure 2.[3]

While TSP and queue jumps provide significant advantages for transit under the right circumstances, the gold standard for transit priority treatment is to provide transit vehicles their own dedicated space within the right-of-way. Travel time savings and major reliability improvements are possible with bus-only lanes, and in turn, can change the perception of public transportation within a community as people become aware of the benefits of using transit instead of being dependent on personal automobiles. In 2019 the USDOT approved innovative red pavement for use in bus-only lanes, a tactic that helps minimize encroachment by other vehicles and that also provides an important and highly visible indicator that transit matters. While this method may require reallocation of roadway space from general-purpose traffic and/or parking, it can offer very significant transit benefits by effectively eliminating congestion for transit vehicles, especially during peak travel periods.

Figure 3: Dedicated Center-Running Transitway Example[4]

[2] https://nacto.org/publication/transit-street-design-guide/intersections/signals-operations/active-transit-signal-priority/
[3] https://nacto.org/publication/transit-street-design-guide/intersections/intersection-design/queue-jump-lanes/
[4] https://nacto.org/publication/transit-street-design-guide/transit-streets/two-way-streets/center-running-transit-street/#

Pandemic Related Early Findings

The transit riding experience, like so many of life's experiences, was thrown into disarray in early 2020 with the COVID-19 global pandemic. A drastic change in travel demand was seen when students began learning remotely and a large portion of the workforce began working from home. This decrease in travel demand was paired with severe economic challenges as companies experienced substantial layoffs.

As a response to the sudden COVID-related stay-at-home orders, TARC, like many transit agencies around the country, reduced service offerings and suspended some routes. Ridership dropped significantly. As the demand for transit service slowly returned, TARC gradually restored a revised service offering for riders. In August 2020, TARC discontinued a total of fifteen routes, including two local routes, three circulators, and ten express routes. The agency also made minor changes to eight existing routes.

Due to the pandemic, there is increased recognition of the importance of access to reliable transit for essential services and workers. Transit providers worked hard to continue to offer riders a wide variety of mobility options seven days a week to allow continued access to jobs and other necessary destinations. Against this backdrop, uncertainty is prevalent. Through it all, transit has and will continue to be the backbone of economic opportunity for those who need it most and those essential workers who drive society forward. Early indications highlight all-day routes on main corridors continue to maintain ridership levels better than traditional commuter routes to office jobs in central business districts. Weekend service is essential to deliver nurses, grocery clerks, and warehouse workers to their jobs seven days a week. In contrast, a traditional suburb to the downtown job center, weekday peak-period-oriented services may no longer have sufficient demand to merit investment relative to other agency and community priorities. These trends will merit continued monitoring as vaccination rates increase and the pandemic recedes, and new technological tools that provide near real-time monitoring of travel patterns within metropolitan areas can be used to support service planning efforts. Online data platforms such a Replica, Streetlight Data and others can provide a host of data that agencies like TARC can mine to gauge shifts in travel behavior and other relevant activity patterns.

Just as the pandemic surfaced new and different travel patterns and mobility needs, so too has it called out the need for public transportation providers to effectively speed up their ability to respond with service adjustments. Pre-pandemic, many transit agencies would adhere to a rigid pattern of service changes at two, three or four specific times per year, each with a multi-month process to support it. In contrast, the pandemic essentially forced a compressed process, in

some cases resulting in service adjustments moving from idea to implementation in a few short weeks to address ridership changes, immediate service needs such as enhanced access to vaccination sites, or bus operator shortages. There is a legitimate concern that a tighter timeline can compromise an inclusive public engagement process and related Title VI analysis and service equity evaluations. However, many transit agencies also found that they could, with sufficient prompting, overcome conventional wisdom and "that's the way we've always done it" mindsets and instead be more responsive and innovative.

The COVID-19 epidemic poses unprecedented challenges and unique opportunities for transit agencies nationwide. Simply reverting to the old status quo will not advance the role of public transportation or the many economic, sustainability and equity benefits that communities demand in the post-COVID-19 environment. The magnitude of change can be imposing and confusing, yet these challenging times create space for new ideas and advance new programs and policies.

Longer Term Trends/Possibilities

AV Shuttles

Autonomous vehicles are equipped with sensors that help them navigate their surroundings and foresee upcoming roadway conditions. Vehicles with fully-automated systems are expected to improve roadway safety and potentially improve efficiency. In a transit setting, autonomous vehicles have the potential to improve mobility, service efficiency, and service effectiveness.

Autonomous microtransit is emerging as a new technological advancement and has been piloted around the world by many companies such as EasyMile, Navya, and 2GetThere. The feature offers abundant potential for on-demand, flexible microtransit service that can scale up or down based on demand to serve customer needs, potentially with much lower costs. To complement existing transit systems and resolve first- and last-mile barriers, autonomous shuttles have been initially deployed in areas where lower-speed operation is possible and operational parameters can be managed to simplify requirements. Moving forward, autonomous microtransit will continue to evolve, potentially offering transit agencies a new mobility option to deploy as a complement to their primary fixed route network.

Figure 4. Nayya Autonomous Shuttle

Driver Support Technologies

Connected vehicle (CV) applications can be used to greatly improve the safety of transit operations. While some technologies, such as the transit signal priority treatments discussed above, connect to a central hub and aim to improve the performance of the transit system as a whole, others are designed to directly assist individual transit vehicle operators with potential conflicts in real-time.

Pedestrian in Signalized Crosswalk Warning and Vehicle Turning Right in Front of Bus Warning are two examples of CV applications specifically designed for transit operations. Pedestrian in Signalized Crosswalk Warning is a vehicle-to-infrastructure (V2I) safety application that warns transit operators when there is a pedestrian in a signalized intersection that is along the vehicle's route. The Vehicle Turning Right in Front of Bus Warning is a vehicle-to-vehicle (V2V) safety application that warns bus operators when other vehicles go around the bus to make a right turn as the bus departs from a transit stop. These applications rely on sensors placed around the transit vehicle and on the roadside to monitor vehicle and pedestrian activity. These sensors do not require active monitoring but use radar or similar technology to scan the areas of potential hazards. If there is a hazard, the operator is notified. Similarly, an audible warning is provided to notify pedestrians and cyclists when the vehicle makes a turn. On-vehicle technologies such as these can benefit transit operators by providing early notification of potential conflicts with pedestrians or other vehicles.

Automated Buses and Bus Rapid Transit

While the realization of fully autonomous full-sized buses operating in a mixed-traffic environment remains tenuous, transit agencies are beginning to explore the potential for bringing autonomous technology to fixed-route transit in more controlled environments. As one example, bus yard operations, which typically require staff to drive buses between servicing, fueling and washing functions, may be among the first areas to move to automated operations as the environment within a confined area can be more readily managed. For revenue service, the initial opportunities may be most promising for bus rapid transit corridors operating in dedicated rights-of-way. By physically separating the transit vehicles from general traffic and minimizing or eliminating conflict points, autonomous technology can potentially be put into operation more quickly and with it, the benefits to service quality, reliability, and cost savings can be realized sooner.

Collaboration and Partnerships

It is essential to work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for economic development around transit services, a strategy referred to as transit-oriented development. Partnerships with mobility providers allow the reach of transit to be significantly expanded. A focus on multimodal travel has become increasingly important as travelers seek convenient options for first- and last-mile connectivity. This section discusses various types of collaboration and partnerships that have proven to move transit agencies forward.

Transit-Oriented Development

Transit-oriented development (TOD) is the establishment of high-density, mixed-use developments within proximity to transit stations, creating an environment that leads to increased transit ridership, improved rider experiences, and increased pedestrian and cyclist safety. TOD can transform a neighborhood around a transit station into a community asset that enhances the lives of many. These developments aim to support the creation of employment centers and other economic development hubs, as well as provide access to affordable housing. Several transit agencies have added an equity focus to their TOD efforts in recognition of the gentrifying effects that TOD developments can have. This has led to the rise of the term “Equitable TOD”, or ETOD. This emphasis is shown in the graphic below from Capital Metro in Austin, Texas.

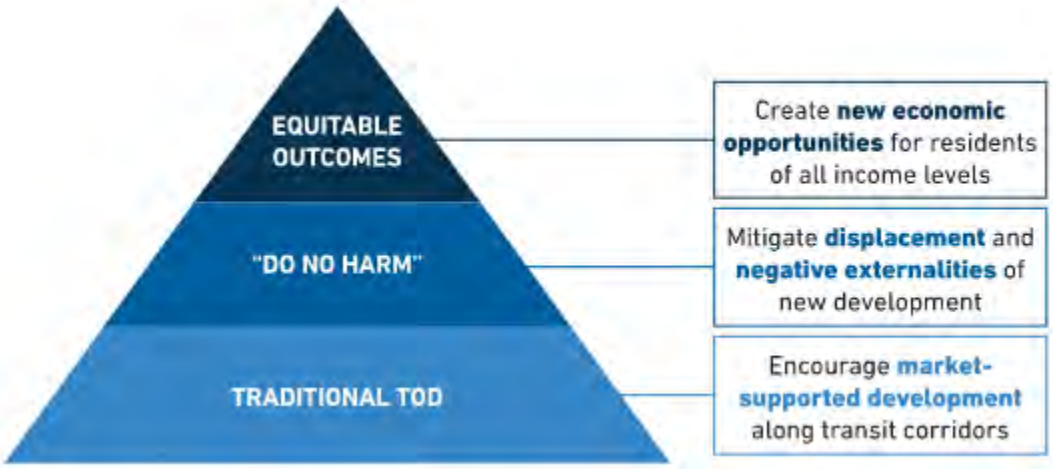


Figure 5: ETOD Desired Outcomes[5]

Agencies such as TARC should consider creating partnerships with local jurisdictions, regional agencies, local businesses, and other stakeholders for transit-oriented development planning and implementation at transit stations and along main corridors. Community and partner support is essential to develop land near transit services in ways that support transit use. Among a range of activities transit agencies and their partners can employ to facilitate TOD are the following:

1. To assess opportunities, many transit agencies begin by conducting an assessment of their owned properties, and potentially other publicly owned lands in transit-rich areas, to determine if joint development opportunities exist to derive revenue and build ridership.
2. Another approach is to conduct an analysis of high-ridership station areas to assess their current state of transit-supportiveness and opportunities for future TOD. This inventory can be used to collaborate with the jurisdictions that control land use and zoning to create a basis for changing the entitlements on key parcels in ways that support TOD.
3. Several transit agencies have also found that by developing TOD guides that can then be shared with property owners, local jurisdictions and the development community they can increase interest in TOD and spur new TOD projects.

[5] https://www.capmetro.org/plans-development/etod

Technology

While it is tempting for transit agencies to pursue new technologies, many hard-earned lessons are pointing to a need to think comprehensively about the impacts before jumping aboard the latest industry trend. For example, sufficient infrastructure both in the field and back-office is often necessary to successfully deploy the technology. Infrastructure requirements can include power, access to traffic signal cabinets, and transit stop technology. Infrastructure systems are often closely interwoven with communications systems and may include back-office servers, storage, switches, routers, and network appliances. Security for IT infrastructure needs to be accommodated as well, in addition to cloud resources that are increasingly essential elements of infrastructure systems. By understanding all components, an agency can guide an investment strategy that addresses current and upcoming needs.

A transit agency must have sufficient staff resources to manage, procure, monitor, and update technology. Internal staff resources include an IT department that can work closely with operations, planning, finance, legal, and other departments to ensure integrated and seamless connections across the agency. If staff resources are not present or are not technically skilled, then multiple agencies or governments can pool resources or outsource IT support. While some new technologies require fewer technical skills and less oversight, such as a third-party trip planner, other technologies such as farebox upgrades require significant time and effort. Agencies should assess whether a high or low level of staff resources is needed to deploy a given technology. In addition, consideration should be given to potential partnerships that could improve the effort.

Communications

Technology deployment requires communication systems that are integrated and provide the foundational support for the technology. Communication systems are required for almost everything a transit agency does. Communication systems between buses, drivers, Transportation Management Center, and customers, for example, can include fiber-optic cables, radio, cellular technology, Wi-Fi, dedicated short-range communications, automatic vehicle location, and more. Communication systems are regularly getting faster and able to communicate more information, allowing transit agencies to achieve efficiencies and enhanced service.

In recent years, improved communication is one of the biggest innovations in transportation. Information at people's fingertips has become a standard of modern life for many people across all facets of life. Transportation apps from private providers such as Uber, Lyft, or numerous others provide real-time information about trip conditions, vehicle locations, wait time, and total trip time. Service changes and special events are regularly occurring events that can upend travel for customers, so both advanced communication as well as real-time information is important. With a majority of transit riders having smartphones, improvements to agencies' apps can include alerts to affected customers who travel on a certain route or are located within a particularly affected geography. Any improvements to the app should be accompanied by traditional ways of communicating to customers through notices at transit stops as well as

announcements on transit vehicles. Communication protocols will improve customer confidence in a transit provider's services.

Multimodalism and Mobility Management

Transportation options have multiplied like never before over the past decade, with new providers emerging frequently. Uber and Lyft have become the predominant transportation network companies (TNCs), offering relatively affordable (due in part to subsidization in hopes of capturing market share) trips at passengers' fingertips on their smartphones. However, rising per trip costs within the past year may indicate shifts in the economic viability of the TNC business model. Opportunities in micromobility such as scooters provide new ways to accommodate short trips through dockless rentals from companies such as Lime and Bird. And the continuing advancement of e-bikes, both for purchase and through bike-share systems, is leading to a growing recognition of their role as an important part of the future of urban mobility. These new mobility opportunities are sometimes viewed as partners to traditional transit agencies but can also be viewed as competitors in some ways. Bicyclists, scooter riders, pedestrians, and transit riders are often a mix of the same people. Effective partnerships around the country have maximized the benefits of the flexibility and convenience of new mobility companies while minimizing the negatives.

Micromobility

For many decades, we have relied on a limited set of travel modes and vehicle types. The personally owned automobile has become vastly dominant in most cities followed by buses, trains, bicycles and walking. For the delivery of goods, trucks of various sizes eventually carry almost everything that we use. Now we are seeing the introduction of different vehicle types – scooters, e-bikes - and use patterns that are impacting traditional transportation modes.

Micromobility is typically thought of as smaller personal transportation devices that are part of a shared network. These docked and dockless bikes, e-bikes (bikes with electric assist motors), and scooters function in different ways than other more prevalent modes such as cars and buses. They are small in size which allows people to increase the capacity of roads. While there have been concerns over these devices being left throughout the public ROW and private property, they require a small fraction of the storage space needed for the equivalent number of automobiles. In addition, the shared use model provides another option that doesn't require a round trip for a specific vehicle, freeing consumers to switch modes at will. While personal bicycles certainly fit into this broad category, using a personal bike means that you have to manage the location of your device at all times. Shared use micromobility allows each leg of a journey to be considered independently so that the most appropriate option can be used based on individual needs and current conditions.

Figure 6. Shared Micromobility Options Include Bicycles and Scooters[6]

One goal of increased micromobility usage is the potential to deal with the first-mile/last-mile concerns that often make it difficult for people to effectively use and access modes like transit. Micromobility also presents opportunities to reduce car trips and gain more roadway network capacity, particularly when paired with a robust transit network.

In only the last few years, scooters have been introduced to cities across the nation. In some cities, hundreds or thousands of scooters suddenly appeared on the streets. Ridership highlighted that these scooters were immediately embraced by many users even while giving heartburn to cities that were forced to scramble to create policies and practices to deal with the negative aspects. The speed with which scooters appeared in many cities indicates how quickly new changes in transportation can now occur.

Mobility Hubs

Providing better options for first-mile/last-mile mobility at transit stops can expand the catchment area of each stop and serve transit riders with better connectivity to their destinations. Similar concepts have included shared mobility options, such as electric scooters or car-share, while others have used secure bicycle storage as a way to encourage transit usage. To be effective, dedicated multi-modal routes should be available to travelers to ensure safety to and from the stop. While a digital platform can connect information and data about the available mobility options, mobility hubs provide the physical location where those modes intersect, better connecting trips throughout the region using multiple modes. This has been an emerging concept in the world of shared mobility, with major cities across the United States, Canada, and

[6] https://medium.com/sidewalk-talk/seeing-a-big-future-for-micromobility-6db21140bcd8

Europe launching programs to better connect transportation options in their cities. A rendering of a mobility hub is shown in **Figure 8**.

Figure 7. Visual Depiction of a Mobility Hub.[7]

A mobility hub based around transit lines eliminates the friction often associated with changing modes. This concept also solves one of the issues cities have experienced with the introduction of the dockless micromobility options mentioned above by allowing an available area for parking, charging, and storage of vehicles that provides an easier way for governments to manage the deployments. The creation of mobility hubs is also an opportunity to expand pedestrian, cycling, and personal mobility options on streets throughout the region. The modes present at the hubs must have the ability to navigate efficiently and safely to their destination, meaning work may need to be done to support additional mobility infrastructure to better serve the community. Additional stakeholders can be brought into the program including civic groups, art groups, and designers to create unique, branded, and easily-identifiable areas that can be immediately recognized as a mobility hub. These hubs can be ready-made testing areas for new and advanced mobility, with a built-in group of travelers to serve. Hubs can also allow the facilitation of pick-up and drop-off services that would be well-suited to autonomous mobility as a service (MaaS)/transportation as a service (TaaS) system that functions like a TNC or taxi service.

[7] https://mobility-as-a-service.blog/mobility-hubs/

Mobility Management: The Complete Trip Approach

A complete trip approach supports the planning and payment (where applicable) for multimodal travel. This can include walking, cycling, transit and paratransit, bike-share, municipal parking, dockless eBikes and eScooters, carshare, TNCs, and taxis. Cities and transit agencies throughout the world have begun to develop systems that combine multiple transportation modes under one umbrella application that offers the ability to plan trips across multiple modes and coordinate payment between those modes into one transaction. For users, this means the ability to access all transportation options without the need to download multiple apps, and the ability to compare different trips based on different criteria. For example, a user can filter trips by the fastest trip from origin to destination, the least expensive, modes that are accessible to people with disabilities, those that have the lowest carbon footprint, or those that cater to a traveler's individual needs. Most importantly, this approach provides transparency and an easy way to understand all the options at a traveler's disposal.

Some of the basic functionality that has been observed in different applications of this concept within different cities often include the ability to:

- Allow a traveler to input an origin and destination into the app and see the available mobility options for the trip
- Compare options between available trips, such as ETA, total travel time, cost, etc.
- Combine modes for a trip (i.e., transit combined with a bicycle rental)
- Consolidate payment among different modes into a single payment platform
- Incorporate ticketing or digital access for available modes (digital tickets for transit, codes for shared mobility)
- Show real-time information for available modes, such as bus locations or the locations or availability of shared modes
- Allow payment of parking

The complete trip concept requires the coordination of a range of regional stakeholders, including all participating mobility providers and service providers operating in the region. The establishment of a friction-free mobility system for payment aims to create an equitable way to access and evaluate transportation options for visitors and residents, highlighting an innovative approach to promoting mobility choices. In turn, the synergies such a portfolio of mobility options can provide offer a compelling alternative to auto ownership that exceeds the utility of the individual components by themselves. As transit agencies consider their future role and position within the mobility and access ecosystem, serving as the mobility manager is increasingly gaining attention.

Summary

The successful transit agency of the future will be customer-focused and oriented toward a more comprehensive approach to providing mobility solutions. Immediate access to information and seamless mobility will be hallmarks of the future transit rider. Partnerships with other public agencies and collaboration with private partners will be key to creating fast, frequent services

across the mobility spectrum, likely with a robust network of high-frequency, safe and reliable transit routes as the ‘trunk’ of the system.

The region’s residents and businesses will benefit from concerted efforts on the part of public agencies to break down traditional silos and institutionalize partnerships as a priority. The pandemic has highlighted the essential workers delivering transit service day in and day out. By advancing a framework for a nimble agency backed by a workforce that is valued for its essential role, transit agencies will be ready for the inevitable future evolution of mobility that is yet unknown. Technology continues to shape the future of transit. To future-proof transit services, agency leaders should consider evolving industry trends and plan for the increasing role of technology at the core of the transit agency of the future.

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DRAFT

Investment and Funding Strategies

TARC TOMORROW

LONG RANGE PLAN 2040

February 2022

2040 Long Range Transportation Plan

tarc Tomorrow

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TARC's Financial Condition Today

TARC has long been challenged by funding constraints that limit the quantity and quality of service it can provide to the community. Like virtually every transit system in the country, the past two plus years have been particularly challenging for TARC as the onset of the COVID-19 pandemic resulted in major ridership decreases, affecting revenues and raising substantial hurdles in terms of being able to plan for the future. Fortunately, initial projections about a truly devastating combination of ridership losses coupled with a major economic impact as a result of an economic slowdown did not come to pass for two main reasons. First, the early fears of deep economic impacts from the pandemic were not fully realized in Louisville or nationally. Second, the federal government approved two sizeable stimulus packages (CARES and CRRSAA) that proved to be a critical financial backstop for transit agencies nationwide, including TARC. As a result, while TARC's financial condition remains challenging, there appear to be opportunities for growth within the next five years and beyond.

TARC Funding Overview

TARC, like most transit agencies of its size in the U.S., relies on local taxes for the majority of its revenue stream, supplemented by passenger fares and a mix of federal and state funding sources. TARC's primary revenue source is the Mass Transit Trust Fund, or MTTF, which is funded by an occupational tax within Jefferson County. Funds from this source represent just over half (53%) of TARC's operating budget in the FY 2022 budget, with 31% expected to come from federal sources, five percent from farebox revenues, one percent from state sources and the balance of mix of special fares, advertising and miscellaneous sources.[1]

All told, TARC's FY 2022 operating revenues are expected to total to approximately $64 million, while operating expenses are estimated to be just under $100 million. The balance is addressed through three sources: the use of capital funds that are eligible for reimbursement (a common practice for transit agencies seeking to leverage their federal funds), approximately $13 million in federal funds through the CARES Act and another $18.2 million in funding through the CRRSAA Act.

Near Term Financial Considerations

Before turning to potential funding and financing strategies that can support TARC's mid and long-term needs as identified in TARC Tomorrow, this section provides an overview of some nearer term considerations that may have an impact on the TARC Tomorrow Long Range Plan.

- **Loss of one-time CARES and CRRSAA ("Stimulus") funds**- With the large reductions in system ridership that affected transit systems nationwide as a result of COVID-19, along with in some cases a drop in tax revenues, the federal stimulus funds that were provided to transit agencies proved to be a critical backstop. In TARC's case, these

[1] https://www.ridetarc.org/wp-content/uploads/2021/06/Fiscal-Year-2022-Budget-and-Annual-Report-Final-Draft-for-April-27-2021.pdf

funds are expected to be fully drawn down during the FY 23 budget cycle.[2] While there are many variables in play, there is a potential concern that in FY 24, TARC could find itself faced with a very challenging financial situation with expenses exceeding revenues.

- **Ridership losses and resulting decrease in federal funding share-** Another complex situation exists around TARC's ridership recovery from the COVID-19 pandemic. Ridership is a major variable in the process for determining the amount of Federal Transit Administration (FTA) formula funds that the agency receives each fiscal year. Generally speaking, lower ridership equates to lower federal funding levels. The unprecedented and historic funding levels for public transportation included in the federal Bipartisan Infrastructure Law (BIL) (otherwise referred to as the Infrastructure Investment and Jobs Act, or IIJA) are very positive for TARC, but the specific effects on formula funds in a scenario where ridership continues to remain well below pre-COVID levels is another issue that merits careful attention.
- **State funding-** The BIL as noted above not only provides historic funding levels for transit, it also resulted in major funding increases for state transportation departments across the country. On a potentially positive note, this funding increase could translate into additional dollars being provided to TARC via the Kentucky Transportation Cabinet. While this is far from a certainty, it too bears watching in the near term.

Funding and Financing Opportunities

TARC Tomorrow is expected to focus on a projects, programs and initiatives recommended to move TARC forward, help the agency meet its goals and objectives and to improve transit services for greater Louisville. Having already identified funding gaps as one of the principal challenges facing the agency now and into the foreseeable future, it is clear that new funding sources will be required for the agency to enhance its role as a mobility leader. Where will these funds come from? Can financing strategies contribute to the overall approach? Which potential sources of additional funding have the highest likelihood of being feasible? This section will provide initial assessments that can be used to inform the more detailed recommendations that will be part of the TARC Tomorrow Long Range Plan.

Federal

The passage of the Bipartisan Infrastructure Law (BIL) in 2021 provides for the largest investment in passenger rail and public transportation programs in the nation's history, including new funding of $66 billion for passenger rail and $31.5 billion for public transportation, in addition to reauthorized and increased funding for existing programs. These funds will be distributed on a formula and discretionary basis to support state-of-good-repair investments; safety, accessibility, and capacity improvements; and expansion projects. The bill also brings policy changes that will broaden the eligibility of certain types of projects for federal money.

BIL appropriates $91.2 billion in funding for federal transit programs administered by the Federal Transit Administration (FTA), including $72.5 billion for federal transit formula programs, $8.0

[2] Per Jan. 25, 2022 meeting with TARC CFO Tonya Carter.

billion for the Capital Investment Grant (CIG) Program, and $10.7 billion for other transit discretionary grant programs over a 5-year period. In addition to the guaranteed $91.2 billion in funding, the BIL also authorizes an additional $17 billion, potentially providing up to $108 billion for federal public transportation programs[3]. The BIL funds authorized and appropriated to transit programs are summarized in Table 1 for the 5-year period of the bill, federal fiscal years 2022 through 2026.

Table 1. Federal Transit Program Funding ($ Millions)

Program Category	**5-Year Funding Total**
Transit Formula Programs*	
Urbanized Area Formula – Section 5307	$33,541
State of Good Repair Formula – Section 5337	$23,140
Rural Formula – Section 5311	$4,581
Bus and Bus Facilities Formula – Section 5339 (a)	$3,161
Elderly/Disabled Formula – Section 5310	$2,193
Fast-Growth State Supplement – Section 5340	$2,056
High-Density State Supplement – Section 5340	$1,823
Planning Programs – Section 5305	$966
Other Programs (FTA Administrative and other federal spending)	$1,028
Total Transit Formula Programs	***$72,489***
Capital Investment Grant Program – Section 5309	
New Starts	$4,400
Core Capacity	$1,600
Small Starts	$1,200
Expedited Project Delivery Pilot Program	$800
Additional authorized CIG funding (*subject to annual appropriation*)	$15,000
Total Capital Investment Grant Program	**$23,000**
Other Discretionary Grant Programs	
Low or No Emission Vehicle Program – Section 5339 (c)	$5,625
Bus and Bus Facilities Competitive – Section 5339 (b)	$1,966
All Station Accessibility Program	$1,750
Ferry Service for Rural Communities**	$2,000
Electric or Low-Emission Ferry Program**	$500
Pilot Program for Transit Oriented Development Planning – Section 2005(b)	$69
Total Other Discretionary Grant Programs	***$11,910***
Other Authorized Funding (*subject to annual appropriation*)	**$750**
Washington Metropolitan Area Transit Authority Funding	$750
Total Federal Transit Program	**$108,150**

[3] Bipartisan Infrastructure Law | FTA (dot.gov).

* Section numbers correspond to the section of Chapter 49 U.S. Code under which each program is codified.
** Half of the funding for Ferry Service for Rural Communities and Electric or Low-Emission Ferry Program is subject to annual appropriation

Each of the major categories federal transit program funding is described below.

Transit Formula Grant Programs

Funding for transit formula programs represents a 32 percent increase over the final years of the previous surface transportation authorization bill. This includes funding for several longstanding transit formula programs, including the Urbanized Area Formula, State of Good Repair Formula, Rural Formula, Bus and Bus Facilities Formula, Elderly/Disabled Formula, Fast-Growth State Supplement, and High-Density State Supplement programs.

Federal transit formula funds are distributed on the basis of specific legislated criteria, including population, transit passenger, transit capital asset, and operating statistics. The formulas for distributing funding through these programs are unchanged, although the BIL did increase the total amount of funding to be distributed. Most grantees will see significant increases in their formula funding but not all grantees will see the same percent increase due to the decennial census results that drive the formulas.

The Urbanized Area Formula and State of Good Repair Formula programs provide funding directly to transit agencies. The Rural and Elderly/Disabled formula programs provide funding to states. The Bus and Bus Facilities Formula program provides funding to states and transit agencies. Planning grants are provided to state and metropolitan areas.

Capital Investment Grants Transit Discretionary Program

CIG is FTA's longstanding discretionary grant program for fixed guideway transit capital expansion and capacity improvement projects, including bus rapid transit (BRT), commuter rail, light rail and heavy rail modes. The BIL advance appropriates $8 billion for CIG, with an additional authorized total of $15 billion over five years. Advance appropriated funds are apportioned to the CIG program funding categories as summarized in Figure 1. BIL incorporates a number of policy changes for the CIG program, as described below:

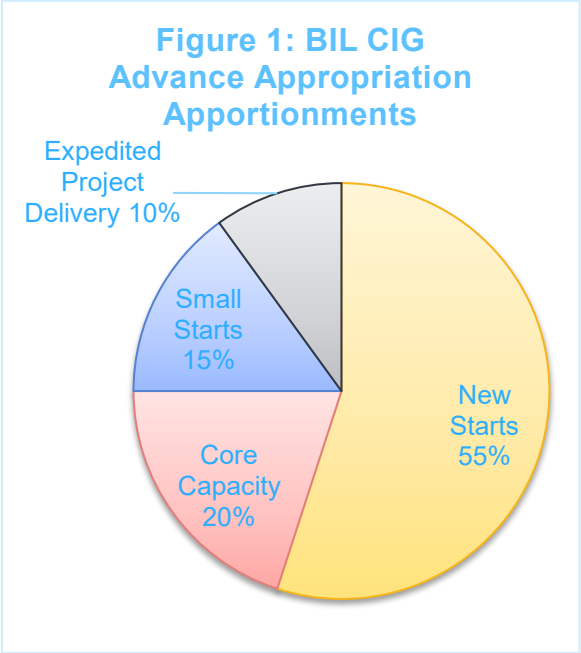

Figure 1: HDR Policy Brief, 2022.

- Increases the maximum eligible Small Starts project cost to $400 million (up from $300 million), and the maximum Small Starts grant to $150 million (up from $100 million). **This change is one of the more favorable for TARC due to the**

less stringent eligibility requirements for Small Starts that may be suitable for Bus Rapid Transit or other high-capacity transit projects.

- Continues to authorize the Expedited Project Delivery (EPD) Pilot Program, which provides a streamlined application process for qualified fixed guideway transit projects featuring a public-private partnership. The program caps the maximum federal grant for EPD projects at 25 percent of total project capital costs.
- Requires applicants to make progress toward meeting performance targets for asset management.
- Enables Program Bundling to coordinate simultaneous grants to multiple CIG projects in a region. This should facilitate grant applications for agencies with multiple projects. **While securing sufficient local match funding for multiple projects to advance together will be a significant challenge, the ability to 'bundle' projects may align well with the project recommendations that emerge from TARC Tomorrow.**
- Transfers responsibility for administering before-and-after studies, which evaluate the outcomes of funded projects, from FTA to the Government Accountability Office.

Other Transit Discretionary Grant Programs

The BIL includes several other transit discretionary grant programs, summarized below. FTA is required to prepare guidelines for administering new programs established under BIL.

- **Low or No Emission Vehicle Program:** This existing discretionary program provides annual funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required support facilities. BIL provides an advance appropriation of more than $5.6 billion over five years, a 6-fold increase in funding. Applicants for zero-emission vehicles grants must prepare a zero-emission fleet transition plan, including a workforce transition plan. **This program may align well with TARC Tomorrow in regard to a sustainability initiative and a shift to zero emission buses**.

- **Bus and Bus Facilities Competitive Program:** The discretionary component of this program supports rehabilitation and replacement of buses and bus-related equipment, as well as rehabilitation of existing or construction of new bus-related support facilities, transfer stations, and intermodal facilities. BIL provides an advance appropriation of nearly $2.0 billion over 5 years. At least 25 percent of program funds must support lower-emission buses and vehicles, including natural gas-powered buses and vehicles. At least 15 percent of funds are reserved for rural areas. Applicants for zero-emission vehicles grants must prepare a zero-emission fleet transition plan, including a workforce transition plan. **This program may align well with TARC Tomorrow in regard to a sustainability initiative and a shift to zero emission buses**.

- **Pilot Program for Transit Oriented Development Planning:** This existing discretionary program provides funds to local communities to integrate land use and transportation planning with a new fixed guideway or core capacity transit capital investment. Funded

plans must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations. BIL expanded grant eligibility to include TOD planning for site specific station areas. BIL provides an advance appropriation for this program of $69 million over five years. **TOD planning opportunities in collaboration with agency partners such as METRO may be an attractive candidate for funding through this pilot program.**

Other Transportation Grant Funding Opportunities for Transit and Rail Programs

The BIL includes a number of Federal-Aid Highway Program and other grant programs potentially eligible to support rail and public transportation projects. These are summarized in the Table 3. Funding recipients and eligible uses vary by program, and allocation approaches vary by state and region. Advance appropriations are summarized for the 5-year period of the bill, federal fiscal years 2022 through 2026. Some programs authorize annual appropriations in addition to these amounts.

Table 2. Advance Appropriations for Other Transit- and Rail-Eligible Federal Transportation Grant Programs ($ Millions)

Program Category	**5-Year Advance Approp. Total**
Surface Transportation Block Grant Program	$64,800
Congestion Mitigation and Air Quality Improvement Program	$13,200
Projects of National and Regional Significance (INFRA)	$8,000
Local and Regional Project Assistance (RAISE) Discretionary Grants	$7,500
PROTECT Formula Program	$7,300
STBG Transportation Alternative Set-aside	$7,200
Carbon Reduction Program	$6,420
National Infrastructure Project Assistance (MEGA) Discretionary Grants	$5,000
PROTECT Discretionary Grants	$1,400
Railroad-Highway Grade Crossings Programs	$1,225
Ferry Boats and Facilities	$912
Total Other Transit- and Rail-Eligible Federal Transportation Grant Programs	**$122,957**

The act includes provisions in Section 11130 to expand eligible uses of flexed highway funds to include BRT or dedicated bus lane projects including the construction or installation of traffic signals and prioritization, intersection design, on-street stations, fare collection systems, information and wayfinding systems, and depots. This should enable more BRT projects to flex highway funding to support construction costs.

Public transportation and rail projects are specifically eligible for MEGA and RAISE (Rebuilding American Infrastructure with Sustainability and Equity) program project funding, two

discretionary grant programs administered by the Office of Multimodal Freight Infrastructure and Policy to support projects that improve transportation infrastructure with significant national or local/regional impacts, respectively.

- **MEGA** (the National Infrastructure Project Assistance program) has an advance appropriation of $5 billion plus $10 billion in potential annual appropriations for a 5-year total of $15 billion. The program funds projects exceeding $100M in capital cost warranting significant federal investment. Projects must be cost effective and have stable funding/financing. The program funds project development, construction, and financing costs. The maximum grant is 60 percent, with maximum federal participation of 80%. Half of the funding is reserved for projects costing $100-$500 million.

- **RAISE** (the Local and Regional Project Assistance program) has an advance appropriation of $7.5 billion plus $7.5 billion in potential annual appropriations for 5-year total of $15 billion. The program funds projects to improve transportation infrastructure with significant local and regional impacts. It offers minimum grants of $1 million for rural areas and $5 million for urban areas. It requires USDOT to split funding 50/50 between projects in urban and rural areas.

The new **PROTECT program** (Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation) provides grants for resilience improvements through formula and competitive grants. It has an advance appropriation of $7.3 billion for formula grants and $1.4 billion over five years for discretionary grants to support the following:

- **Planning Grants** to develop resilience improvement plans, design, and development
- **Resilience Improvement Grants** to withstand weather events, natural disasters, or adopt to climate change
- **Community Resilience & Evacuation Route Grants** to protect emergency routes
- **At-Risk Coastal Infrastructure Grants** to protect highways from climate impacts

The BIL advances public transportation and passenger rail through investments that enhance safety and service reliability, bring facilities and other assets into a state of good repair, address resiliency and the climate crisis, and promote greater equity. The objectives are achieved through changes to existing programs, as well as through the creation of new programs. With these transformative changes, leveraging opportunities created by the legislation requires a deep understanding of the policies and processes that govern implementation.

Federal Financing through TIFIA: A Potential Project Acceleration Tool

In addition to the programs described above, the federal government offers local governments including transit agencies the ability to borrow funds at very low interest rates and over very long terms, a potentially powerful leveraging tool that can help expedite project development and delivery. The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance for qualified projects of regional and national significance, as well as technical assistance to help agencies like TARC explore and optimize funding and financing options.

Additionally, the TIFIA program provides support for borrowers as they assess the viability of public-private partnerships as an additional means of supporting project development.

Unlike the competitive grant programs like CIG defined above, TIFIA has a pool of more than $70 billion available for lending to entities that meet the eligibility criteria. The graphic below provides examples of TIFIA use by transit entities.

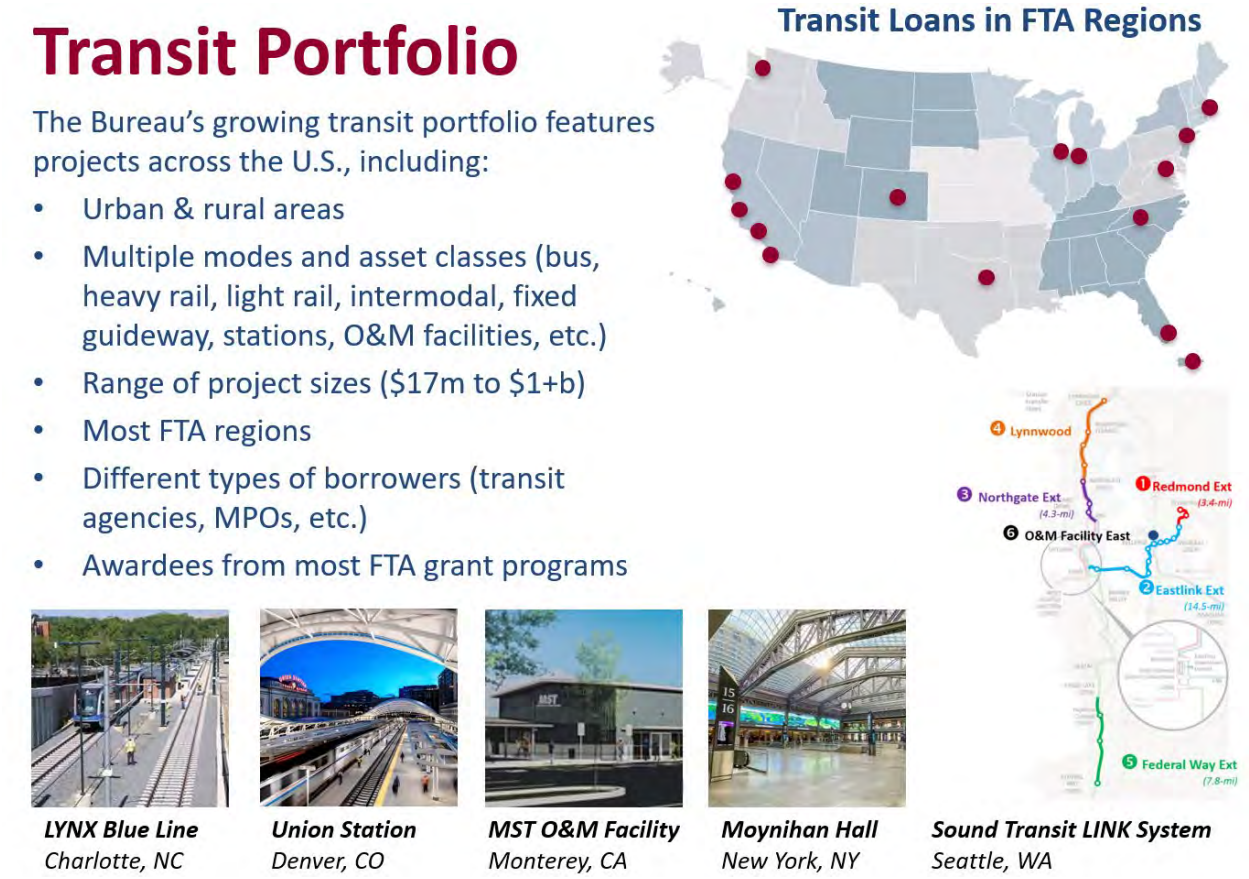

Figure 2: From presentation by Pete Mazurek, Division Chief Capital Projects, FTA Office of Planning and Environment, February 2022.

These loans can serve as critical 'gap-fillers' for transit systems and are often leveraged alongside FTA grants to advance capital projects. Additional examples are shown in a second graphic below.

Figure 3: From presentation by Pete Mazurek, Division Chief Capital Projects, FTA Office of Planning and Environment, February 2022.

While the TIFIA program has the obvious disadvantage of requiring repayment of funds, it can serve as a powerful source of financing and 'accelerant' for a broad range of potential project and programs that emerge from TARC Tomorrow.

State

TARC receives funding from both the State of Kentucky and the State of Indiana as a result of its service area encompassing portions of both states. Unfortunately, neither state's contributions constitute a significant share of the overall TARC budget as evidenced by the FY 2022 budget where the combined state funding constitutes approximately 1% of TARC's operating budget.[4] TARC did receive a substantial one-time funding influx of $4.7 million from the FY 2020 legislative session as part of Kentucky's share of the Volkswagen Environmental Mitigation Trust, which was established through a settlement between Volkswagen and states throughout the country. These funds helped TARC leverage federal dollars to replace older buses with cleaner and more fuel-efficient buses.

[4] Fiscal-Year-2022-Budget-and-Annual-Report-Final-Draft-for-April-27-2021

Additional opportunities may exist to increase state funding levels as a part of the overall funding mix in support of TARC Tomorrow and the agency should continue to work in this direction. As one example, actively promoting TARC Tomorrow and the projects, programs and initiatives identified upon completion of the plan can go far to demonstrate to state officials that TARC, and public transportation, merit increased funding in the future. A second prospect for state-sourced funding could come as a result of the BIL referenced previously. Not only did that legislation increase transit funding, it also substantially increased funding for state departments of transportation, which could potentially result in 'pass-through' funding becoming available for agencies including TARC in future budget cycles.

One additional item to note at the state level is the existence of the *Kentucky Public Transportation Development Fund* within the State Treasury. While at the time of this report's development the existence of funds is this potential revenue source is unclear, at a minimum it provides a legal mechanism by which future state funding could be provided to TARC.

Local

Local funding for TARC is derived from two primary sources: the primary revenue source is the Mass Transit Trust Fund, or MTTF, which is funded by an occupational tax within Jefferson County and that has been in place since 1974. Funds from this source represent just over half (53%) of TARC's operating budget in the FY 2022 budget. The Metro Revenue Commission collects the occupational license fees and net profit license fees for TARC in the Mass Transit Trust Agency Fund and remits those funds to the agency on a monthly basis.

The other source is directly from customers that use TARC's services through the fares that they pay, which the FY 2022 budget projected to total to $5.5 million.[5]

Potential for Increasing the MTTF

Kentucky Revised Statutes, Chapter 96A - Mass transit authorities, Section 96A.320 (Submission of proposal to establish program -- Voters -- Program financing) outlines how TARC may seek to increase funding levels through the MTTF. TARC's Board of Directors could vote to request the Metro Council to augment the existing occupational tax in any of three ways:

- Through a sales tax not to exceed one-half of one percent of gross retail receipts within the service area
- Through an ad valorem tax increase upon all taxable property within the service area
- Through an increase to the current occupational tax of an amount not to exceed one percent in total.[6]

If the Metro Council were to approve the recommendation from the TARC Board of Directors, the item would be subject to voter referendum. As the TARC Tomorrow plan is developed and

[5] Fiscal-Year-2022-Budget-and-Annual-Report-Final-Draft-for-April-27-2021

[6] Kentucky Revised Statutes § 96A.320 (2021) - Submission of proposal to establish program -- Voters -- Program financing :: 2021 Kentucky Revised Statutes :: US Codes and Statutes :: US Law :: Justia

projects, programs and initiatives are identified and prioritized, these potential funding sources will be assessed further for feasibility in the near and longer term.

Local Financing Options

Related to the above, Kentucky State Statute 96A.120 defines the permissible types of financing that TARC may use to develop its transit system, including general obligation bonds, revenue bonds, mortgage bonds, and bond anticipation notes. While there are challenges associated with each of these financing methods, they represent a relatively wide range of flexibility for TARC relative to many transit agencies nationwide that are much more constrained. TARC has also traditionally operated as a 'pay-as-you-go' enterprise, with no substantial debt. This is advantageous in many ways, but as transit agencies endeavor to grow their systems, it often becomes imperative to borrow to do so. A significant reason for issuing debt is that transit agencies that build up considerable reserves (for example, to support a major capital imitative) can easily find themselves the subject of political and public scrutiny for having a "war chest" that then becomes a target for reallocation.

Public-Private Partnerships and Other Alternatives

Public-Private Partnerships (P3) are collaborations between a public agency and a private partner to deliver a public service, project or facility that can maximize performance, minimize cost, mitigate risks, and speed timelines. The public and the private partner each plays a critical role where the skills and assets of each sector are optimized and potential pitfalls and rewards are shared.

P3s are typically long-term agreements between a public agency and a team of private sector partners on some or all of the planning, design, construction, finance, operation and maintenance of a project.

The Benefits of P3s take on many forms, including:

- Greater Creativity and Access to New Technologies or Approaches: Private firms can often introduce innovative approaches and technologies and take the risk on their performance.
- Improved Project Design and Performance: Private sector innovations can reduce construction, operations and maintenance, life-cycle repair costs.
- Performance Incentives: Improved project performance through accountability for meeting schedule, performance standards, service quality, state of good repair and other requirements, with penalties for failing to perform.
- Project Acceleration: Potential project acceleration through innovative financing.
- Reduced Risk to the Public Sector: Transferring certain risks, such as schedule, budget and performance to the private sector, which can manage them in a more efficient and cost-effective manner.[7]

[7] https://www.metro.net/about/public-private-partnerships/

Two areas where P3s have been used in transit are joint development of a transit agency's property and for large capital project financing and implementation. As TARC moves to implement TARC Tomorrow there may be opportunities for P3s to expedite project delivery schedules or otherwise achieve public benefits.

Summary

TARC, like many comparable transit systems, finds itself in a challenging position that can resemble a Catch-22. On the one hand, stakeholders want the agency to provide services for those most in need across the entirety of the service area. On the other hand, stakeholders also want TARC to be cost-effective and to provide high-quality, frequent and reliable service on major corridors that motivates citizens to shift their trips to transit instead of continuing to use private autos that impose significant environmental, economic and social costs. TARC's current funding levels do not allow for it to do both of these 'jobs' as well as many expect, and as a result, difficult policy decisions must be made between meeting the social service role of public transportation or the business-like and ridership maximizing role. Finding the right balance between these competing objectives is an ongoing challenge. Through the development of the TARC Tomorrow plan, the agency can work to build an effective case that more funding will not only allow the agency to better serve the community, it can also become an even more integral part of Louisville's quality of life.

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tarc Tomorrow