



Greater Cleveland Regional Transit Authority

Strategic Plan

FRAMEWORK FOR THE FUTURE

October 2020



The Greater Cleveland Regional Transit Authority (RTA) has partnered with the community to develop a Strategic Plan that will shape the agency to the year 2030. The Strategic Plan provides a guide for enhancing the customer experience and pursuing capital improvements over the next decade. The planning process included several pillar studies, technical analyses, and robust community engagement to build consensus and create a cohesive plan. The study highlights vision, goals, existing conditions, strategy identification, and recommendations. With a geographic focus on Priority Corridors in transit-oriented urban areas as well as job hubs across the region, the Strategic Plan points to seven key initiatives to create the framework for the future.

On October 27, 2020, the RTA Board of Trustees unanimously approved adoption of the Strategic Plan.

Customer Focused. Community Engaged.

RTA will be customer focused and community engaged in order to drive the region forward. This dual undertaking encapsulates RTA's need to focus on its service to its customers while also leaning into the larger societal conversations across the region. Customer Focused and Community Engaged highlights the individual and shared focus of RTA's vision for the future. Through safe, reliable, integrated, sustainable, and innovative transportation, RTA will deliver access to opportunity for individuals and the entire region over the next decade.



Planning Process

The planning process focused on delivering a 10-year Strategic Plan through creating understanding and building consensus.



Technical analysis combined with robust stakeholder and public input in order to proceed from a “blank slate” at the outset to recommendations at the conclusion.

Strategic Plan Goals

CUSTOMER FOCUSED



CUSTOMER EXPERIENCE

RTA will provide dependable, clean, fast, and seamless transportation that creates a positive experience for RTA customers.



EQUITY

RTA will continue to provide equitable transit services that benefit disadvantaged individuals and communities.



ACCESS

RTA will facilitate increased access to jobs, education, and civic life.



STATE OF GOOD REPAIR

RTA will enhance, preserve and maintain its infrastructure and assets.



FINANCIAL STABILITY

RTA will be a responsible steward of public funds by providing exceptional services cost-effectively.

COMMUNITY ENGAGED



COLLABORATION

RTA will work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for transit oriented development.



TECHNOLOGICAL INNOVATION

RTA will lead in its integration of new technologies and evolving mobility options to enhance the transportation experience for customers, RTA employees, businesses and visitors.



ECONOMIC PROSPERITY

RTA will be the transportation backbone that moves the economy forward and improves the quality of life of county residents by enabling economically sustainable regional land use and development and reinforcing investment in strategic employment and population centers.



TRANSPARENCY

RTA will instill public confidence as a well-run institution that is accountable to its customers, employees, and taxpayers.



ENVIRONMENTAL SUSTAINABILITY

RTA will reduce greenhouse gas emissions in the region by providing clean transportation and shifting travelers away from single occupancy vehicles.

Existing Conditions

As the goals evolved in collaboration with stakeholders and the public, the team also worked to pull several “Pillar Studies” together into a cohesive plan.

- **Economic Impact Study:** analysis to quantify the economic benefit RTA generates annually for the region.
- **Fare Equity Analysis:** study to enable RTA to better understand its ridership, and the relationships between changes in fares, fare structure, fare collection, ridership and revenue.
- **Rail Car Study:** comprehensive evaluation for heavy rail and light rail fleets.
- **Efficiency Study & Operational Review:** financial analysis and economic forecast.
- **System Redesign Study:** analysis of bus route data and public input on potential systemwide redesign alternatives.

In addition to input from the pillar studies, the team assessed transit needs through analysis of existing conditions and preliminary findings. RTA’s economic

impact is significant - \$485M on local employment & \$2.2 billion on Cuyahoga County property values - yet both longstanding and new challenges create difficulties. Decreasing ridership, population and job loss, and shifting job locations outward are some of the many challenges RTA faces.

The existing conditions assessment included History of RTA Planning Efforts; Planning History of Partner Agencies; Summary of Transit Services; Data Trends; Demographics of Riders; Priority Corridors; Capital Projects; State of Good Repair; Transit Technology and New RTA Technologies; New Mobility; and Emerging Technologies.

A peer review compared agencies around goals and key focus in light of national trends. These included agencies with multiple similar modes and characteristics (Denver, Baltimore, St. Louis, Pittsburgh) same region (Columbus), and national examples (TriMet, Phoenix).

Upon reviewing existing conditions, the preliminary findings assessment included a SWOT Analysis in which the study team assessed strengths, weaknesses, opportunities, and threats. Strengths and weaknesses are internal to the organization—things that RTA has some control over and can change. Opportunities and threats are external—things that are going on outside the agency. The following issues help frame the forces that impact RTA’s future.

Preliminary Findings: SWOT Analysis

STRENGTHS

- As a legacy transit system with robust history, local residents and businesses are aware of what RTA is. The brand recognition is high.
- Staff members have deep institutional knowledge.
- Rail lines and BRT services provide a backbone for additional system improvements.
- Past investments provide value to customers
- New leadership paves the way for innovative changes.

OPPORTUNITIES

- Job hubs drive transit ridership and the largest hub remains downtown where transit service is greatest.
- Partnership is increasing among public and private agencies on transportation issues.
- Disruptive technologies and business models can be harnessed to advance RTA goals.

WEAKNESSES

- Passenger experience is degraded by unreliability and a poor image.
- Infrastructure needs are not being met as highlighted by the breakdown of the Red Line in summer 2019.
- Ridership has decreased for several years.
- Technology adoption is slow compared with peers.

THREATS

- The region is losing population and jobs.
- Competition for travel service in urban areas is increasing with new options providing door-to-door service for relatively cheap costs to customers.
- Job locations are spreading across Cuyahoga County and the region.



Engagement

Robust and inclusive community engagement, with thousands of people across multiple methods and neighborhood-based activities, informed the Strategic Plan.

Engagement with stakeholders and the general public is essential to an inclusive planning process. A plan reflects the needs and desires of the community. The Strategic Plan and associated Pillar Studies engaged thousands of people through a variety of approaches. In conjunction with technical analysis, community engagement was the driving force for the Strategic Plan.

The approach to engagement included a multi-pronged strategy with multiple stakeholder committees and general public outreach. Through in-person meetings, online input, digital and in-person surveys, informal conversations at RTA vehicle facilities and public bus stops, formal presentations, children’s activities, and more, the study team engaged a variety of community members. Meetings with administrative staff as well as operations employees at RTA provided a diverse set of internal perspectives at the agency. Public meetings at locations where people already gather in their neighborhood provided opportunities to hear from people that would not usually participate in a strategic planning process.

Stakeholder Engagement

There were three periods of stakeholder engagement at the beginning, middle, and end of the planning process. The third stakeholder period occurred

virtually due to COVID-19 safety considerations. The organization of stakeholders focused on an Internal Stakeholder Group and External Stakeholder Group. The Internal Stakeholder group included meetings with internal RTA staff that provided input from representatives with diverse responsibilities from departments including planning, operations, marketing and communications, and finance. Meetings with external stakeholders provided input from representatives of the business community, educational institutions, Cuyahoga County, Clevelanders for Public Transit, Ohio Department of Transportation, community development organizations, Urban Land Institute, health representatives, civic institutions, and bicycle advocacy groups.

RTA Operations Employee Engagement

The Strategic Plan team recognized the importance of obtaining input from RTA employees to supplement the Internal Stakeholder group. Going to Operations employees to get input in person can provide multiple benefits on a Strategic Plan. Issues that might be overlooked are often revealed through such input. At the same time, an inclusive planning process is improved through outreach across the agency. The team obtained input from Bus Operators, Dispatchers, Maintenance, Street Supervisors, and others who are on the ground delivering RTA services every day.



Public Engagement

Public meetings, printed and online surveys, Facebook Live events, interactive meeting exercises, children's activities, and a Strategic Plan webpage helped obtain input from the community. The public provided input on issues and potential strategies.

The study team collaboratively identified approximately 49 potential strategies for input. Strategies were proposed to the public in meetings and through online engagement.

The top strategies identified were:

- Increase frequency of bus service on existing key routes, while maintaining existing coverage
- Identify additional funding to meet existing and future transit needs
- Better link people to jobs

Results also showed that the public wants better bus stops, new rail cars, better fare policies and technology, and collaboration to create transit oriented development. The public wants RTA to turn the page to a new day of engagement with customers and strategies that reflect the best of today's transit solutions. Community and stakeholder engagement delivered valuable input that was essential to the Strategic Plan's recommendations.



Considerations of 2020 Events

The transit riding experience, like so many of life's experiences, was thrown into disarray in early 2020 with the COVID-19 global pandemic. RTA took responsible actions that are national best practices.

In addition to safety measures, the COVID-19 pandemic has thrust an economic downturn upon Northeast Ohio and the world. Past economic recessions have had a long impact on Cuyahoga County, with challenging decreases in population, jobs, and transit ridership. These considerations drove RTA and all transit agencies into unknown territory as ridership has decreased on transit nationally and transit funding remains insufficient nationwide.

On top of COVID-19 and economic challenges, there has been a renewed acknowledgment of the importance of transit as an essential service in moving society forward. Calls to action for social justice have highlighted the challenges facing people of color. There is an increased realization of the importance of transit as an essential service for workers, students, and medical providers.

At the time of the conclusion of this Strategic Plan, the global pandemic continues.

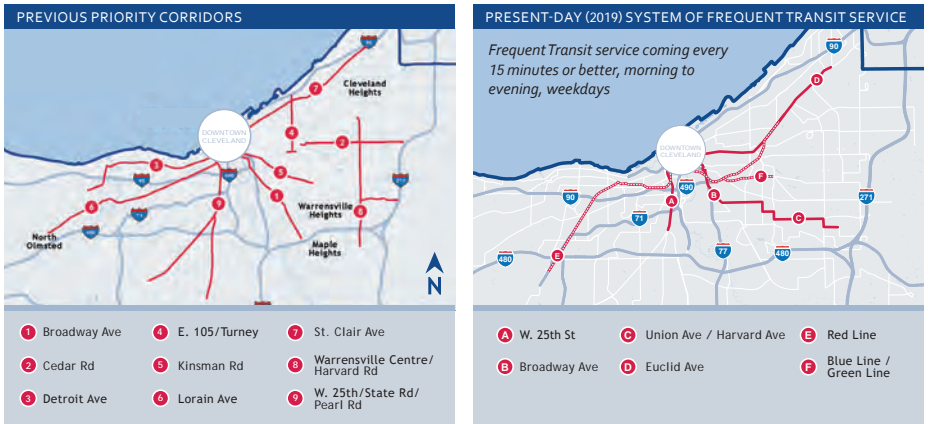
- There is uncertain travel demand for all modes
- Health concerns drive all aspects of life
- School remains remote for many students, from elementary school to universities
- Downtown commuting patterns have been completely disrupted
- Utilization and acceptance of working from home accelerates a previously growing trend

Against this backdrop, uncertainty is prevalent. However, scientific consensus is that the COVID-19 virus will be overcome in time. 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.

Recommendations: Priority Corridors

The geographic focus of these recommendations center on Priority Corridors. Priority Corridors highlight opportunities for capital investment in street infrastructure to improve bus speed, reliability, and rider convenience while enhancing adjacent transit-oriented development. The previous strategic plan identified several Priority Corridors that were recommended for investment. Priority Corridors brought focus to locations where transit-oriented development could be emphasized in partnership with local stakeholders. However, a review highlighted that there is a need to increase cohesion between infrastructure development & service frequency.

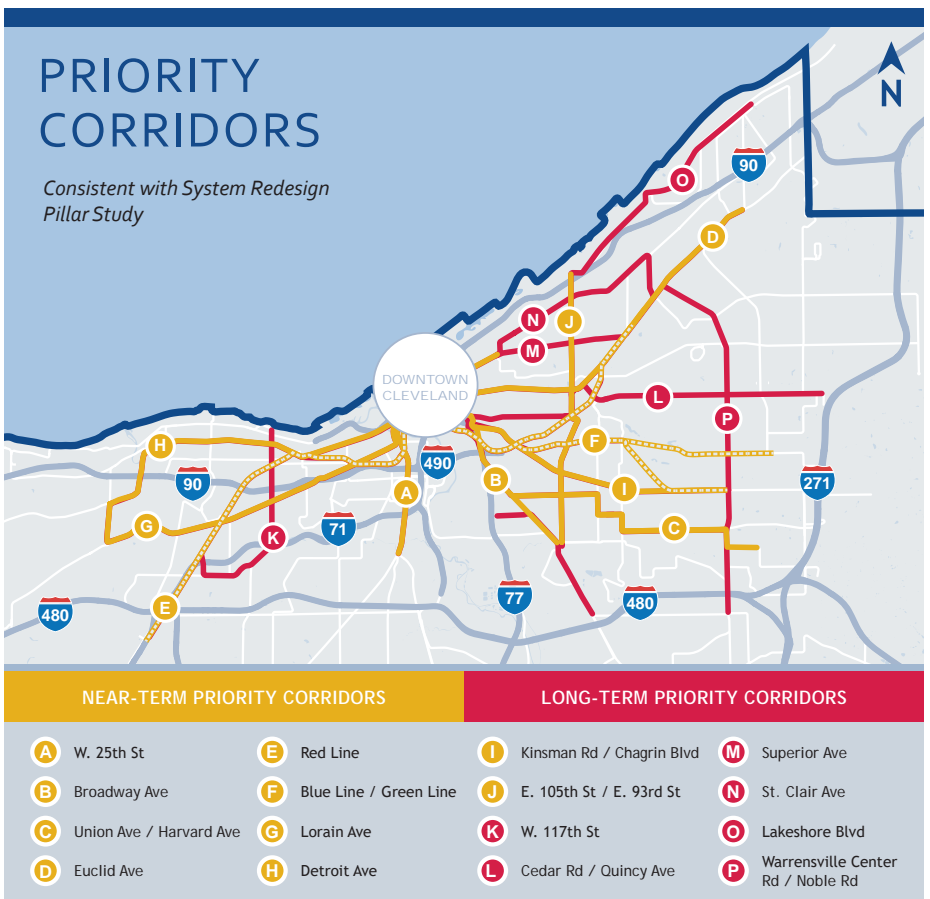
Updated Priority Corridors will provide a network of urban corridors with frequent service. The study team emphasizes connections among corridors to create a network and enhance consistency among pillar studies.



The recommended network of Priority Corridors includes:

- Focus on transit need of populations with lower incomes, lower educational attainment, & higher unemployment.
- Focus on places where transit works best and can help provide a leg up to those who need it most.
- Multiple connections to provide seamless transfers and shorter travel times.
- Data analysis to deliver equity and transit priority.
- Focus on partnership for transit-oriented development.

Priority Corridors focus on areas where transit inherently works best by connecting dense areas of residents and job locations. These corridors demonstrate a high propensity for TOD development.



Recommendations: Key Initiatives

Out of all the analysis and engagement, seven initiatives surfaced, providing a framework for the future to provide a guide for enhancing the customer experience and pursuing capital improvements through the year 2030. Each initiative includes timeframe, responsibilities, and outcomes as outlined in the full report. The seven initiatives are summarized in the following pages.

- 

Improve Where and When Buses Travel
Focus on a network of urban corridors with frequent service to support equitable access to opportunity.
- 

Engage with Emerging Technology, Data, and New Mobility
Connected vehicles, communications, mobility management, smart infrastructure, and workforce development will advance equitable distribution of technological innovations.
- 

Improve How Streets Function
Prioritize transit in street design to emphasize pedestrian access and reliable transit service.
- 

Address Funding Challenges
Public input revealed additional funding was a top concern. RTA serves more than a transportation purpose and is integrated into the shared success of everyone in the region.
- 

Improve How Customers Pay
Create seamless and equitable access to transit service that improves operations and enhances the customer experience.
- 

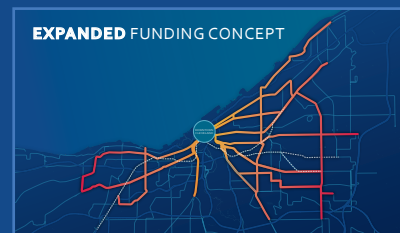
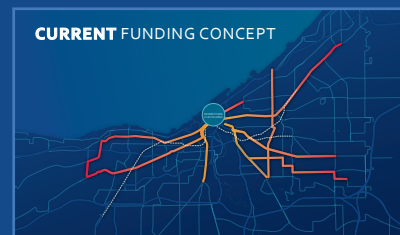
Partner to Support Vibrant Communities and Access to Job Centers
Forging unique relationships to focus on transit-oriented communities on Priority Corridors, while partnering to assess transit needs at outlying job hubs.
- 

Improve Passenger Safety and Comfort
New rail cars, zero emission buses, enhanced bus stops, and continued COVID-19 best practices will create a welcoming customer experience.

IMPROVE WHERE AND WHEN BUSES TRAVEL

- Begin to implement System Redesign
- Shift to the Current Funding Concept
- Expanded Funding Concept provides basis for future potential
- Focus on urban corridors with frequent service improves safe & equitable access to opportunity

RTA'S SYSTEM REDESIGN			
EXISTING SYSTEM	60% ridership	40% coverage	
CURRENT FUNDING CONCEPT ALTERNATIVE	65% ridership	35% coverage	
EXPANDED FUNDING CONCEPT ALTERNATIVE	70% ridership	30% coverage	



more availability



increased connectivity



higher frequency

IMPROVE HOW STREETS FUNCTION

- Prioritize transit in street design
- Allocate appropriate space for buses to travel
- Work with cities to enhance signal systems
- Increase fast and reliable service
- Support pedestrian friendly and transit-oriented development



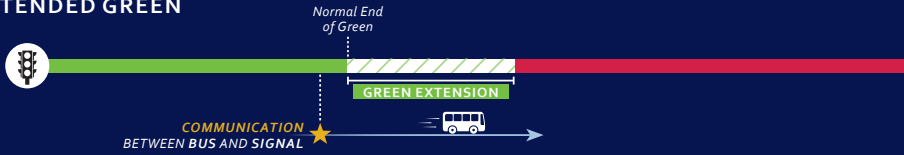
Photo Credit: streetsblog.org



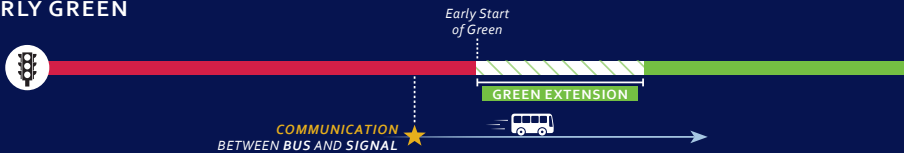
Photo Credit: <https://transcenter.org/publication/all-transportation-if-local/rewrite-the-rules-to-boost-growth-not-traffic/>

COMMON TYPES OF SIGNAL PRIORITY

EXTENDED GREEN

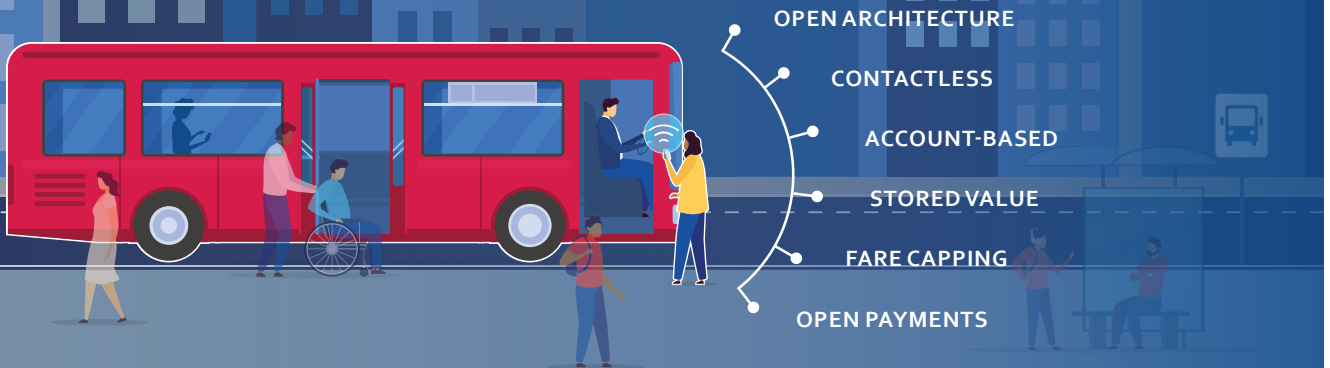


EARLY GREEN

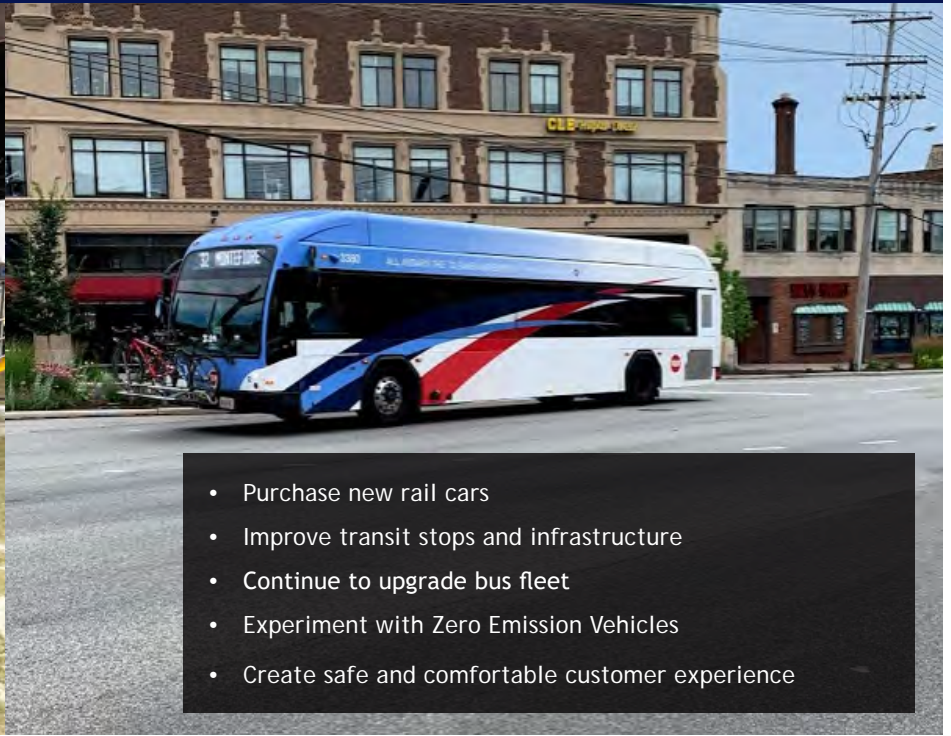


IMPROVE HOW CUSTOMERS PAY

- Implement recommendations from Fare Equity Analysis pillar study
- Change RTA fare collection to improve customer experience and better reflect best practices
- Seamless, equitable fare practices



IMPROVE PASSENGER SAFETY AND COMFORT



- Purchase new rail cars
- Improve transit stops and infrastructure
- Continue to upgrade bus fleet
- Experiment with Zero Emission Vehicles
- Create safe and comfortable customer experience

ENGAGE WITH EMERGING TECHNOLOGY, DATA, AND NEW MOBILITY



- Refocus using technology as way to improve the customer experience & equity
- Experiment with connected vehicles
- Improve infrastructure
- Enhance real-time info
- Invest in data security
- Adopt guidelines for partnerships with new mobility providers

ADDRESS FUNDING CHALLENGES



- Top issue during public input for the Strategic Plan concerned the necessity for additional funding to meet existing and future transit needs
- Backlog of state of good repair needs

PARTNER TO SUPPORT VIBRANT COMMUNITIES AND ACCESS TO JOB CENTERS



Urban job hubs

- Downtown and University Circle will experience improved job access through implementation of system redesign improvements and transit-oriented development partnerships.

Suburban job hubs

- Solon Cochran Corridor, Chagrin Highlands, I-77-Rockside, and Hopkins Airport area will experience improved job access through microtransit solutions in partnership with local business leaders and stakeholders.

Transit-Oriented Communities

- Walkable neighborhoods will be supported through partnership along Priority Corridors.










COLLABORATION FOR INNOVATIVE SOLUTIONS

Action Items

The Strategic Plan has identified 64 action items for implementation; 27 Short Term (2021-2022), 22 Medium Term (2023-2026), and 15 Long Term (2027-2030).

Priority Short Term Action Items

-  Provide service with a focus on equity - the Priority Corridors of frequent service include neighborhoods with high levels of poverty, joblessness, and vulnerable health populations
-  Implement sharing of open information pertinent to customers on public-facing online dashboard
-  Implement early system redesign wins that improve service while minimizing negative impacts
-  Implement and promote infrastructure spot improvements that improve service
-  Continue to advocate for funding needs and solutions among local, statewide, and federal partners
-  Improve communications about fare products and how to buy them
-  Establish stakeholder group around Solon job center to assess needs and feasibility of solutions



The following pages display prioritized action items. Prudent actions in the short term create the groundwork for bold improvements in the coming years. Together the Strategic Plan’s recommendations will be a catalyst for transformation in a rapidly evolving transportation future to the year 2030.

SHORT TERM (2021-2022)						
Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Provide service with a focus on equity - Priority Corridors of frequent service include neighborhoods with poverty, joblessness, and vulnerable health populations	Improve Passenger Safety & Comfort	High	Low	Neutral	Community Value	Enhanced equity, upgraded fleet, & customer experience
Implement sharing of open information pertinent to customers on public-facing online dashboard	Engage with Emerging Technology, Data, and New Mobility	High	Low	Neutral	Customer Experience	Seamless, equitable, & coordinated technology to improve user experience
Implement early system redesign wins that improve service while minimizing negative impacts	Improve Where & When Buses Travel	Medium	Low	\$	Customer Experience	Expanded access to jobs and services
Implement and promote infrastructure spot improvements that improve service while minimizing negative impacts	Improve How Streets Function	Medium	Medium	\$	Customer Experience	Reduced travel times, increased reliability, improved customer experience
Continue to advocate for funding needs and solutions among local, statewide, and federal partners	Address Funding Challenges	Medium	Low	Neutral	Financial Sustainability	Financial needs met to deliver transit service
Improve communications about fare products and how to buy them	Improve How Customers Pay	Medium	Low	\$	Customer Experience	Improved equity and customer experience
Establish stakeholder group around Solon job center to assess needs and feasibility of solutions	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Low	Neutral	Community Value	Reduced social inequities and improved regional economic success
Implement Redesign Current Funding Concept	Improve Where & When Buses Travel	High	High	\$	Customer Experience	Expanded access to jobs and services
Make small service improvements prior to a large system change	Improve Where & When Buses Travel	Low	Low	Neutral	Customer Experience	Expanded access to jobs and services
Plan four corridors and ten intersections for infrastructure enhancements	Improve How Streets Function	Medium	Medium	\$\$	Customer Experience	Reduced travel times, increased reliability, improved customer experience
Reduce All-Day passes to equal 2 fares	Improve How Customers Pay	High	Low	\$	Customer Experience	Improved equity and customer experience
Expand where 5-Trip farecards are sold by increasing the commission paid to retail outlets. Authorize 1-trip and 2-trip farecards to be sold directly to individual customers	Improve How Customers Pay	Medium	Low	\$	Customer Experience	Improved equity and customer experience
Adjust Paratransit fares and passes per Fare Equity pillar study	Improve How Customers Pay	Medium	High	\$	Financial Sustainability	Financial needs met to deliver transit service

SHORT TERM (2021-2022), continued

Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Planning, policy development, and procurement for new fare collection system	Improve How Customers Pay	Medium	High	\$\$\$	Customer Experience	Improved equity and customer experience
Continue to provide service with a focus on essential workers getting to jobs at locations such as medical facilities and grocery stores	Improve Passenger Safety & Comfort	High	Low	Neutral	Community Value	Enhanced equity, upgraded fleet, & customer experience
Continue and enhance cleaning procedures to address COVID-19	Improve Passenger Safety & Comfort	High	Low	\$	Customer Experience	Enhance customer experience
Begin procuring new heavy rail replacement vehicles	Improve Passenger Safety & Comfort	High	Medium	\$\$\$	Financial Sustainability	Enhanced equity, upgraded fleet, & customer experience
Evaluate and improve stop amenities on Priority Corridors during implementation of Current Funding Concept	Improve Passenger Safety & Comfort	Medium	Medium	\$\$	Community Value	Enhanced equity, upgraded fleet, & customer experience
Pilot ten zero emissions vehicles with support from federal grants and with feedback on passenger comfort	Improve Passenger Safety & Comfort	Medium	High	\$\$\$	Community Value	Enhanced equity, upgraded fleet, & customer experience
Establish policies with regional partners for data management and common standards for mobility providers on public right-of-way	Engage with Emerging Technology, Data, and New Mobility	Medium	Medium	Neutral	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Conduct a six-month pilot of an autonomous microshuttle and obtain ongoing community feedback	Engage with Emerging Technology, Data, and New Mobility	Medium	High	\$\$	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Evaluate internal agency costs and assess local tax support	Address Funding Challenges	High	Medium	Neutral	Financial Sustainability	Financial needs met to deliver transit service
Decide if a tax levy will assist with funding challenges	Address Funding Challenges	High	High	\$\$	Financial Sustainability	Financial needs met to deliver transit service
Continue to apply aggressively for federal grant funds	Address Funding Challenges	Medium	Low	Neutral	Financial Sustainability	Financial needs met to deliver transit service
Assess needs and establish stakeholder group around Chagrin Highlands job center	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Low	Neutral	Community Value	Reduced social inequities and improved regional economic success
Evaluate before-and-after metrics of employee attraction and retention at outlying job hub as well as community perception	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Medium	Neutral	Community Value	Reduced social inequities and improved regional economic success
Conduct pilot program centered around Solon job center	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Medium	\$\$	Community Value	Reduced social inequities and improved regional economic success

MEDIUM TERM (2023-2026)

Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Monitor redesign over time - system changes will potentially take three years to mature and establish consistent passenger levels	Improve Where & When Buses Travel	High	Low	\$	Customer Experience	Expanded access to jobs and services
Implement Redesign Expanded Funding Concept with more frequent corridors and seven day a week consistency	Improve Where & When Buses Travel / Address Funding Challenges	High	High	\$\$\$	Customer Experience	Expanded access to jobs and services
Implement four transit corridor enhancement projects	Improve How Streets Function	High	High	\$\$	Community Value	Reduced travel times, increased reliability, improved customer experience
Monitor before and after impacts of corridor enhancements and obtain ongoing community feedback	Improve How Streets Function	Medium	Low	\$	Community Value	Reduced travel times, increased reliability, improved customer experience
Plan four corridors and ten intersections for infrastructure enhancements	Improve How Streets Function	Medium	Medium	\$\$	Customer Experience	Reduced travel times, increased reliability, improved customer experience
Launch new fare collection system - cloud-based and contactless with open architecture, regional multimodal accounts, stored value, fare capping, and open payments	Improve How Customers Pay	High	High	\$\$\$	Customer Experience	Improved equity and customer experience
Launch public education campaign to create a seamless payment transition and promote benefits of the App	Improve How Customers Pay	Medium	Low	\$	Customer Experience	Improved equity and customer experience
Launch coordinated mobility app	Improve How Customers Pay	Medium	Medium	\$\$	Customer Experience	Improved equity and customer experience
Begin procuring new light rail replacement vehicles	Improve Passenger Safety & Comfort	High	Medium	\$\$\$	Financial Stability	Enhanced equity, upgraded fleet, & customer experience
Delivery of heavy rail replacement vehicles and placement into revenue service	Improve Passenger Safety & Comfort / Address Funding Challenges	High	High	\$\$\$	Financial Stability	Enhanced equity, upgraded fleet, & customer experience
Discontinue the practice of purchasing diesel vehicles	Improve Passenger Safety & Comfort	Medium	Medium	\$\$	Community Value	Enhanced equity, upgraded fleet, & customer experience
Evaluate and improve stop amenities on Priority Corridors during implementation of Expanded Funding Concept	Improve Passenger Safety & Comfort	Medium	Medium	\$\$	Customer Experience	Enhanced equity, upgraded fleet, & customer experience

MEDIUM TERM (2023-2026), continued

Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Integrate zero emissions vehicles into bus fleet procurement strategy	Improve Passenger Safety & Comfort	Medium	High	\$\$\$	Community Value	Enhanced equity, upgraded fleet, & customer experience
Collaborate with employees on workforce development and training for new technologies such as Vehicle to Infrastructure (V2X)	Engage with Emerging Technology, Data, and New Mobility	Medium	Medium	\$	Employee Engagement	Seamless, equitable, & coordinated technology to improve user experience
Vision Zero Implementation	Engage with Emerging Technology, Data, and New Mobility	Medium	Medium	\$	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Incorporate dedicated power and communications into new infrastructure projects in collaboration with community partners	Engage with Emerging Technology, Data, and New Mobility	Medium	Medium	\$\$	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Integrate mobility-as-a-service in order to deliver optimal travel solution to customers among all available modes	Engage with Emerging Technology, Data, and New Mobility	Medium	High	\$\$	Customer Experience	Seamless, equitable, & coordinated technology to improve user experience
Implementation of regional transit improvements in collaboration with community feedback	Address Funding Challenges	Medium	Medium	\$	Customer Experience	Financial needs met to deliver transit service
Evaluate before-and-after metrics of employee attraction and retention at outlying job hubs as well as community perception	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Medium	\$	Community Value	Reduced social inequities and improved regional economic success
Conduct pilot program centered around Chagrin Highlands job center and other regional job centers as needed	Partner to Support Vibrant Communities & Access to Job Centers	Medium	High	\$\$	Community Value	Reduced social inequities and improved regional economic success
If pilot projects to outlying job centers are successful, launch regional long-term microtransit program	Partner to Support Vibrant Communities & Access to Job Centers	Medium	High	\$\$\$	Customer Experience	Reduced social inequities and improved regional economic success
Conduct feasibility studies of transit service for other regional job centers	Partner to Support Vibrant Communities & Access to Job Centers	Low	Low	\$	Community Value	Reduced social inequities and improved regional economic success

LONG TERM (2027-2030)

Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Refine routes and schedules to maintain ridership/coverage goals while meeting current needs and addressing feedback	Improve Where & When Buses Travel	High	High	\$\$\$	Customer Experience	Expanded access to jobs and services
Implement four more transit corridor enhancement projects	Improve How Streets Function	High	High	\$\$	Community Value	Reduced travel times, increased reliability, improved customer experience
Monitor before and after impacts of corridor enhancements and obtain ongoing community feedback	Improve How Streets Function	Medium	Low	\$	Community Value	Reduced travel times, increased reliability, improved customer experience

LONG TERM (2027-2030), continued

Action Item	Initiative	Community Impact	Difficulty to Implement	Cost	Success Outcome	Project Benefit
Plan four corridors and ten intersections for infrastructure enhancements	Improve How Streets Function	Medium	Medium	\$\$	Customer Experience	Reduced travel times, increased reliability, improved customer experience
Emphasize ongoing corridor planning in conjunction with emergence of driverless vehicles and associated impacts	Improve How Streets Function	Medium	Medium	\$\$	Community Value	Reduced travel times, increased reliability, improved customer experience
Maintain transit's role as backbone of Priority Corridors in midst of increasing transportation change	Improve How Customers Pay	High	Medium	Neutral	Customer Experience	Improved equity and customer experience
Launch mobility as a service that is nimble and flexible to new modes and business models as autonomous vehicle fleets begin to go into service	Improve How Customers Pay	Medium	High	\$\$	Customer Experience	Improved equity and customer experience
Delivery of light rail replacement vehicles and placement into revenue service	Improve Passenger Safety & Comfort Address Funding Challenges	High	High	\$\$\$	Financial Stability	Enhanced equity, upgraded fleet, & customer experience
Move from CNG to zero emission vehicles	Improve Passenger Safety & Comfort	Medium	High	\$\$	Community Value	Enhanced equity, upgraded fleet, & customer experience
Continue to lead and leverage technological innovation in service of community goals	Engage with Emerging Technology, Data, and New Mobility	Medium	Medium	\$\$	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Refine policies and practices as driverless technology advances, such as minimizing zero occupancy vehicles on transit corridors	Engage with Emerging Technology, Data, and New Mobility	Low	Medium	\$	Community Value	Seamless, equitable, & coordinated technology to improve user experience
Continued evaluation of transportation funding as emerging technological changes alter traditional funding mechanisms	Address Funding Challenges	High	High	\$	Financial Stability	Financial needs met to deliver transit service
Continued implementation of regional transit improvements in collaboration with community feedback	Address Funding Challenges	Medium	Medium	\$\$	Customer Experience	Financial needs met to deliver transit service
Evaluate ongoing success of partnerships and community perception	Partner to Support Vibrant Communities & Access to Job Centers	Medium	Low	Neutral	Community Value	Reduced social inequities and improved regional economic success
Transition regional microtransit program to autonomous microtransit solutions as technology advances	Partner to Support Vibrant Communities & Access to Job Centers	Medium	High	\$\$\$	Customer Experience	Reduced social inequities and improved regional economic success

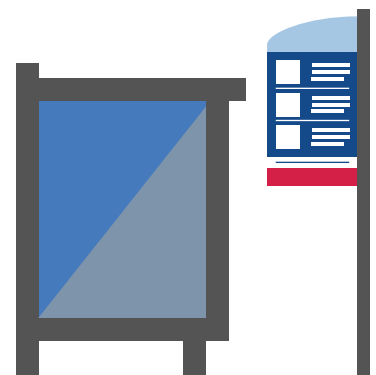
Conclusion

The implementation of the recommendations will assist in positioning GCRTA to achieve high standards of services to Cuyahoga County, ensuring GCRTA is a high-performance agency that is *customer focused* and *community engaged*.

CONTENTS



i	Executive Summary
1	Vision and Goals
5	Existing Conditions
43	Engagement
59	Strategy Identification
83	Priority Corridor Update
105	Key Initiatives
135	Appendices





Vision & Goals



The Greater Cleveland Regional Transit Authority (RTA) is partnering with the community to develop a new Strategic Plan that will create the “Framework for the Future” to the year 2030. RTA has historically demonstrated its commitment to customers through continual infrastructure upgrades and planning initiatives. However, several challenges create uncertainty on the path ahead: decreasing ridership in line with national trends; limited and reduced funding; aging infrastructure; and emerging technology and mobility disruptions. During the conclusion of the planning process, COVID-19 struck Northeast Ohio and the world. This pandemic impacted transit and daily life for everyone in unprecedented ways. The planning team considered this new disruption and incorporated a new perspective throughout the Strategic Plan

report. Through input from a variety of stakeholders and the public, this planning process resulted in clear direction to guide RTA in navigating the upcoming decade.

This section provides a structure for framing the vision and goals of the Strategic Plan. The vision defines the philosophy that will guide RTA decisions and priorities. This is a living document that will evolve even after the planning process is completed. It is based on input from stakeholders and the public, previous RTA documents, changing conditions facing RTA and the transit industry, and national best practices. The Vision and Goals are highlighted below, with a subsequent background section that describes supporting information.

Strategic Plan Vision

The Vision for the Strategic Plan:

Customer Focused, Community Engaged

This highlights the dual internal and external focus of RTA's vision for the future. Through safe, reliable, integrated, sustainable, and innovative transportation, RTA will deliver access to opportunity for individuals and the entire region over the next decade.

Goals

The study team collaborated with stakeholders and the public to identify ten goals for the Strategic Plan. These goals provided a framework for understanding needs and opportunities as described later in the Engagement chapter.

1

CUSTOMER EXPERIENCE

RTA will provide dependable, clean, fast, and seamless transportation that creates a positive experience for RTA customers.

2

FINANCIAL STABILITY

RTA will be a responsible steward of public funds by providing exceptional services cost-effectively.

3

STATE OF GOOD REPAIR

RTA will enhance, preserve and maintain its infrastructure and assets.

4

TECHNOLOGICAL INNOVATION

RTA will lead in its integration of new technologies and evolving mobility options to enhance the transportation experience for customers, RTA employees, businesses and visitors.

5

ECONOMIC PROSPERITY

RTA will be the transportation backbone that moves the economy forward and improves the quality of life of county residents by enabling economically sustainable regional land use and development and reinforcing investment in strategic employment and population centers.

6

ACCESS

RTA will facilitate increased access to jobs, education, and civic life.

7

COLLABORATION

RTA will work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for transit oriented development.

8

EQUITY

RTA will continue to provide equitable transit services that benefit disadvantaged individuals and communities.

9

ENVIRONMENTAL SUSTAINABILITY

RTA will reduce greenhouse gas emissions in the region by providing clean transportation and shifting travelers away from single occupancy vehicles.

10

TRANSPARENCY

RTA will instill public confidence as a well-run institution that is accountable to its customers, employees, and taxpayers.



Previous RTA Strategic Plan

RTA published its previous Strategic Plan in 2012. The vision identified for RTA's 2012 Strategic Plan was "RTA will be the preferred form of transportation in the Cleveland area." The goals that were developed to guide the document are listed below.¹

- RTA will continue to put customer needs first.
- RTA will focus on ensuring access to employment and educational opportunities for residents throughout the region.
- RTA will provide services cost effectively.
- RTA will continue to play a vital role in maintaining and building our region's competitiveness.
- RTA will support regional approaches to transportation and land use planning that reinforce investment in existing employment and population centers, infrastructure, and services.
- RTA will improve services to suburban employment centers.
- RTA will provide special transportation service support to those who need it most.
- RTA will provide services at a sustainable level given its financial resources.
- RTA will increase its contribution to sustaining our natural environment.

Priorities included transportation to members of the workforce and students, supporting land use planning efforts that encourage strategic investments, and sustainability initiatives.

Changing Conditions

The rapid advance of new transportation business models and innovative technologies have thrust public transit agencies into a disruption in transportation unlike anything in recent history. With this in mind, RTA and partner agencies need to determine how their role will change in the coming years, how quickly new technologies will reach a maturity level sufficient for widespread adoption, and how to future-proof the transit network against a range of possibilities. It is critical that today's transit decision-makers are well positioned to utilize new technologies and business partnerships while planning wise investments and maintaining state of good repair.

Trends such as shifting travel preferences, new development patterns, economic conditions, and an increase in telecommuting each impact the demand for transportation; against this backdrop autonomous and connected vehicle technology, micromobility, and ride hailing services are changing the provision of transportation services. Readyng RTA for emerging technology will require an understanding of how changes provide both opportunities and challenges to established operations. Connected vehicles consist of point-to-point dedicated short-range communication message exchanges including vehicle-to-vehicle (V2V) communication that allows enabled vehicles to communicate with each other; vehicle-to-infrastructure (V2I) communication that allows vehicles to communicate with surrounding infrastructure; and, vehicle-to-all (V2X) communication that enables the interaction of vehicles and any capable communication device in the immediate vicinity, such as a device carried by pedestrians. Autonomous vehicles utilize technology to independently monitor the driving environment and perform driving functions. As these transportation technologies continue to be developed, new opportunities and challenges will come into focus. Uber, Lyft, and scooter sharing businesses were not on transit agencies' radars a decade ago. When looking to the next decade, how does an agency plan for unknown technologies and companies that have not been invented yet?

From Goals to Recommendations

Funding challenges, regional development patterns, and technological advances create a difficult situation in which travelers have higher expectations of transportation at the same time RTA's job is more difficult than ever. On the other hand, what change can RTA embrace to succeed in the future? These conditions drive the Strategic Plan from goals to recommended initiatives.

At the conclusion of the planning process, COVID-19 thrust the world into unforeseen change. Throughout the recommendations at the end of the Strategic Plan, new considerations to handle the disruptions of COVID-19 are included.

Footnotes

¹ RTA 2010-2020 Strategic Plan, 2012



Existing Conditions



History of RTA Planning Efforts

RTA has planned for the future throughout the past several decades with continual analysis and stakeholder engagement. The first plan was in the 1990's and laid the groundwork for expansion of the system to include suburban park-n-rides, building of the transit station network, and study of expansion of all rail lines. Westlake, Euclid, and Strongsville Park-N-Rides create free parking for customers to easily access transit services. Westgate Transit Center in Fairview Park, Southgate Transit Center in Maple Heights, and Parma Transit Center provide hubs for customers from which to access multiple routes. The Waterfront Line, Red Line and light rail station reconstructions, and daycare at Windermere were all built from this plan. The 1,050-foot Walkway

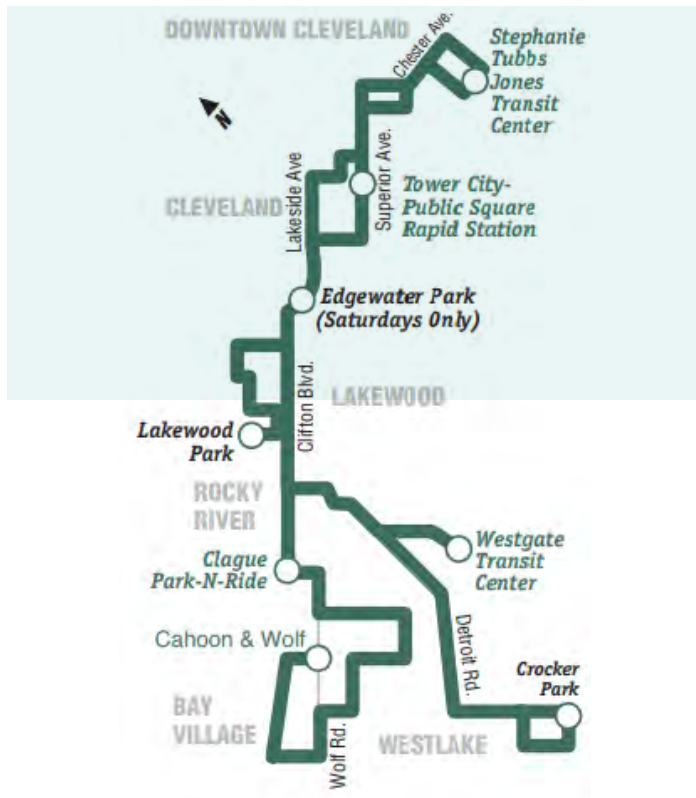
from Tower City to Rocket Mortgage Fieldhouse that provides convenient access to sports events for RTA customers came out of this plan.

An update to the 1990's plan scaled back potential future rail extensions. In 2007 Transit-Oriented Development guidelines were published that highlighted the necessity for planned growth around transit stations. The most recent Strategic Plan covered the years 2010-2020. It created vision and goals discussed previously, as well as an emphasis on Priority Corridors based on transit propensity. This plan resulted in the Cleveland State Line, MetroHealth Line, and study of W. 25th for BRT.

This Strategic Plan for 2020-2030 is updating the expiring 2010-2020 plan.

Previous strategic plans have led to implementation of improvements.

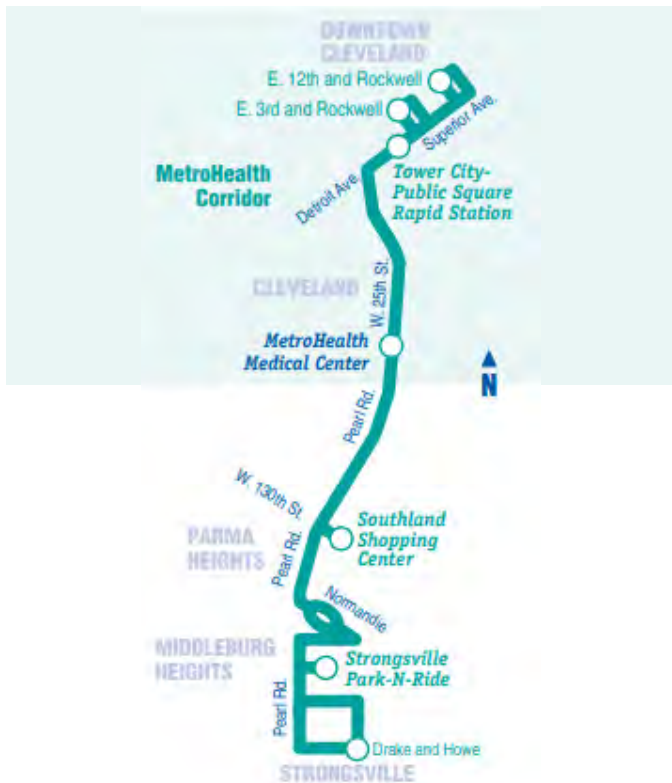
CLEVELAND STATE LINE



METROHEALTH LINE - W. 25-STATE



METROHEALTH LINE - W. 25-PEARL



METROHEALTH LINE - W. 25-BROADVIEW



Planning History of Partner Agencies

RTA and other government agencies rely on one another for planning support and collaboration. Noteworthy recent reports include those completed by Northeast Ohio Areawide Coordinating Agency, Northeast Ohio Sustainable Communities Consortium, City of Cleveland, and Cuyahoga County. Additional relevant report summaries are referenced in the Appendix.

AIM FORWARD 2040, (2017)

The Northeast Ohio Areawide Coordinating Agency (NOACA) is the Metropolitan Planning Organization (MPO) serving the counties of and municipalities and townships within Cuyahoga, Geauga, Lake, Lorain and Medina. NOACA's Longe-Range Transportation Plan for the region was approved in 2017. AIM Forward 2040 is the framework for directing investment for all forms of transportation in Northeast Ohio, including motor vehicle, bridge, transit, bicycle, walking and the movement of freight. The plan offers a vision of the region's transportation system through the year 2040 and identifies \$15.8 billion in transportation investments that address accessibility, safety and mobility for people who live and work in Northeast Ohio. The plan identifies investments to address the needs of the region. It notes that almost 7 million trips are taken daily in the NOACA region; 82% of the region's population commutes to work alone; and 62% of the region's population is within a half-mile of a transit station. The plan discusses transit services provided by the Greater Cleveland Regional Transit Authority (RTA), Laketran (Lake County's regional public transportation authority), Lorain County Transit (LCT), Medina County Public Transit (MCPT), and Geauga County Transit. The plan notes that RTA is the largest transit system operating in the region and accounts for more than 94% percent of the region's operating and capital needs. The plan calls for enhancing and investing in transit across the region.

VIBRANT NEO 2040, (2013)

Northeast Ohio Sustainable Communities Consortium (NEOSCC) was established in 2011 and included 23 member organizations across Northeast Ohio. Members

included Metropolitan Planning Organizations, counties, cities, universities, metropolitan housing authorities, and others. NEOSCC created Vibrant NEO 2040 as a regional visioning and decision-making framework. It aimed to create a shared vision for the future, developed through a robust community and stakeholder engagement process. NEOSCC's purpose centered on creating conditions for a more Vibrant, Resilient, and Sustainable Northeast Ohio.

The plan created seven goals:

1. Enable Inclusive & Transparent Public Planning
2. Reflect Shared Values
3. Respect Choice
4. Promote Informed Decision-Making
5. Coordinate Efforts & Investments
6. Enable & Promote Action
7. Improve Quality of Life

REGIONAL TRANSIT-ORIENTED DEVELOPMENT SCORECARD AND IMPLEMENTATION PLAN, (2016)

This NOACA report highlights four ingredients to successful walkable development near transit: development that is compact and dense relative to surrounding area; mix of land uses; safe, inviting, interconnected public realm; and a new approach to parking with fewer cars, shared facilities, and district design standards. This report assessed all rail stations on the Red Line; all stations on the Blue, Green, and Waterfront Lines, either individually or in clusters of closely spaced stations; HealthLine BRT service, in clusters of closely spaced stops; ten Priority Bus Corridors designated by RTA, including the Cleveland State Line BRT service; and a sampling of suburban town centers and bus transit centers. Considerations included place typology, connectivity, market strength, land availability, and government support.

CLEVELAND CLIMATE ACTION PLAN, (2018)

The City of Cleveland, community leaders, and a Climate Action Advisory Committee reaffirmed the city's commitment to the goals of the Paris Climate Agreement. The 2018 update was built on the initial 2013 plan. The 2013 Cleveland Climate Action Plan established an overarching greenhouse gas (GHG) reduction goal of 80% below 2010 emissions by 2050,

with interim goals of 16% reduction by 2020 and 40% reduction by 2030. Those goals were retained in the 2018 plan. The plan notes that 16% of GHG emissions in Cleveland come from transportation. One of the five focus areas of the plan is Sustainable Transportation. The objectives include:

- Drive cleaner, more efficient vehicles
- Build transportation systems that prioritize safety for all
- Increase use of public transit through regional collaboration
- Make Cleveland a premier cycling city
- Continue to green Cleveland's ports

The plan notes that RTA's Commuter Choice Advantage program expanded from 696 companies in 2013 to 856 companies in 2017. This payroll deduction plan allows workers to prepay transit fares on a before-tax basis, saving employees and employers money. The Climate Action Plan advocates for more transit funding from the state, enhanced partnerships, technology to improve user experience and reduced emissions, transit-oriented development, and equitable access to transit.

CUYAHOGA COUNTY CLIMATE CHANGE ACTION PLAN, (2019)

The County and its partners created this plan that focuses on five areas: energy, land use, transportation, ecosystem, and health. The County aspires to a 45% overall reduction in GHG emissions from its 2010 baseline by 2030 and net-zero emissions by 2050. The plan calls for cleaner fuel vehicles and more public transit, biking, and walking. It notes that Cuyahoga County is particularly auto-dependent, with 79.8% of commuters driving alone to work, above the national average of 76.4%. The plan calls for repurposing overbuilt road infrastructure for alternative modes of transportation (e.g. dedicated bus lanes, bike lanes) without creating major congestion issues. It recommends electrification of school and transit bus fleets. It aims to return public transit service and ridership to 2006 levels by 2025 and increase the transit mode share.

Summary of Transit Services

EXISTING CONDITIONS

Greater Cleveland Regional Transit Authority (RTA) provides public transportation across Cuyahoga County.

457	Square miles
59	Municipalities
1.26M	Residents

Rail

RTA provides almost 2 million revenue miles of rail service. Rapid transit rail service includes:

- **Red Line:** Service between the Louis Stokes Station at Windermere and Cleveland Hopkins International Airport, via Downtown Cleveland
- **Green Line:** Service between the Tower City Rapid Station and the Green Road Rapid Station
- **Blue Line:** Service between the Tower City Rapid Station and the Warrensville-Van Aken Rapid Station
- **Waterfront Line:** Operates as an extension of the Green and Blue lines beyond the Tower City Rapid Station to the South Harbor Rapid Station

The Red Line has 19 route miles of track and more than 6 million annual passenger trips. The Red Line includes 18 high platform stations and utilizes 52 heavy-rail cars. The Green, Blue, and Waterfront lines have 15 route miles of track and approximately 1.6 million riders served by 40 light-rail cars and 34 low platform stations.

Bus Rapid Transit

RTA markets three bus rapid transit (BRT) services across the region.

- **HealthLine:** Service between Tower City - Public Square and the Louis Stokes Station at Windermere, via Euclid Avenue and University Circle.
- **Cleveland State Line:** Routes 55 A-B-C provide

service via Clifton Boulevard between downtown Cleveland and through the West Side to the suburb of Fairview Park.

- **MetroHealth Line:** Twenty branded buses and over 400 customized signs along the route connect five MetroHealth locations via W. 25th Street, Pearl Road, and State Road.

HealthLine recently celebrated its 10-year anniversary and is acclaimed for stimulating more than \$9.5 billion in economic development.

Trolley

RTA has four free downtown trolleys:

- **NineTwelve Trolley:** Service between the Mundy Parking Lot and the area of Chester Avenue & East 9th Street, via East 9th Street.
- **E-Line Trolley:** Service between many entertainment destinations along Euclid Avenue.
- **B-Line Trolley:** Service focused on quick travel to businesses for workers across downtown.
- **C-Line Trolley:** The Convention and Casino trolley travels between the Warehouse District, Tower City - Public Square, Playhouse Square, Cleveland State University, the Huntington Convention Center and the Flats East Bank.

Bus

RTA has about 50 bus routes with 14 routes operating 24 hours a day and 7 days a week. There are approximately 390 buses that provide over 12 million revenue miles per year across 1,459 shelters and 5,720 bus stops. More than 22 million trips are taken annually on RTA's buses, the workhorses of the agency's service.

Paratransit

RTA provides almost 600,000 trips annually on paratransit service for individuals with disabilities. The service uses approximately 80 agency-owned vehicles and 70 contracted vehicles for paratransit service.

DATA TRENDS

RTA ridership has decreased in line with national trends. When the agency began in the 1970's, the region was a different place with higher population density across a smaller geographic reach and land use supportive of transit. Ridership increased in the first half of this decade to hit almost 50 million rides in 2014, but has never hit the pre-recession levels of over 57 million annual rides.

In general, the factors influencing transit ridership can be broken down into two categories:

Internal factors (i.e., those over which RTA managers exercise some control, such as the fare structure).

Examples include:

- Quality of service
- Fares
- Policies and other forces such as strikes or misuse of public funds

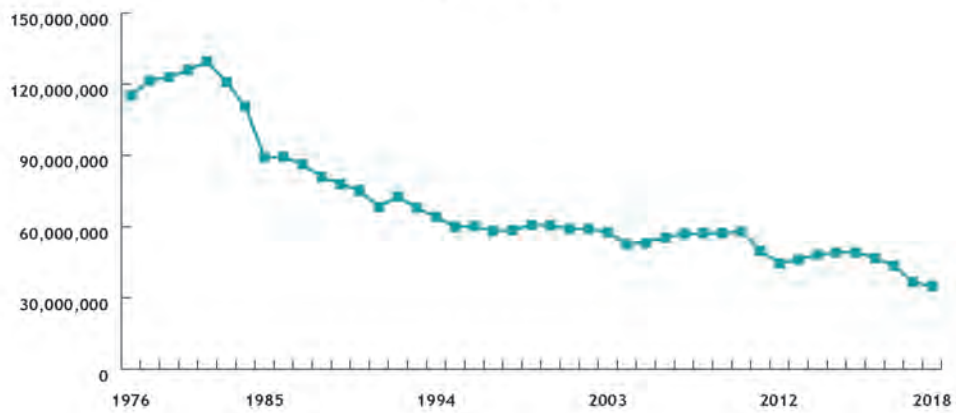
External factors (which are largely exogenous to the transit system and its managers, such as demographic trends). Examples include:

- Population
- Economic conditions
- Gas price
- Alternate transportation options

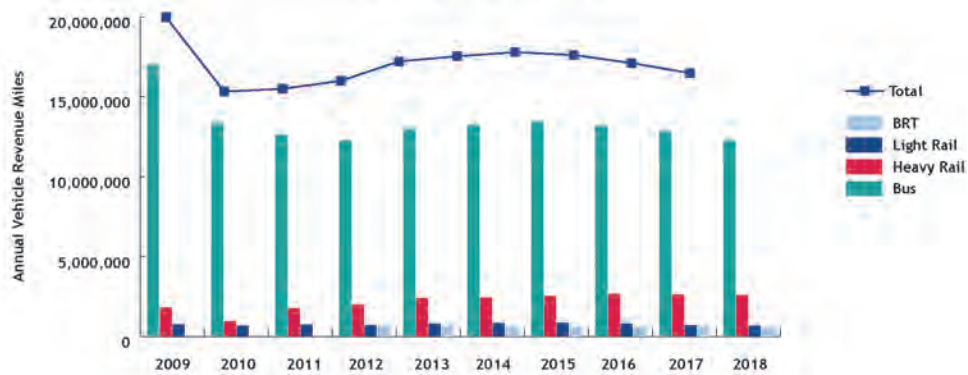
This is not a comprehensive analysis of factors influencing ridership. For example, weather and seasonality can impact ridership in any given month. Rather, this discussion aims to provide a cursory look at general trends to help provide context to RTA's ridership decline.

The provision of fixed route transit service declined at the start of the decade during the Great Recession. Service peaked in the past decade in 2015 with over 17 million vehicle revenue miles. Service has been reduced each year since 2015.

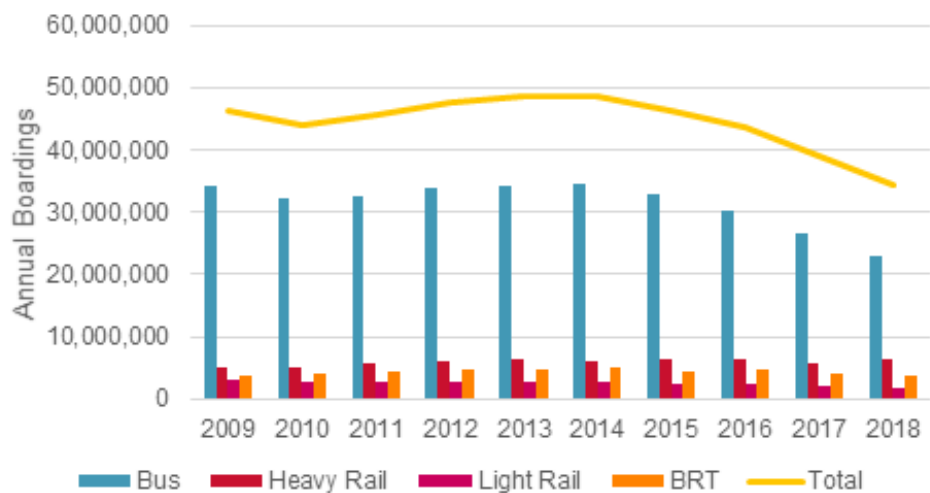
Ridership



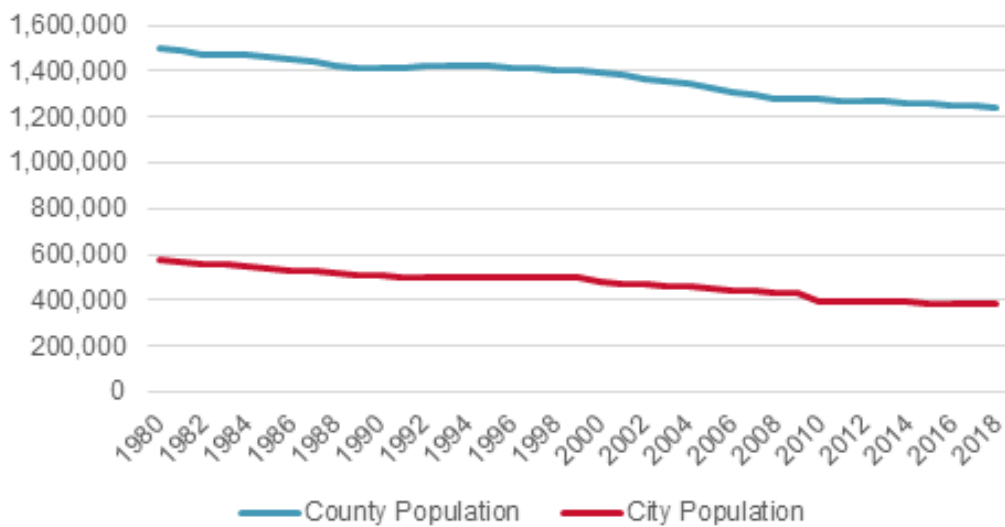
Transit Service Provided



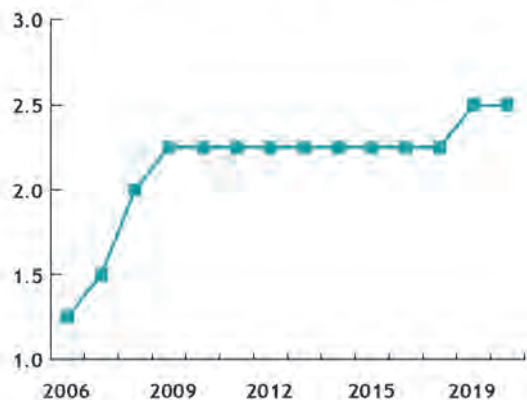
Fixed Route Transit Ridership



Cuyahoga County and Cleveland Population



Bus Fare (Bus, BRT, Rapid)



Year	Population
2011	1,270,224
2012	1,266,080
2013	1,265,478
2014	1,263,283
2015	1,258,923
2016	1,254,482
2017	1,248,371
2018	1,243,857

Fares have remained relatively unchanged for much of the past decade. Fares increased in the growing years prior to the Great Recession. Fares increased in recent years so that the cost of a one-way fare for bus, BRT, and rail is currently \$2.50.

Cuyahoga County’s and Cleveland’s populations have decreased over recent decades. Since 2010, the county’s population has lost tens of thousands of residents.

Cuyahoga County lost 34,000 residents from 2010 to 2018.

At the same time population has decreased, employment in Cuyahoga County has decreased. Decreases experienced during recessions have had long-term impacts on the region's employment. Employment decreased by tens of thousands of jobs over the past decade, but has remained relatively stable in recent years.

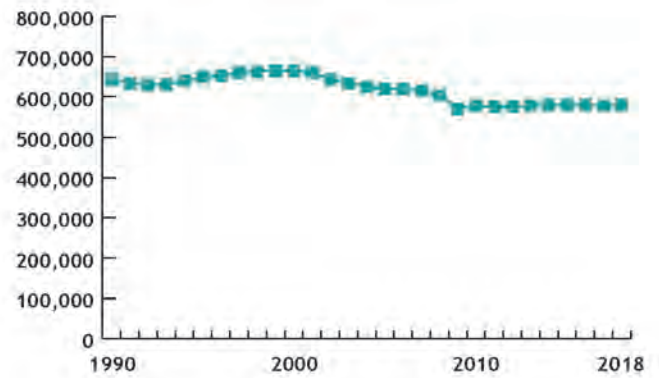
Over time the location of jobs has shifted in Cuyahoga County. There are six main hubs of employment in the five-county NOACA region, with all six located within Cuyahoga County. Cuyahoga County accounts for a significant majority of jobs in the five-county region, and the largest job hub is Downtown Cleveland. University Circle is the second largest job hub. University Circle is the second largest job hub.

The six hubs are:

- Downtown
- University Circle
- Solon Cochran Corridor
- Chagrin Highlands
- I-77-Rockside
- Hopkins Airport Area

Though it is the largest hub in the region, Downtown has experienced a decrease in employment, while the other job hubs in outlying areas of the county have increased jobs. Jobs have spread across the region in ways that make transit service more difficult.

Cuyahoga County Employment

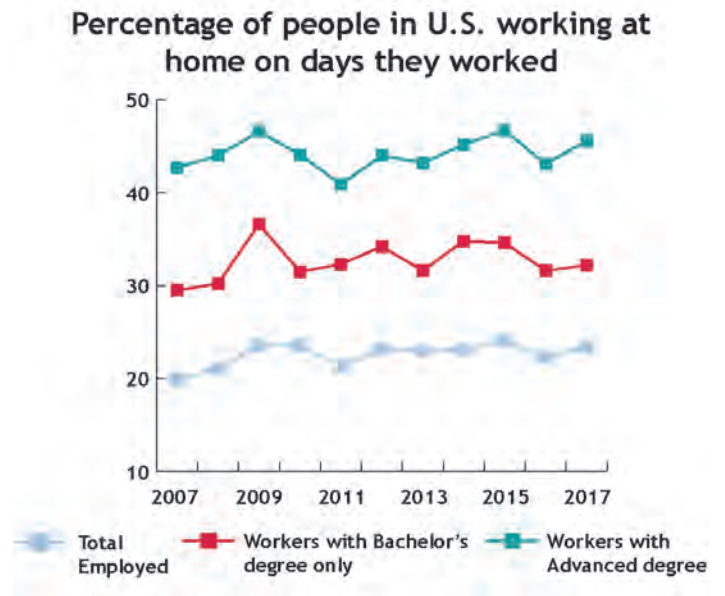


Footnotes

¹ US Census

At the same time population and employment have decreased and expanded across the county, the number of employees working from home has increased. Over the past decade, the percent of workers in the U.S. working from home has increased over three percent. In 2017, over 23 percent of workers had no commute when they were working. This number is higher for professional workers - 46 percent of those with advanced degrees, and 32 percent of those with bachelor's degrees, performed some work at home on days they worked.

In the Cleveland metropolitan region, working from home has increased. The percent of workers who work full-time at home increased from 2.8% in 2005 to 3.7% in 2010. It is estimated that 4.3% of workers worked full-time from home in 2017.



Gasoline prices impact the perceived cost of transportation. Gas prices nationwide reached highs at the start of the decade. After a drop in 2014, gas prices have remained low for travelers.

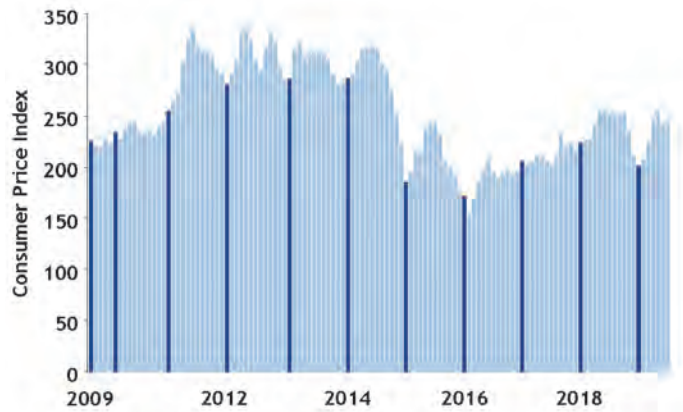
Data from the Federal Reserve and U.S. Bureau of Economic Analysis reveals that vehicle sales have increased over the past decade across the country.

This increase in vehicles has been experienced locally in Cuyahoga County. While population has decreased by tens of thousands of residents, there has been an increase of tens of thousands of vehicles.

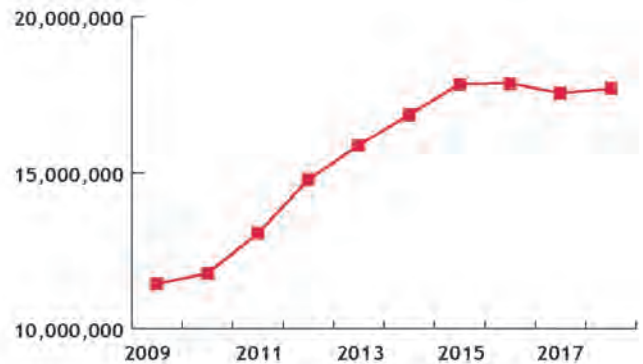
At the same time a confluence of factors have impacted RTA ridership, disruptive technologies and new mobility business models have changed the public’s perception on the cost and value of transportation. Those topics are discussed later.

RTA is taking positive steps towards stemming declining ridership through its system redesign study that is assessing the best options for providing transit services. The redesign results are incorporated into the Strategic Plan along with the other Pillar studies.

Gasoline Price - U.S. Average



Vehicle Sales in U.S.



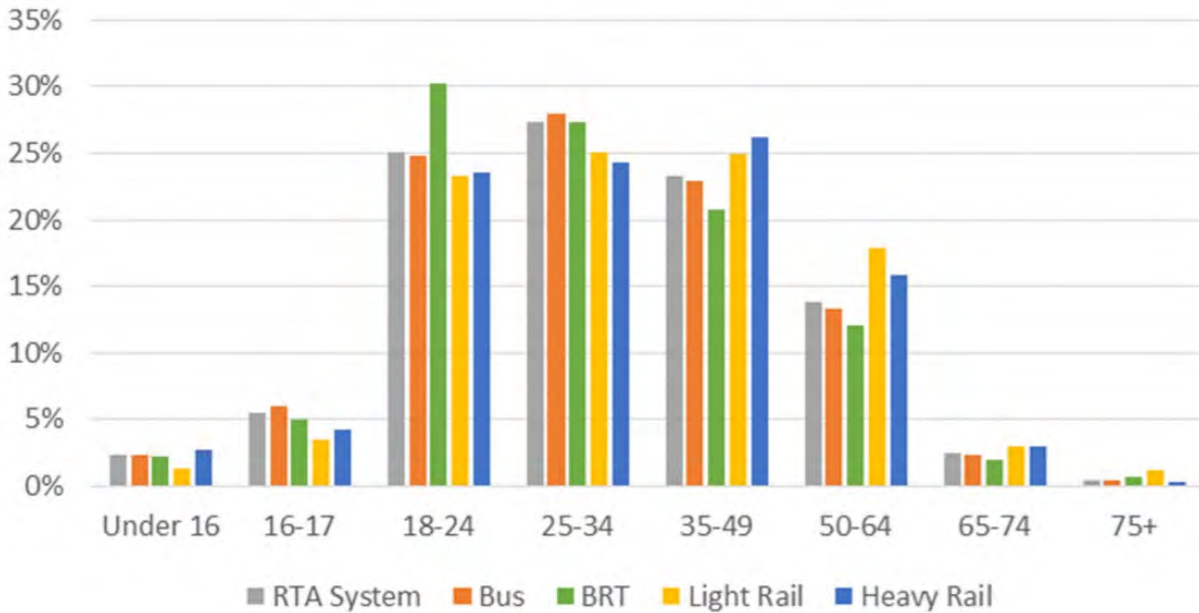
YEAR	CUYAHOGA COUNTY VEHICLE REGISTRATIONS
2014	1,077,088
2015	1,095,601
2016	1,102,794
2017	1,094,151
2018	1,111,137
Increase over 5 years	34,049

DEMOGRAPHICS

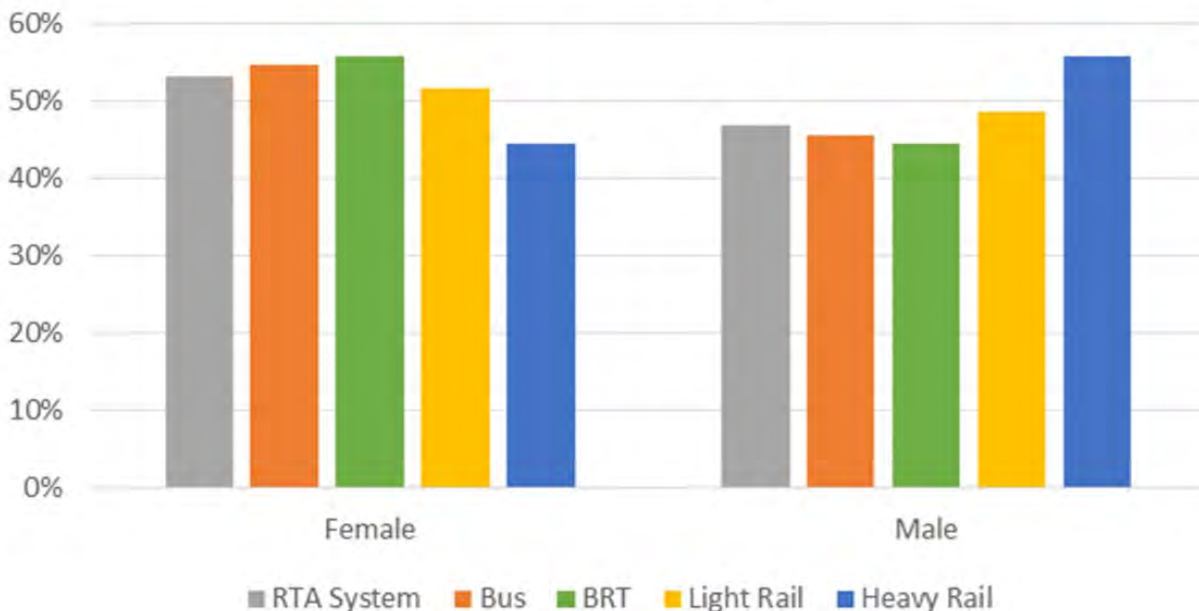
Demographic data highlights who uses RTA’s services based on the most recent on-board survey. RTA customers range across people of all backgrounds and socioeconomic characteristics, but some trends are apparent.

A majority of RTA riders are of working age, female, African American, employed full-time, and make less than \$25,000 per year. Between 30-40% of riders do not have access to a car. The following charts highlight the similarities and differences among customers using RTA’s various transportation modes.

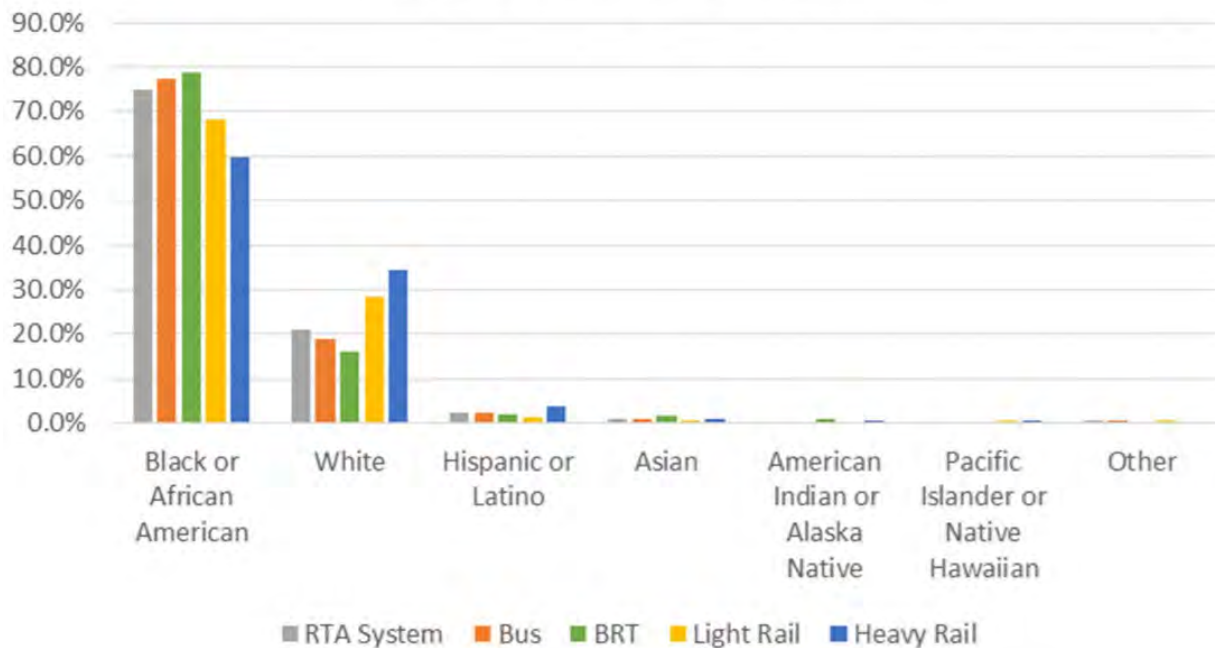
Age of RTA Riders by Mode



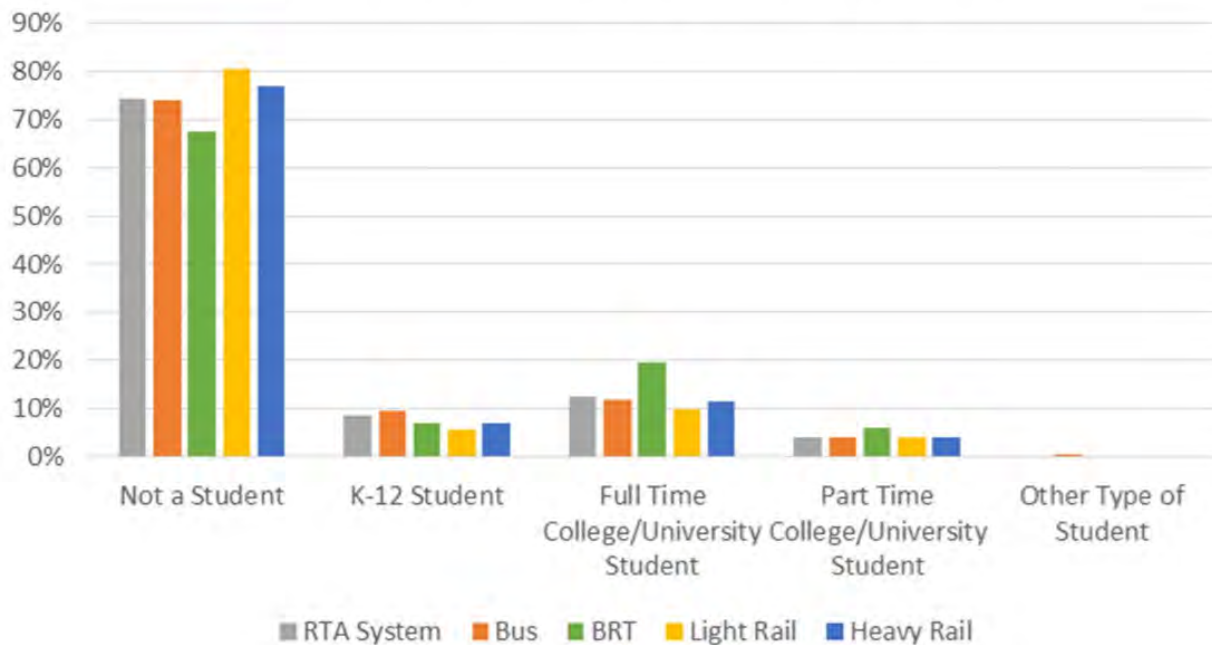
Gender of RTA Riders by Mode



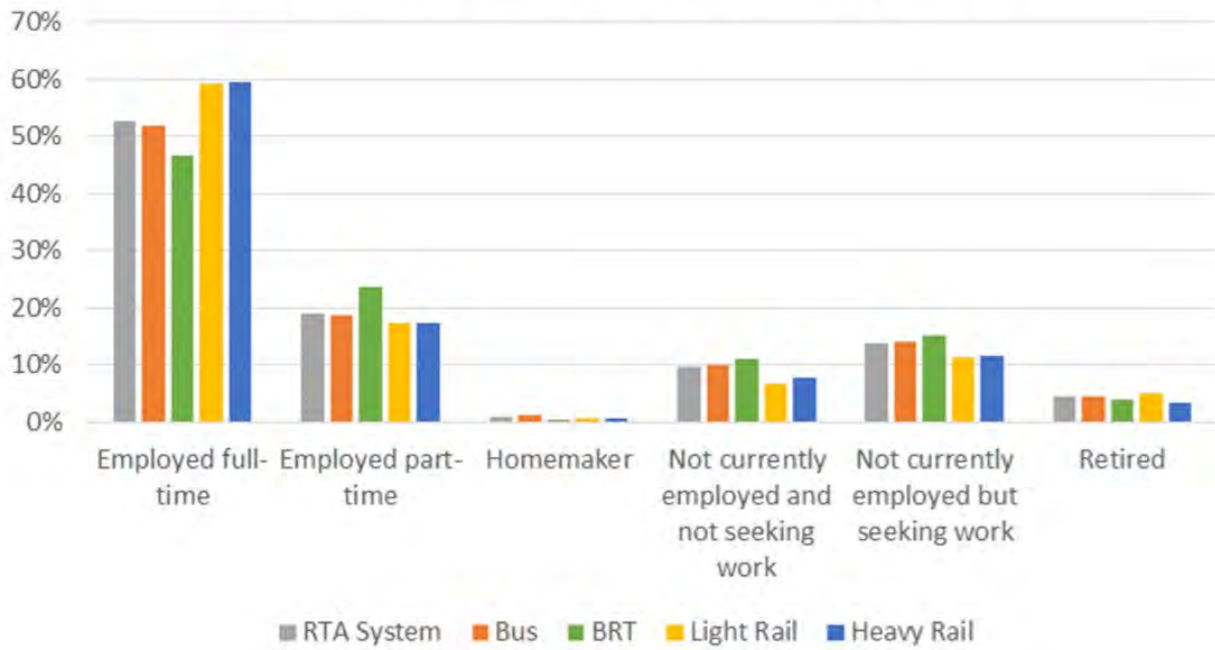
Race of RTA Riders by Mode



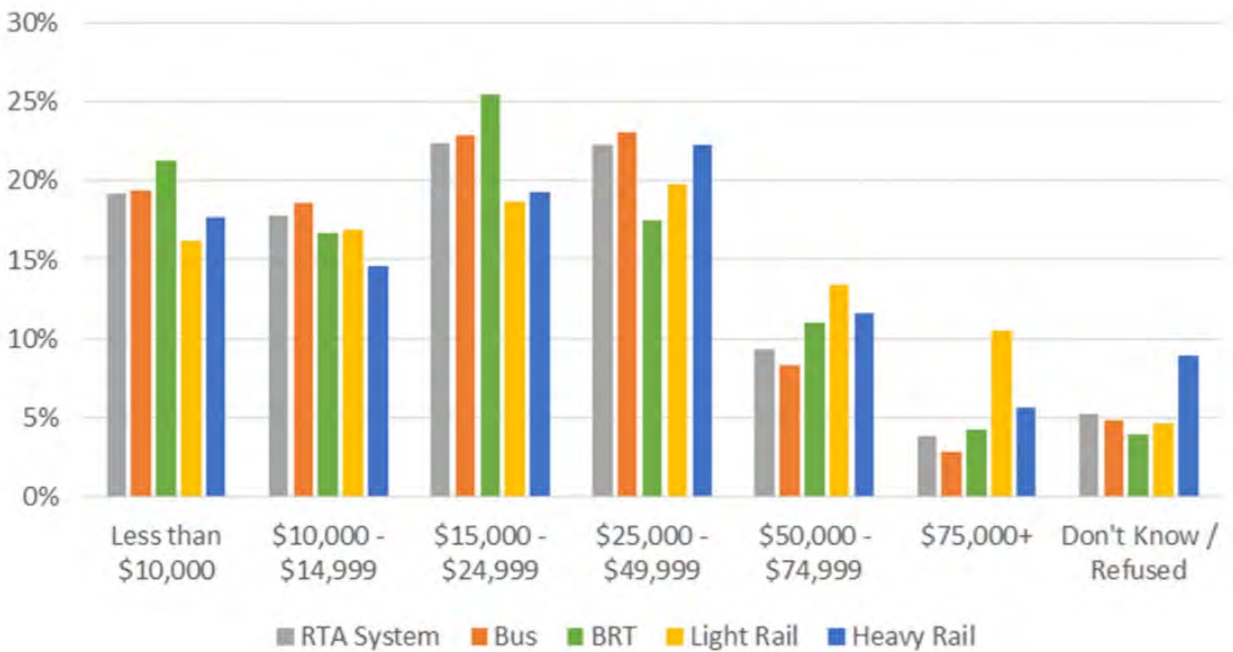
Student Status of RTA Riders by Mode



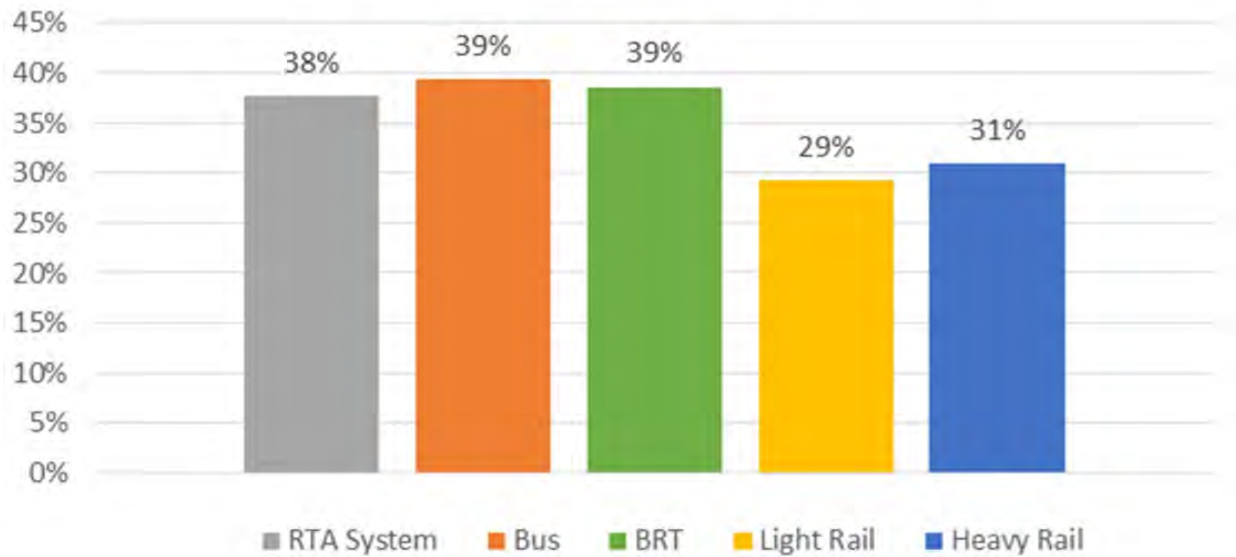
Employment Status of RTA Riders by Mode



Household Income of RTA Riders by Mode



RTA Riders without a Driver's License and Living in a Zero-Car Household



SWOT Analysis

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. Strengths and weaknesses are internal to the organization –things that RTA has some control over and can change. Opportunities and threats are external—things that are going on outside the agency. The following issues help frame the forces that impact RTA's future.

STRENGTHS

- As a legacy transit system with robust history, local residents and businesses are aware of what RTA is. The brand recognition is high.
- Staff members have deep institutional knowledge.
- Rail lines and BRT services provide a backbone for additional system improvements.
- Past investments provide value to customers
- New leadership paves the way for innovative changes.

OPPORTUNITIES

- Job hubs drive transit ridership and the largest hub remains downtown where transit service is greatest.
- Partnership is increasing among public and private agencies on transportation issues.
- Disruptive technologies and business models can be harnessed to advance RTA goals.

WEAKNESSES

- Passenger experience is degraded by unreliability and a poor image.
- Infrastructure needs are not being met as highlighted by the breakdown of the Red Line in summer 2019.
- Ridership has decreased for several years.
- Technology adoption is slow compared with peers.

THREATS

- The region is losing population and jobs.
- Competition for travel service in urban areas is increasing with new options providing door-to-door service for relatively cheap costs to customers.
- Job locations are spreading across Cuyahoga County and the region.

Concurrent Planning Efforts

The Strategic Plan aims to create understanding of the current and future issues facing RTA's service. Its goal is to build consensus around prioritized strategies to the year 2030. Essential to the Strategic Planning process are several Pillar Studies that are underway.

The Pillar Studies that are inputs into the Strategic Plan are:

- Economic Impact Study
- Fare Equity Study
- Rail Car Study
- Efficiency Study & Operational Review
- System Redesign Study



ECONOMIC IMPACT STUDY

Cleveland State University's Center for Economic Development completed an analysis to quantify the economic benefit RTA generates annually for Cuyahoga County. In addition to the direct economic impact resulting from RTA employees residing in the County, the study also measured the economic effect of RTA's annual in-county expenditures as well as the economic benefit of purchases made by RTA and supplier employees.

Findings conclude that RTA has a massive economic impact on the region.

- Transit Impact on Cuyahoga County Property Values: \$2.2 Billion
- RTA's Economic Impact to Cuyahoga County: \$322 Million Annually
- Transit Impact on Employment: \$485.8 Million
- Community Loss Without Transit: \$448.7 Million

The study highlights the importance of RTA's services to the region's residents and employers. Without RTA's services, thousands of people would be negatively impacted in their ability to get to work, school, healthcare, and other destinations across the region.

FARE EQUITY STUDY

The goal of this study is to enable RTA to better understand its ridership, and the relationships between changes in fares, fare structure, fare collection, ridership and revenue. It includes:

- Comparison of current fare structure to peer agencies
- Survey of RTA Riders
- Process and model to analyze impacts of fare changes
- Assistance in analyzing fare alternatives
- Fare Equity Analysis

This study, concluded in December 2019, recommends a variety of ways to promote equity and enhance the customer experience regarding fare payments. Increased use of technology, revised policies to cap fares, and other recommendations are made that are incorporated into the Strategic Plan.

RAIL CAR STUDY

RTA recently completed a Rail Car Replacement Study to perform a comprehensive evaluation for heavy rail fleet (Red Line) and light rail fleets for the Blue, Green, and Waterfront lines. Both the heavy rail and light rail car fleets have exceeded the 30-year useful life.

The heavy rail car fleet is estimated to have a remaining life of 5 years. The study recommended replacing the heavy rail car fleet rather than attempting to further rehabilitate existing cars since the cost of rehabilitation would far exceed the replacement cost. The light rail car fleet is estimated to have a remaining life of 10 years. The study recommended replacing the fleet rather than attempting to further rehabilitate for the same reason - the cost of rehabilitation would exceed the cost of replacement.

The study recommends procuring 34 heavy rail cars in 2020 with delivery in 2023 at a cost of approximately \$102 million. It recommends procuring 24 light rail cars in 2025 with delivery in 2028 at a cost of approximately \$96 million.

With all cost including vehicles, rail shop infrastructure improvements, and contingency, the total cost is projected to be approximately \$240 million.

EFFICIENCY STUDY & OPERATIONAL REVIEW

The Greater Cleveland Partnership (GCP), Northeast Ohio's Chamber of Commerce, completed a financial analysis and economic forecast for the Greater Cleveland Regional Transit Authority. The following results came from this study.

1. **Benchmarking:** RTA's operational performance offers a mixed picture, with high-performing services (Bus Rapid Transit: the HealthLine) countered by services that are not performing

in line with peers with respect to cost (local bus) or ridership (rail services). Additionally, administration cost appear to be higher than most peers. From a governance standpoint, RTA's Board would benefit from limiting terms and eliminating the stipend for Board members.

2. **Economic and Market Risk:** RTA is facing risks related to its funding, its operation, its assets and broad regional trends. Opportunities to mitigate these risks, based on stakeholder input, include new CEO leadership, a recently completed bus system redesign study, and while less certain, the recent growth in downtown population.
3. **Financial Issues:** RTA's financial outlook shows limited deficits in the operating budget. However, projected cost of procuring a new rail fleet and meeting other unfunded capital needs, primarily related to the rail system, far exceeds available capital reserves.
4. **Cost Efficiencies and Revenue Enhancement Strategies:** Cost reduction strategies, relying on privatization and internal reorganization, could lead to a potential cost savings of \$21 million a year, while additional revenue could amount to \$8 million through ridership recovery with local bus redesign and reinvestment in the rail system. To support its rail infrastructure, the region should consider as a priority, long-term coordination of RTA's service development and capital investments with governmental, business and non-profit entities to direct economic development toward rail station areas, which are currently under-utilized.
5. **Key Performance Indicators:** RTA has successfully developed advanced performance reporting systems. To enhance its performance-based management, reputation and transparency, RTA should share its goals and results both internally with all its employees and externally with its riders and the public.
6. **Revenue Sources and Options to Bridge Funding Gaps:** RTA has the ability to levy sales-and-use and property taxes at the county level. Based on RTA's assessment of its capital needs, substantial funding increases are needed to recapitalize its rail infrastructure and replace its rail fleet. What

is uncertain is if that increased funding to cover the capital shortfall will yield a high return-on-investment in terms of increased ridership.

SYSTEM REDESIGN STUDY

The redesign study aims to analyze bus route data and get public input on potential systemwide redesign alternatives. The study resulted in two conceptual networks showing how the transit network could look if it were designed to focus slightly more on generating high ridership. One network highlights a redesigned network with current levels of funding, while an expanded network displays increased services with new funding. These results are incorporated into the Strategic Plan.

Each of the Pillar Studies offer valuable insights and conclusions about RTA's services, customer experience, operational performance, funding issues, infrastructure, and more. The Strategic Plan's recommendations identify prioritized strategies that form a cohesive plan.

Ongoing RTA Efforts

RTA is continuously working toward efficiencies while advocating for support from outside resources.

ACTIVE FUNDRAISING

At the local level, RTA advocates for more funding and support for transit. There are numerous organizations that RTA engages regularly, some of which include:

- Editorial meetings with TV, print and radio to discuss pertinent issues
- Meetings with Greater Cleveland Partnership (GCP) Advocacy Committee and the GCP Board of Directors
- Downtown Cleveland Alliance Advocacy Committee
- University Circle Inc., Transportation Committee
University Circle Inc.,
- NOACA External Affairs Committee Meeting, Board of Directors, Transit Council, among others
- Cleveland City Council meetings and transportation committee meeting
- Cuyahoga County Council Meetings, including their transportation committee, and meet with Cuyahoga County leadership
- Cuyahoga County Council's Regional Transportation Advisory Subcommittee
- Cleveland Mayor's Office and staff
- Mayors and Managers Association meetings
- Clevelanders for Public Transit
- NEOSCC The Northeast Ohio Sustainable Communities Consortium
- GCP's Civic Connections
- Business members of Commute Advantage program

At the state level, continuous engagement includes:

- Local State Representatives and State Senators
- Ohio Public Transit Association
- ODOT Office of Transit and ODOT leadership
- Testifying before the Ohio House and Ohio Senate regarding more funding for public transit
- Governor's Director of Workforce Transformation to discuss transit



- Advocacy and statewide partnership with OPTA assisted in getting more funding in recent State budget

RTA engagement at the federal level in recent times includes:

- Meetings with Congressional Representatives and Senators
- Meetings with Federal Transit Administration leadership as well as FTA Administrator for Region 5
- Testifying before the Senate Finance Committee on the subject of clean fuels
- Testifying before the Senate Banking Committee on the subject of more funding for transit and rail car replacement

TRANSITSTAT

TransitStat is a data-driven performance management initiative implemented by RTA in 2008. TransitStat reviews areas identified by management as problems and then assigns responsibility to teams that propose and implement solutions. The TransitStat panel authorizes action and then follows up relentlessly to see that results are achieved. Since this internal program began, RTA has held over 300 TransitStat meetings, with over 1,000 presentations aimed at improving process. It has reduced costs by over \$75 million. This program has been replicated at other transit agencies and assess topics such as ridership, revenue, safety, on-time performance, reliability, customer satisfaction, and employee attendance. Efficiency programs like this show that RTA is continuously trying to improve internal operations.

FUEL PROGRAMS

RTA has been hedging fuel and slowly moving to Compressed Natural Gas (CNG) in order to reduce costs. The Energy Price Risk Management Program (aka Fuel Hedging Program) has helped to stabilize diesel fuel, one of RTA's most volatile expenses. Through this program, the cost of diesel fuel has remained steady. The U.S. has increased production of crude oil in the last few years and is now less dependent upon foreign sources. Between 2015 and 2018, RTA placed over 100 CNG buses into operation and retired older diesel buses, reducing fuel by nearly

\$883,000 in 2017 and an additional \$167,000 in 2018. By 2020, 27 new CNG buses are planned to be placed into operation and diesel fuel costs are expected to continue to decrease.

MOBILE TICKETING

In 2016, RTA launched the RTA CLE app for mobile ticketing that lets riders pay from their phones. This form of payment is an additional way to optimize transit's impact on the environment and provide a greater convenience to riders. Powered by a company called Passport, the app lets riders easily plan and pay for their trip on their phone. Transit riders can use the app's interactive map screen to coordinate their RTA ride ahead of time. Bus, rail, and paratransit customers can buy 1-Ride, All-Day, 7-Day, and Monthly Passes on the app.

Priority Corridors

The previous RTA Strategic Plan identified several Priority Corridors across Cuyahoga County that were recommended for investment. This section reviews these corridors by summarizing transit service, roadway features, connectivity, and adjacent land use. This review is a means of establishing the characteristics of past planning efforts and the potential for future opportunities.



1 Broadway Ave

4 E. 105/Turney

7 St. Clair Ave

2 Cedar Rd

5 Kinsman Rd

8 Warrensville Centre/
Harvard Rd

3 Detroit Ave

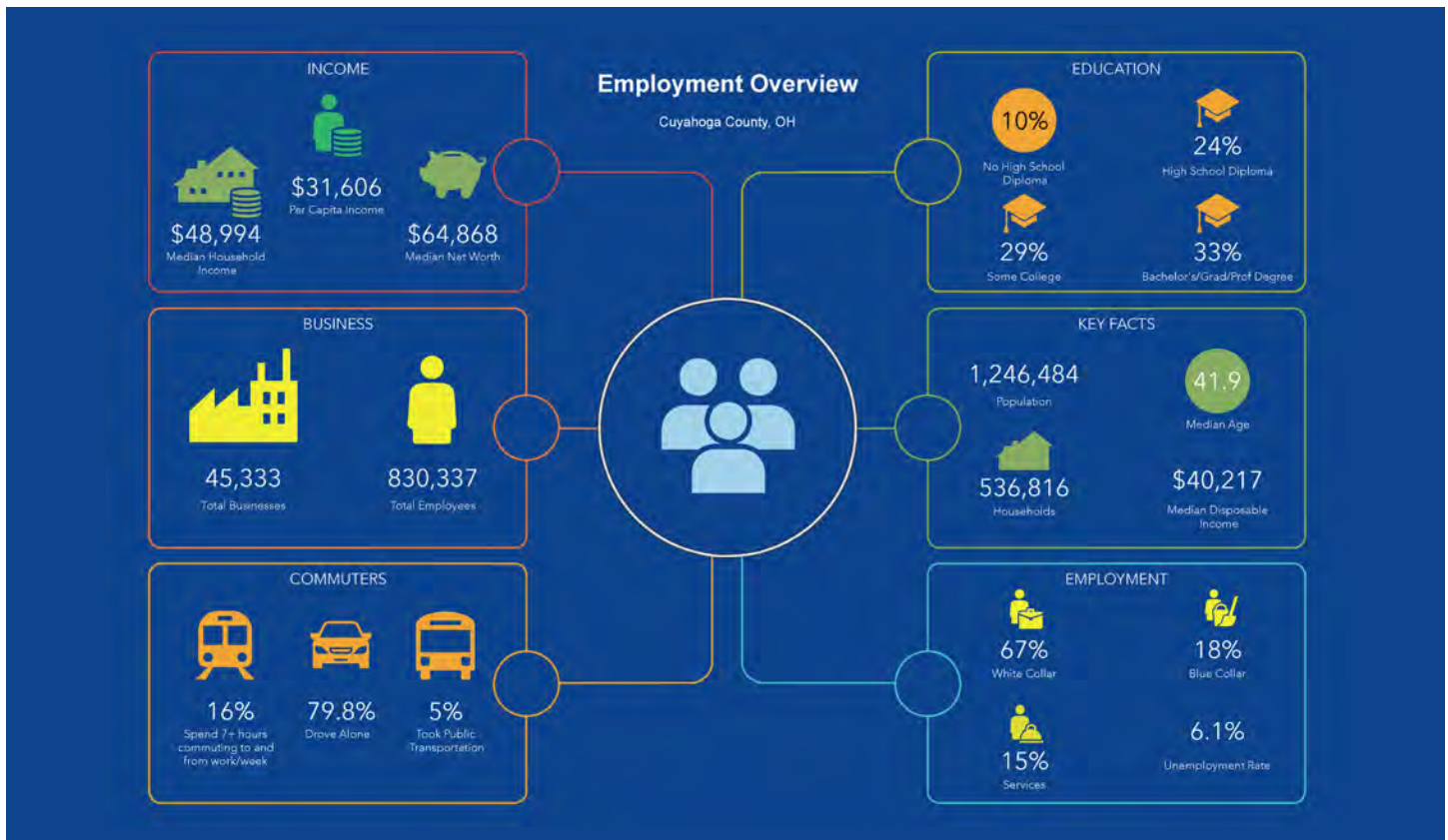
6 Lorain Ave

9 W. 25th/State Rd/
Pearl Rd



The table below summarizes the historical population trends for Cuyahoga County as well as the areas within the Priority Corridors. The following page displays an employment overview for Cuyahoga County.

OVERALL HISTORIC POPULATION						
		2000	2010	% change	2019	% change
Cuyahoga County	Population	1,393,979	1,280,122	-0.08	1,246,484	-0.03
	Households	571,457	545,056	-0.05	536,816	-0.02
	Housing Units	616,903	621,763	0.01	624,218	0.00
Broadway Ave	Population	18,623	15,135	-0.19	14,009	-0.07
	Households	7,064	5,994	-0.15	5,645	-0.06
	Housing Units	8,017	7,688	-0.04	7,800	0.01
Cedar Ave	Population	22,758	21,592	-0.05	21,869	0.01
	Households	10,037	9,298	-0.07	9,543	0.03
	Housing Units	10,632	10,391	-0.02	10,621	0.02
Detroit Ave	Population	40,586	37,539	-0.08	38,158	0.02
	Households	18,809	18,023	-0.04	18,509	0.03
	Housing Units	20,485	20,888	0.02	21,111	0.01
E. 105/Turney Rd	Population	29,012	19,683	-0.32	17,918	-0.09
	Households	10,513	8,306	-0.21	7,708	-0.07
	Housing Units	12,444	11,147	-0.10	11,396	0.02
Kinsman Rd	Population	17,674	13,075	-0.26	12,215	-0.07
	Households	6,466	5,047	-0.22	4,689	-0.07
	Housing Units	12,444	7,989	-0.36	6,613	-0.17
Loraine Ave	Population	41,122	37,067	-0.10	35,841	-0.03
	Households	16,715	15,815	-0.05	15,462	-0.02
	Housing Units	18,593	18,376	-0.01	18,375	0.00
St. Clair Ave	Population	36,450	28,444	-0.22	26,096	-0.08
	Households	13,773	11,544	-0.16	10,763	-0.07
	Housing Units	16,411	16,131	-0.02	16,250	0.01
W. 25th/ State Rd/ Pearl Rd	Population	40,361	38,584	-0.04	37,514	-0.03
	Households	16,357	16,180	-0.01	15,897	-0.02
	Housing Units	17,903	18,401	0.03	18,459	0.00
Warrensville Center/Harvard Rd	Population	20,131	17,846	-0.11	17,745	-0.01
	Households	8,207	7,807	-0.05	7,823	0.00
	Housing Units	8,638	8,663	0.00	8,752	0.01



OVERALL EMPLOYMENT INFORMATION

Corridor/Area	Businesses	Employees	Residential Population	Employee/ Residential Population Ratio (per 100 Residents)
Broadway Ave	818	15,934	14,009	114
Cedar Ave	903	22,357	21,869	102
Detroit Ave	1,621	18,117	38,158	47
E. 105/Turney Rd	426	23,001	17,918	128
Kinsman Rd	299	5,009	12,215	41
Lorain Ave	1,539	16,689	35,841	47
St. Clair Ave	3,040	67,761	26,096	260
W. 35th/ State Rd/ Pearl Rd	1,699	21,438	37,514	57
Warrensville Center/Harvard Rd	993	23,141	17,745	130
Cuyahoga County	45,333	830,337	1,246,484	67



The tables below display commuter information for Cuyahoga County as a whole and each of the individual Priority Corridors as well as the land use distribution in Cuyahoga County.

OVERALL COMMUTERS		
Corridor/Area	% Drive Alone	% Take Public Transit
Broadway Ave	76.6	7
Cedar Ave	76.7	3
Detroit Ave	73.5	8
E. 105/Turney Rd	67.6	18
Kinsman Rd	62.2	22
Lorain Ave	74.7	7
St. Clair Ave	61.5	15
W. 35th/ State Rd/ Pearl Rd	77.3	4
Warrensville Center/Harvard Rd	76.8	5
Cuyahoga County	79.8	5

CUYAHOGA COUNTY LAND USE	
Land Use	Percent Area
RESIDENTIAL	54%
PASSIVE GREEN SPACE	10%
INDUSTRY	7%
RETAIL	5%
TRANSPORTATION	5%
OTHER (<5% EACH)	19%

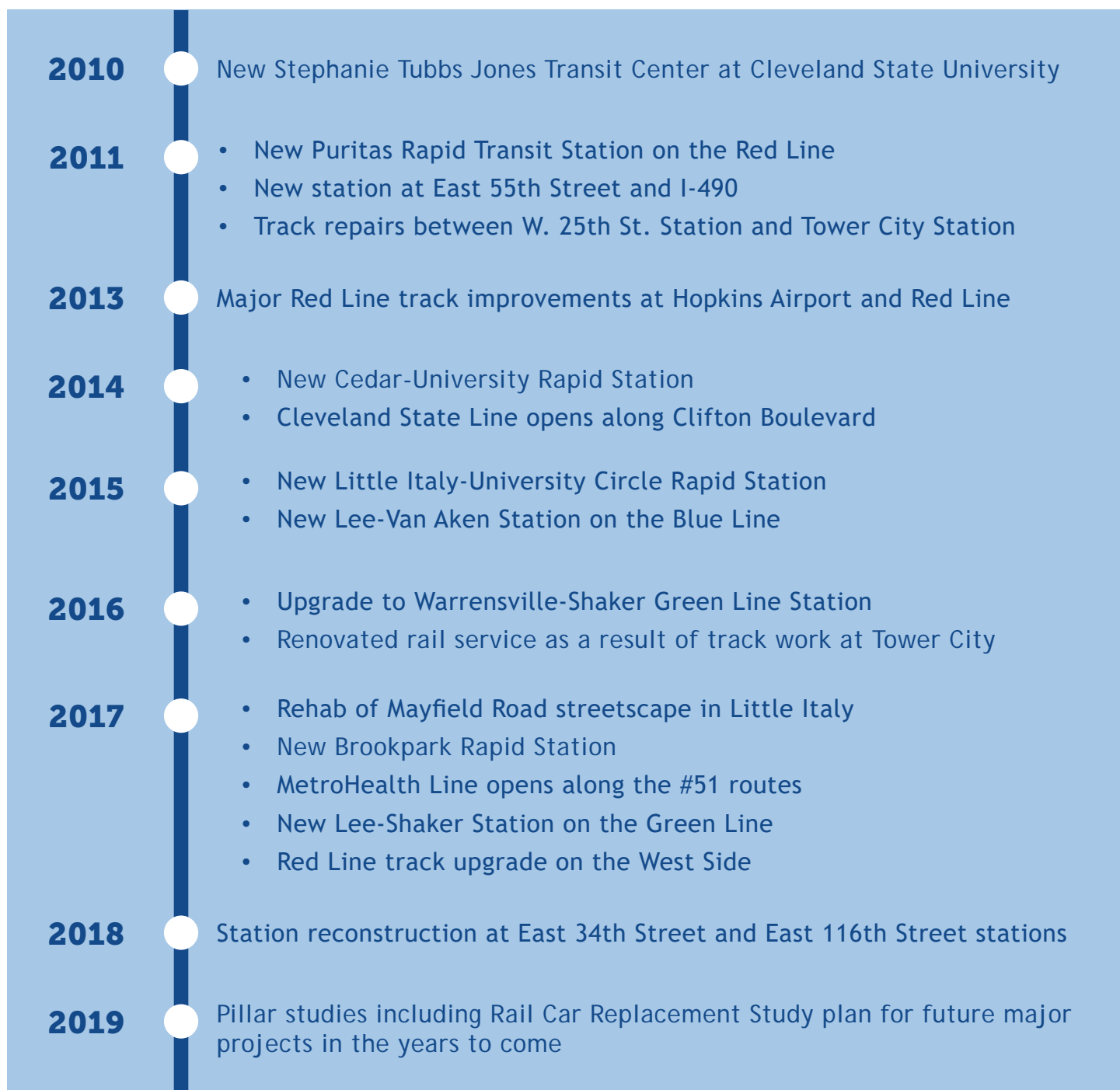
Individual analyses of previous Priority Corridors is located in the Appendix. Updated Priority Corridors for the next ten years are described later in the Strategic Plan report.

Capital Projects and State of Good Repair

RTA's focus in recent years has been on maintenance of its current assets and infrastructure rather than major new capital projects. Constrained finances require the agency to balance State of Good Repair with enhancing the transit system through new projects. The agency has maintained a balance prudently in recent years, with a number of system rehabilitation and enhancement projects completed.

Recent Capital Improvements

A brief timeline of key capital projects in recent years are shown below.



At the same time new stations were opened and major infrastructure repairs were made, less visible improvements to the system were also completed. Track bridge improvements, facility enhancements, purchases of new buses, transition to compressed natural gas vehicles, installation of bicycle racks on buses, ticket app development for customers' smart phones, equipment updates - these are just some of the items on a long list of enhancements in recent years.

State of Good Repair

RTA completed a Transit Asset Management (TAM) plan in 2018 in accordance with federal regulations. The plans must include capital asset inventories, condition assessments and investment prioritization. The agency manages over 15,000 capital assets, including:

350+	Buses
90+	RTA-owned demand response vehicles
92+	Rail Cars
68	Miles of One-Way Track
49	Rail Stations

The plan highlights that significant investment is needed to maintain the agency's infrastructure and additional funding will be needed. When transit assets are not in a state of good repair, the consequences include increased safety risks, decreased system reliability, higher maintenance costs, and lower system performance.

RTA implemented an Enterprise Asset Management System in 2004 and has updated assessments of assets repeatedly since then.

RTA is committed to conducting asset validation and condition assessment physical audits every two years. As of 2018 the assets included approximately 250-40' buses, over 60-60' buses, 12 trolley vehicles, over 20 MCI over-the-road coaches.

Bus Replacement Program

RTA has a plan in place to purchase new buses and retire old ones over the next five years. Below is a brief summary of purchases that are planned.

2019

- 45' MCI Commuter Diesel - Buy 9 vehicles

2020

- 60' low-floor artic - BRT (5-Door) - Buy 10 vehicles
- 40' low-floor CNG - Buy 25 vehicles
- Paratransit Coach 24' - Buy 20 vehicles
- Paratransit Van - Buy 3 vehicles

2021

- 60' low-floor artic - BRT (5-Door) - Buy 10 vehicles
- 40' low-floor CNG - Buy 20 vehicles

2022

- 60' low-floor artic Diesel (3-Door) - Buy 13 vehicles
- 40' low-floor CNG - Buy 20 vehicles
- Paratransit MV-1 type - Buy 20 vehicles

2023

- 45' MCI Commuter Diesel - Buy 6 vehicles
- 40' low-floor CNG - Buy 15 vehicles
- Paratransit Coach 25' - Buy 15 vehicles
- Paratransit Coach 27' - Buy 7 vehicles

2024

- Paratransit Coach 25' - Buy 15 vehicles

NOACA's Long-Range Transportation Plan AIM Forward 2040 identifies RTA bus replacements on its list of major projects. Between the years 2018-2040, NOACA plans for \$20 million annually for bus purchases. A total of approximately \$460 million for RTA bus vehicles aims to maintain the bus fleet in line with the plan's goals to invest in transit.

As the Strategic Plan progresses towards recommendations, discussion will pertain to the potential to transition RTA's fleet towards zero-emissions vehicles in order to promote sustainability.

Facilities

NOACA's Long-Range Transportation Plan identifies Cleveland's Multimodal Transportation Facility on its list of major projects. This new facility aims to enhance the transportation network and has a total estimated cost of approximately \$47 million. Planned to be located west of E. 9th Street near the lakefront, the facility will include Amtrak, Greyhound, RTA Services (Waterfront Line, Downtown Trolleys, and regional express buses), regional transit buses (RTA, Akron Metro, Laketran), other transportation services (shuttle buses, taxis, rental cars, bike share, etc.), associated services and amenities, and potential joint development opportunities.

NOACA's major projects list also includes approximately \$50 million in the year 2020 for new transit facilities as part of the Thrive 105-93 project. This project will develop a transit corridor along East 105th, Woodhill Road, and East 93rd Street to link people, place and opportunity. It will link key economic and community assets, leveraging land flanking the corridor and extend the economic development benefits of the planned Opportunity Corridor. This project is sponsored by City of Cleveland in order to enhance the transit system.





Intelligent Transportation Systems (ITS)

The NOACA Regional ITS Architecture is a roadmap for transportation systems integration in the five county NOACA region (Cuyahoga, Geauga, Lake, Lorain, and Medina counties) over the next 15 years. The Regional ITS Architecture provides a starting point for project definition. Planned projects listed for RTA include:

RAIL TRANSIT OPERATIONS - LIGHT RAIL OPERATIONS CENTER

Light rail option for special events occurring at the stadiums to help alleviate special event traffic congestion downtown.

RTA / LAKETRAN AVL SYSTEM

Installation of AVL on all RTA and Laketrans vehicles.

RTA KIOSKS AT TRANSFER POINTS

RTA to establish kiosk inside CVG airport to assist out of town users in finding their way using public transit.

RTA / LAKETRAN TRANSIT VEHICLE UPDATES

Installation of Wireless Internet Feed on buses, automated signs, and annunciators.

RTA BUS TRAFFIC SIGNAL PRIORITY

Study key transit corridors for applicability of bus traffic signal priority to improve transit travel time. Implement transit signal priority on traffic signals on identified corridors.

RTA PASSENGER MANAGEMENT SYSTEM

System that provides fare reconciliation between peer agencies using a common travel card.

RTA SURVEILLANCE CONTROL

To include CCTV at certain locations to provide surveillance at stations and surrounding areas along Euclid Corridor.

LAKETRAN ADVANCED PARA-TRANSIT SCHEDULING AND DISPATCH SYSTEM

Implement an advanced para-transit scheduling and dispatch system at Laketrans coordinated with RTA.

Capital Improvement Plan

RTA's 2020-2024 Capital Improvement Plan (CIP) plans for a total of almost \$600 million in capital project needs.

2020 - 2024 COMBINED CAPITAL IMPROVEMENT PLAN

Project Category	2020 Budget	2021 Plan	2022 Plan	2023 Plan	2024 Plan	2020-2024
Bus Garages	\$0	\$0	\$700,000	\$4,312,665	\$1,662,800	\$6,675,465
Bus Improvement Program	\$21,305,000	\$21,906,000	\$22,062,000	\$20,960,000	\$20,960,000	\$107,193,000
Equipment & Vehicles	\$1,459,702	\$1,645,418	\$3,065,687	\$1,143,984	\$952,000	\$8,266,791
Facilities Improvements	\$14,779,683	\$13,913,599	\$12,214,094	\$15,002,330	\$15,229,500	\$71,139,205
Other Projects	\$2,459,576	\$2,459,576	\$2,459,576	\$2,459,576	\$2,459,576	\$12,297,880
Preventive Maint./ Oper. Reimb.	\$20,000,000	\$20,000,000	\$20,000,000	\$20,000,000	\$20,000,000	\$100,000,000
Rail Projects	\$32,954,362	\$30,030,973	\$31,250,000	\$31,250,000	\$23,250,000	\$125,000,000
Rail Car Repl. Program	\$8,000,000	\$31,250,000	\$31,250,000	\$31,250,000	\$31,250,000	\$125,000,000
Transit Centers	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$1,500,000
TOTALS	\$101,258,321	\$121,505,566	\$121,249,037	\$123,020,841	\$122,502,957	\$589,536,722

The CIP identifies \$445 million in unfunded projects to the year 2024.

- Rail Vehicles: \$192M
- Rail Facility & Infrastructure: \$ 28M
- Track Rehabilitation: \$ 31M
- Bus Improvement: \$ 63M
- Engineering, Passenger, Facilities: \$ 61M
- Technical Support: \$ 46M
- Bus/Rail Maintenance Facilities: \$ 6M
- Bridges, Stations, Equipment, Other: \$ 18M

As the Strategic Plan progresses, recommendations will summarize future priorities.

Transit Technology

The RTA's Strategic Plan aims to refresh the agency's vision and goals to reflect the current and future needs of the stakeholders. Technology plays a major role in many aspects of today's transit operations. Transportation technologies are changing on a daily basis with new technologies emerging all the time. Technologies once considered state of the art only a few years ago are reaching obsolescence or being surpassed by improved products. At the same time, transit agencies need to adopt established, proven technologies that have a definable benefit to improve the operation, efficiency, and customer experience of the transit system. Technologies can provide a variety of benefits, such as increasing access to transit options, improving safety, increasing trip speed, and improving travel time reliability. A simple and seamless transit system provides freedom for travelers to use the transit network to meet their daily needs.

TYPES OF TECHNOLOGIES

Transit technologies are abundant and wide-ranging, so one way to guide a discussion is to utilize general categories. Established, new, and emerging technology available to transit agencies include a variety of categories:

- Safety systems designed to reduce collisions with vehicles, cyclists, and pedestrians;
- Accessibility features and services that make trips easier for the elderly and travelers with disabilities;

- Environmental Sustainability technologies that reduce fuel consumption and emissions;
- Fare Collecting and Processing systems that enable easier payments across multiple modes;
- Traveler Information and technologies that provide users with actionable trip planning options prior to and while completing transit trips;
- Emerging Mobility that may complement traditional transit service.

There are many more categories across transit operations that could be addressed, but these categories provide a broad overview of technologies that help provide fast and reliable trips to improve the customer experience and enhance RTA's service. This overview of technology considerations will foster discussion of potential recommended technologies for RTA to consider.

Safety

Safety systems are designed to reduce collisions with vehicles, cyclists, and pedestrians as well as provide personal safety for passengers. To accomplish this, different technologies exist to enhance safety within the transportation system. Traditional safety technology is either an active system with direct monitoring at a central hub or a passive system where the technology surveys the environment and provides notification only if there is a problem. On the emerging technology front, autonomous and connected vehicle technologies have the potential to decrease human error and replace it with different levels of autonomy with built-in safety protocols. Smart transportation infrastructure also provides information to ensure that all users of the system are aware of accidents, incidents, or other disruptions.

Traditional transit safety technology includes monitoring of the system and environment to provide warnings if obstacles are detected. Cameras, vehicle diagnostic systems, and supporting infrastructure provide active monitoring of the system and report information for review and action back to a central hub. Other systems scan the space surrounding the transit vehicles to deliver warnings to the operator or other individuals when the system detects an unsafe action or conditions. Transit providers can use this information to make quick decisions to



respond to incidents such as detours, dispatching additional resources, and/or customer notifications in order to improve the travel options and experience for passengers.

Accessibility

Accessibility features and services are those that make trips easier for older adults, travelers with disabilities, or others who lack the resources to travel freely. Customer-facing technologies are those hardware and software packages that focus on improving the ease of seniors and disabled individuals to interact with and access the system. Traditional technologies that fall into this category include but are not limited to: trip reservation systems, stop announcements, and audible signals. Emerging customer-facing accessibility technologies include the introduction of interactive wayfinding technologies for persons with disabilities and older adults as well as other assistive information devices.

One example of emerging technologies can be seen in USDOT's Integrated Dynamic Transit Operations (IDTO) project. This technology includes several smartphone applications that would increase accessibility of users to transit providers. Applications under IDTO include Connection Protection (T-CONNECT), Dynamic Transit Operations (T-DISP), and Dynamic Ridesharing (D-RIDE) - each application is designed to enhance coordination between riders and transit services to improve accessibility to transit options and service efficiency through the use of cellular technology. These applications increase the accessibility to accurate transit data and ultimately mobility services.

Accessible Transportation Technologies Research Initiative (ATTRI) is one program used to increase accessibility throughout transit services. This project seeks to enhance mobility for people with disabilities through the use of emerging technologies. Some of the technologies that may be used to improve accessibility include wayfinding and navigation applications, V2V/V2I technology, real-time trip planning services, intelligent transportation systems (ITS), assistive technology, one-fare payment applications, automation, robotics, data integration, and enhanced human services transportation. Implementing these technologies can improve quality of life by providing greater accessibility to seniors and people with disabilities. There are also some challenges associated with integrating transit technologies through the use of smartphones, as some individuals may not be able to afford smartphone data plans to utilize apps.

Environmental Sustainability

Environmental technologies improve sustainability by reducing fuel consumption and emissions. They are designed to improve the operational efficiency of the system to reduce greenhouse and carbon gas emissions. In its basic form, environmental technology options consist of improving overall fuel economy through more efficient engine designs and lighter vehicles, reduced particulate pollution through advancements in catalytic converters, and alternative fuel vehicles. Emerging environmental technologies



focus on improvements to the overall transportation network through vehicle-to-infrastructure communications. Specifically, eco-signal preemption/priority applications evaluate traffic and environmental parameters at each intersection in real time and adapt to ensure the traffic network is optimized using available green time to serve the actual traffic demands while minimizing the environmental impact.

Traditional environmental technology applications in transit focus primarily on addressing the environmental impacts associated with the transit vehicles. Overall, transit vehicles today are much cleaner and more efficient than previous design iterations. New emission standards and fuel economy requirements for transit vehicles have resulted in a significant reduction in the amount of pollution they produce. This does not stop the transit industry from exploring and implementing alternative fuels to achieve greater efficiency and reduction in the environmental impact of the transit system. An alternative fuel vehicle is a vehicle that runs on substances other than the conventional petroleum gas and diesel. Examples of alternate fuels include electric, solar, biodiesel, ethanol, propane, compressed air, hydrogen, liquid natural gas, and liquid petroleum.

Compressed natural gas is a prominent fuel alternative that RTA is transitioning toward, with conversion from diesel to CNG fueling at the Triskett District facility. The east-side Hayden Garage has had the capability to refuel CNG buses since 2015. RTA now has well over 100 CNG buses in its vehicle fleet. While CNG emits reduced levels of greenhouse gases, many agencies are aiming higher by investing in zero-emissions vehicles. A strong trend in the transit industry is a gradual shift towards electric buses.

Fare Collection & Processing

Fare Collection and Processing refers to systems that enable payments for transportation services. Advancements include payments that are seamless and easy across multiple modes, as well as enhanced access for unbanked households.

Transit fare payment is the compensation provided by the customer in return for use of the service. Fares are either paid on the transit vehicle or at the transit

station/stop/terminal prior to boarding the vehicle. Cash-based systems limit fare options to one-way passes with or without transfer tickets, with some systems offering multiple-ride tickets verified by manual ticket punches. As technology has improved, a number of cash lockboxes have been replaced with smart fare boxes that include automatic bill/coin validators and bus pass readers via magnetic strip, smart chip, and/or radio frequency identification devices (RFID). A major benefit of upgrading fare systems is improved efficiencies and decreased passenger delay at transit stops. The major drawbacks are the back-end support programs that must be added to implement a smart fare system and the challenges associated with encouraging customers to use a new fare type.

Technology opens the door to new fare types such as unlimited-ride or value-added cards, where customers can choose the amount of fare they want to purchase. Fare technologies improve the efficiency of the system by replacing single ticketing booths to multiple ticket vending machines and reduction of passenger delay at transit stops by speeding up the customer interactions with the fare boxes. In addition to quicker and easier transit boarding, emerging processes for fare collection open up the potential for seamless integration of mobility services across multiple modes and providers.

Traveler Information

Traveler Information technologies provide users with actionable trip planning options prior to and while completing transit trips. Traveler Information for transit systems focuses on providing front facing applications and programs to help customers navigate the fixed-route or paratransit system. The goal is to provide reliable and accurate systems that enable customers to plan their trips and know when their bus is coming. Traditional technology employed by transit agencies in this space includes trip planning software, trip reservation programs, and real time location. In addition, it includes automatic stop announcements on the bus. Traveler information is provided through geographic position system (GPS) based technology with the information relayed to supporting applications that distribute it to customers through websites, digital displays at stops/stations

and smartphones. Emerging technology integrates the traveler information with the connected vehicle infrastructure to improve the accuracy of the information as it relates to real-time traffic information and broadcasts the information directly to the customers.

Trip planning programs changed all of this by using GPS information contained in scheduling software used by transit agencies. First developed by Google, General Transit Feed Specification (GTFS) provided the standard format to display scheduling and runcutting outputs used by transit operations in a customer-friendly format. Now, customers could plan transit trips from their house to their destination to get over-the-road directions. This eliminated some of the confusion associated with transit, and opened the door for new riders to try the system.

While trip planning software laid the foundation to demystify transit, automatic vehicle location makes the system easier to use. Real-time vehicle location uses either information provided by MDTs or standalone devices to track schedule adherence to show customers where their bus is and when it is expected to arrive at their location. With this technology, customers are no longer bound to the ride guide or even trip planners to prepare their itineraries and are allowed to be more spontaneous in using transit. Real-time bus locations provide more freedom in using transit by allowing customers greater flexibility regarding when they need to leave their location to arrive at their bus stop. It also quickly provides customers information on any delays, detours, or other obstacles affecting the operation of the system. In current applications, real-time bus location is available online, in smartphone applications, and at bus stops on variable message boards.

Emerging Mobility

Emerging Mobility refers to new technologies that are giving rise to service that may complement traditional transit. One technological trend that has been growing in recent years is the rise of shared mobility providers. Shared modes of transportation include rail, bus, bike-sharing, car-sharing, and ridesourcing. Ridesourcing companies, such as Lyft and Uber, offer an efficient way for people to travel

when other transportation options may not be feasible. Car-sharing companies, such as car2go and Zipcar, offer an opportunity for people to freely use a rented automobile without the commitment of owning a personal car. Additionally, bike-sharing companies offer an opportunity to resolve first- and last-mile gaps while promoting healthy and sustainable mobility solutions.

Shared mobility services can often be utilized and scheduled through the use of mobile apps, which increases accessibility for a wide range of consumers. While data is limited, shared modes of transportation have the potential to provide multiple benefits, such as reducing overall transportation costs, complementing existing public transit services, and resolving many first- and last-mile gaps, which ultimately increases overall mobility in communities. As the use of shared mobility technology continues to become more integrated in society, continued coordination between public and private agencies appears inevitable. Many organizations are also hoping to improve mobility options for transportation disadvantaged populations, and improving paratransit services through emerging transit service models is a viable option for agencies.

Mobility as a Service, discussed elsewhere in this report, is an exciting concept to improve ease of access and paying for transportation.

NEW RTA TECHNOLOGIES

RTA was awarded a grant to upgrade its existing on-board vehicle equipment and radio system in 2017. A key customer service result of these upgrades is complimentary wireless connection access for mobile devices on all buses and trains. With upgrades set to be complete in late 2019 and 2020, the project has four main objectives:

- **Increase rider and operator safety** - replacing existing onboard technology will improve communication with RTA's integrated communications center (ICC) and public safety forces (police/fire/EMS) in real time. A turn-by-turn navigation system will better assess operator driving performance, more accurately monitor emissions, and provide navigation services to

operators, while interfacing with existing RTA computer systems.

- **Provide real-time information** - new software will provide passenger updates including live tracking and estimated departures from specific stop locations for bus and rail. Upgrades will allow for passenger updates every 15 seconds (as compared to the previous three minutes). Data will be in an “open” format where application developers can utilize information. Real-time weather, news, and community information will be delivered through LCD screens at train stations, transit centers, and on vehicles.
- **Enhance the rider experience** - onboard audio announcements will be updated in a timely manner and announcements will be made in multiple languages. Travel times will be more accurately monitored and will allow for RTA to identify areas to improve on-time performance. Buses will be equipped with monitoring software that will identify maintenance issues, reducing repair costs and decreasing vehicle failures on the road. Automatic passenger counters (APC) will be used to record passenger loads on specific routes and times of day to effectively plan scheduling to meet riders’ needs.
- **Implement connected communication** - RTA will replace the current radio system with cellular technology. The computer aided dispatch and automated vehicle locator (CAD/AVL) system will utilize voice over internet protocol (VOIP) and better communicate within the organization itself, as well as with each community that RTA services.

These upgrades create exciting opportunities in customer enhancements and connected vehicle technologies to improve transit service in the years ahead.

AUTONOMOUS VEHICLE PILOTS

Of all vehicle technologies, the idea of autonomous vehicles captures the most headlines. There are many companies that have been developing and deploying autonomous technologies on a global scale, such as 2getthere, EasyMile, and Daimler. These autonomous technologies have the potential to improve safety,

reduce the overall cost of transit implementation, decrease congestion, and be more eco-friendly than the majority of vehicles commonly used today. Additionally, they have the ability to complement existing transit systems to resolve first- and last-mile barriers. Many of these AV vehicles are being deployed in urban centers, transportation hubs, healthcare hubs, retirement communities, convention centers, recreation spaces, theme parks, universities, business parks, and industrial areas.

Las Vegas was the first city in the U.S. to test a fully-autonomous shuttle within real-time traffic in November 2017. The shuttle was created by Navya, an autonomous vehicle manufacturer. The shuttle operated on a 0.6 mile loop around downtown Las Vegas and stopped at three locations to provide free rides to people within the city’s Innovation District.

One agency that has been making notable progress into the realm of AV technology is the Jacksonville Transit Authority. Since JTA’s existing Skyway system (an automated people mover) was due for a complete overhaul of its vehicles, JTA decided to research alternatives to replacing the monorail vehicles that would also promote future plans for expanding the Skyway system to surface level. Ultimately, JTA determined that investing in an AV system was a viable option given the technology’s capabilities, emerging trends, and overall financial savings of its integration and has conducted limited testing of autonomous shuttles.

There are a variety of transit agencies that are partnering with technology providers to enhance mobility and safety in their communities. In one example, the Contra Costa Transportation Authority (CCTA) in San Ramon, California initiated a project to deploy AV shuttles to be used within a local business park. CCTA partnered with an autonomous vehicle manufacturer and property development company to deploy two EasyMile Shuttles.

Each year, more transit agencies and cities create headlines by launching autonomous shuttle pilots. From Columbus, Ohio to Boston, Massachusetts to Lincoln, Nebraska and many others, autonomous pilot projects are testing technologies using real-world environments. In many ways, these tests show the limitations of autonomous shuttles in their current

state, with slow speeds and difficulty navigating common roadways. On the other hand, the rapid advancements in autonomy point to a continual evolution of technology to enhance the variety of services that transit agencies provide.



New Mobility

There are fundamental changes for transportation underway and on the horizon. Emerging technologies are coming together at an unprecedented pace in ways that will shift the underlying assumptions about and operation of our transportation network. New mobility options are beginning to emerge as massive corporate investment is pairing with technological advancement and new approaches in transportation network analysis and design.

Below is a general overview that serves as a summary snapshot in time. Since things are changing so rapidly, it is certain that progress will quickly remake what we see today. There are many factors in new mobility that will affect transit service both positively and negatively. The following are some of the most impactful.

TRANSPORTATION NETWORK COMPANIES

Companies such as Uber and Lyft use online platforms to connect passengers to drivers who use their own vehicles. These ride-hailing or ridesharing companies are codified by regulatory agencies as Transportation Network Companies (TNCs) in California and many other locations. They are referred to by other names as well such as Transportation Network Providers (TNPs) in Chicago.

Uber provides approximately 14 million trips a day across six continents and over 700 cities.

Success at a Price

To remain competitive among transportation providers, Uber and Lyft have lowered fares and service fees to customers. At the same time, they have offered driver incentives and consumer discounts and promotions. These companies and competitors have distorted the cost of transportation as they compete in the rapidly evolving, but as yet unprofitable, transportation market. Both companies state that their future innovative offerings aim to include autonomous vehicles. Uber is also exploring delivery drones, and vertical takeoff and landing vehicles. Once autonomous vehicles are feasible, Uber's and Lyft's business models will theoretically be on much more solid footing. Each company went public in 2019, but at the time of this writing the

future of each company’s financial outlooks are uncertain. Even so, it is impossible to deny that these companies and their technologies have been a massive success for customers and have left an impact on the transportation landscape. Pilot partnerships with transit agencies and integration with transit services have become more prominent in recent years and the relationship between transit agencies and TNCs continues to evolve.

HARNESSING INNOVATION FOR PUBLIC GOOD

In 2018, RTA entered into a partnership on a pilot program with Lyft to provide paratransit customers with a new transportation option. By supplementing RTA service with Lyft, RTA was able to drive down the average cost of service from \$40 per trip to \$8.49. From April 4th to June 30th, 2018, there were 1,676 total rides as part of this pilot program with a savings of \$52,000. It is prudent to continue to explore innovative partnerships that build on this success in ways that advance RTA’s goals while also minimizing potential risk.

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.

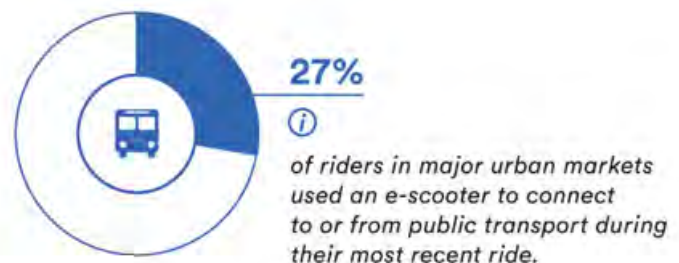
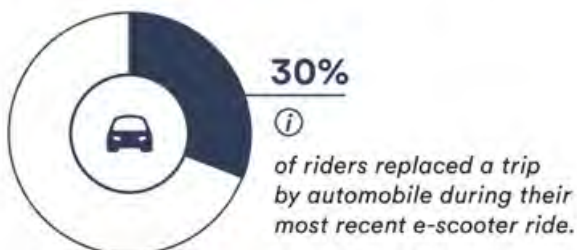
Micromobility is typically thought of as smaller personal transportation devices that are part of a shared network. These docked and dockless bikes, e-bikes (bikes with electric assist motors), and scooters function in different ways than other more prevalent modes such as cars and buses. They are small in size (hence “micro” in the name) 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 in inappropriate locations, it is also true that 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.

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. Information released by Lyft indicates that 30% of riders used their scooter ride to replace a car trip and that 27% used the ride to connect to transit.

In only the last 12-18 months have scooters been introduced to cities across the nation. In some cities it was truly overnight that hundreds or thousands

WHY ARE RIDERS USING E-SCOOTERS

● Car rides ● Public transport





UPS Tricycle Delivery Vehicle

of scooters appeared on streets. And they didn't just appear, but were immediately embraced by users even while giving heartburn to cities who were forced to scramble to create policies and practices to deal with the negative aspects. In 2018 alone, over 38.5 million scooter rides (out of 84 million shared micromobility trips) were taken in the US.¹ The speed with which scooters appeared in many cities indicates how quickly new changes in transportation can now occur.

MICROMOBILITY IN FREIGHT AND DELIVERY

Related to micromobility beyond transportation for people, small-scale delivery devices will quickly alter the way package delivery works, having further effects on the overall function of urban traffic, freight, and related land uses. There are two categories currently being tested in markets throughout the world. The first are small-scale delivery devices that include a human participant to drive the vehicle and make deliveries. In one example, UPS is in the process of testing electric tricycles for delivery in Seattle. This type of smaller, slow-speed vehicle intermixes easily with other

slow-speed vehicles on the roadways, and can also blur the lines between public rights-of-way use with the ability to travel on sidewalks and other pedestrian areas.

The second are "terrestrial drones" that operate autonomously for package delivery. At the larger size of these devices, Kroger is testing autonomous delivery with Nuro self-driving vehicles. This is now occurring in Houston as an added city to the successful pilot project in Scottsdale, Arizona².

The development of autonomous delivery vehicles coincides with a rapid increase in online sales and the related spike in package delivery to homes and businesses. This includes not only retail goods, but also meal delivery with options such as Uber Eats and Grubhub reframing the typical perception about the variety of options and convenience of home food delivery.⁵ And the deployment of these vehicles might come in ways that we don't currently envision with Amazon contemplating roving "home base" trucks that can then deploy these small drones to blanket a neighborhood with deliveries and then return to the truck to reload.⁴

The potential future of increased urban delivery devices of all shapes and sizes raises questions about the possible impacts to fast, reliable, safe transit service. Policies that delineate RTA's and municipalities' use and regulations of public right-of-way will become more important in a future so ripe with innovation.

CONNECTED VEHICLES AND 5G

Connected Vehicles (CVs) are cars, trucks or other mobility devices that have embedded technology to allow communication with each other (vehicle to vehicle - V2V) and/or with surrounding infrastructure. This allows vehicles to work in an integrated and predictive system, accomplishing many improvements to operation and safety. Previous efforts have used a variety of technologies to accomplish this connectivity, most frequently with dedicated short range communication (DSRC) devices. However, recent advances in 5G technology, coupled with private sector investment and federal changes in spectrum allocation indicate that 5G may become the leading technology for 5G.

5G is the latest iteration of cellular technology, engineered to exponentially increase the speed (up to 100 times current levels) and responsiveness of wireless networks. 5G will facilitate a massive increase in the amount of data transmitted over these networks. 5G is designed from the ground up to support the Internet of Things (IOT) and in addition to delivering faster and more data, it will help connect everything from autonomous vehicles and medical equipment to smart trash cans and intelligent lighting. This increased speed and capacity will require extensive infrastructure investments including “vertical real estate,” like towers and other tall structures and new data centers to process the increased information load.

5G is an enabling technology that allows communication between devices, but C-V2X is the critical application that allows for the connectivity between vehicles and everything else. C-V2X, which was standardized in 2017, is designed to connect vehicles to each other, to roadside infrastructure, to other road-users and to cloud-based services. The application of C-V2X will have a wide ranging impact on transportation and the provision of transit.

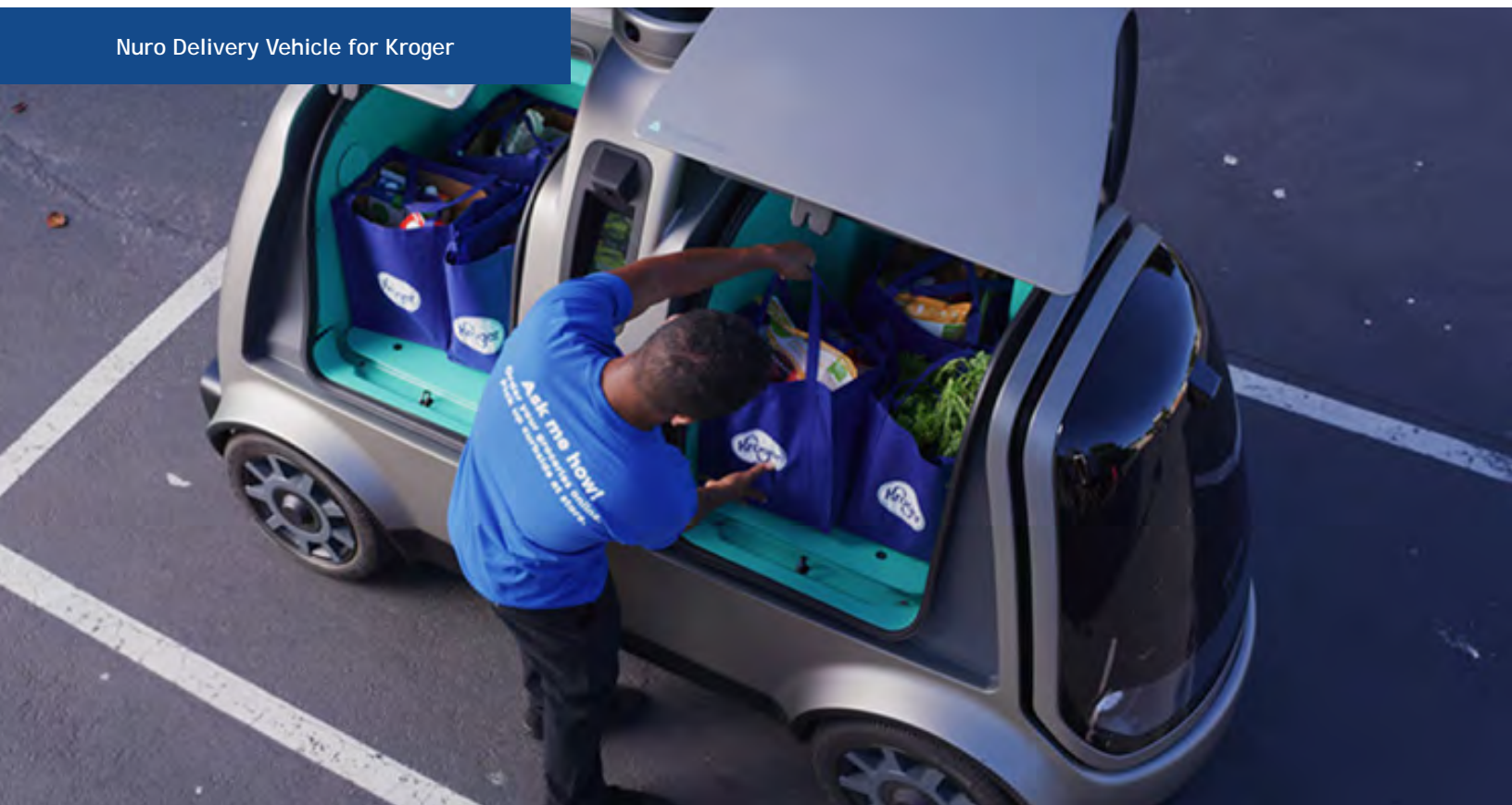
C-V2X allows for critical applications to be deployed which will potentially allow for a decrease in

congestion, a reduction in roadside crashes and fatalities and the ability to create real-time demand-based tolling systems to change driving behavior in highly dense urban areas. C-V2X applications are now being tested by an assortment of leading automotive companies such as Audi, Toyota and the PSA Group along with technology infrastructure companies such as Qualcomm, AT&T, Verizon and Nokia. Ford announced at CES 2019, that all of their global fleet will adopt C-V2X technology by 2022.

AUTONOMOUS VEHICLES

Autonomous Vehicles (AVs) are rapidly advancing through a large number of real-world tests, and we now see every major auto manufacturer developing driverless technology. Waymo, Cruise Automation, Tesla, Apple, Zoox, Aptiv, May Mobility, Pronto.ai, Aurora, and Nuro, are some companies developing autonomous vehicle technologies, either alone or through collaborations with car manufacturers. While there is uncertainty about the pace of rollout and AV adoption, it is a technology that could have a profound impact on cities in many ways. Adaptation of our transportation network, infrastructure and site design are some of the tasks that will be required. While the effects on transit, roadway usage, demand and capacity, along with parking and site design

Nuro Delivery Vehicle for Kroger



won't be seen immediately, the rapid development of the technology should compel communities to begin planning for the potentially substantial changes that it will bring.

Overview of deployment models

The speed of adoption and eventual adoption rate of each of these models will have far-reaching consequences. At this time, there are three emerging models of future autonomous vehicle deployment.

- **Ownership model** - An ownership deployment model is centered around individually or family-owned vehicles, each capable of a high level of autonomous driving. While similar in some ways to our current system, it offers more flexibility in managing parking at certain destinations. With this system, parking no longer is necessary within close, walkable proximity to the destination land use. If the car is capable of fully-automated driving, individuals would drive or be driven to a destination, and the car could then drive autonomously to a parking area, or even back to its origin. This model could allow better distribution and management of parking, and a better use of underutilized areas.
- **MaaS / TaaS - Mobility as a Service (MaaS) or Transportation as a Service (TaaS)** is a model that operates as an on-demand taxi service. The current deployment of this model is the Transportation Network Company (TNC) or a Mobility Service Provider (MSP), currently embodied by companies such as Uber and Lyft.

In this model, mobility is no longer achieved through owning a vehicle, but rather utilizing a transportation service. The direction of this technology eventually suggests a fleet of privately operated autonomous cars able to orient themselves to ferry users around the city. Rides can be shared among multiple users to reduce cost. Even the format or shape of the vehicle can change dramatically from the current format of consumer vehicles. A hallmark of this system would be an increase in the utilization of employed vehicles (individually owned vehicles are currently averaged at 5% utilization), with a potential reduction in the total amount of vehicles needed by a substantial amount. Two models of MaaS/TaaS vary slightly. A subscription service may provide access to a certain on-demand vehicle owned by a certain company, for example. On the other hand, MaaS/TaaS can be envisioned as access to integrated services across modes with easy trip planning and payment combined in a single user interface on a smartphone, for instance. The model driving current rideshare businesses is the former, and it is expected that initial automated vehicle deployment will follow a similar subscription model. Conversely, many public agencies are aiming to support access to integrated services as a matter of public policy to increase access to transportation and enhance the efficiency of the overall transportation system.

- **Transit** - The current models of transit have potential to be affected by the rise of autonomous technology. While it is unlikely that fixed-asset transit such as inter-city rail, streetcars, or heavily used buses will be seriously transformed, the current model of bus transit will likely change. The current generation of autonomous microshuttles give us a glimpse into the direction of future autonomous transit models. Various companies are already producing vehicles capable of carrying 10-14 passengers in open traffic scenarios. A microshuttle system would be able to deploy more vehicles at times of higher demand, making better use of each trip, and offering riders more frequent service. Microshuttle transit options are being tested around the country and continue to evolve.



FedEx Delivery Robot⁵



Amazon Scout Delivery Robot⁶

CURB MANAGEMENT

Curb management is a topic gaining more and more interest as mobility modes shift. It is centered around the idea that there will be more and more competition for the curb as more shared mobility and various levels of autonomy become prevalent. For individuals, once you no longer have to stay with the vehicle you arrive in to find it parking, you'll prefer to be dropped off closer to the door of your destination. We are already seeing this with the use of ride-hailing services such as Uber and Lyft. The issue will increase as individual cars become able to park themselves as standard practice, and as autonomy makes the shared model the dominant choice in denser areas. Urban freight delivery mechanisms such as the micro-delivery robots discussed earlier, along with likely even more delivery trucks, are arriving at the same time that passenger mobility is changing.

Management of curb space has great implications for transit agencies such as RTA. Buses rely on dedicated locations on the curb that are free of obstruction for passengers to be able to quickly board and alight. Policies and technological enforcement solutions will become more important in a future where curb space becomes more valuable.

UNKNOWN FUTURE DISRUPTORS

The pace of transit technology change is rapidly moving ahead to ideas thought inconceivable just a few years ago. Some trends lean toward a continual merging of modes, with the potential for seamless integration between traditional mass transit and personal vehicles. Behind new ideas are the age-old desires of the traveling public - fast, easy, and comfortable transportation between point A and point B. The following sections describe the potential for exciting developments in transit technology.

Hyperloop

Rarely does a transit technology emerge so quickly in the public consciousness and receive so much media coverage as hyperloop has in the past few years. Simply put, hyperloop is a system composed of a vacuum and magnets to propel vehicle pods through a tube for long distances at speeds over 700 miles per hour. Since Elon Musk revived the longstanding concept of high speed travel in a vacuum in recent years, multiple companies have emerged and public agencies have taken notice.

Virgin Hyperloop One and Hyperloop Transportation Technologies are two of the companies beginning to partner with local governments on research and evaluation of potential routes. Local government agencies have announced partnerships for hyperloop feasibility studies and are beginning to provide public funds towards planning for this technology. For example, NOACA is working with Hyperloop

Transportation Technologies to study a potential route between Cleveland and Chicago.

Ideas for Aerial Innovation

A company called skyTran has introduced an idea for technology that uses magnetic levitation to move two-person passenger pods along an elevated guide rail. Unlike skyTran, which plan for pods traveling along an aerial track, other companies are testing an idea that is more in line with a combination of a car and a helicopter. UberAIR is being jointly developed by Uber and NASA, with prototypes that include four rotors on wings that will allow the vehicles to fly 1,000 to 2,000 feet in the sky. A competitor is named Kitty Hawk and is backed by Alphabet, the parent company of Google. Uber plans for commercial service beginning in 2023.

The list of technologies under development that aim to transport people in new ways, big and small, is seemingly endless. While emerging concepts can be untested and raise many questions, excitement for new technologies abounds.

Footnotes

- ¹ <https://nacto.org/shared-micromobility-2018/>
- ² <https://www.supermarketnews.com/online-retail/kroger-expands-driverless-delivery-houston>
- ³ <https://www.washingtonpost.com/technology/2019/02/27/your-next-fedex-delivery-could-be-pizza/>
- ⁴ <https://www.bizjournals.com/seattle/news/2018/03/27/driverless-delivery-amazon-patent-trucks-drones.html>
- ⁵ <https://about.van.fedex.com/newsroom/thefuturefedex/>
- ⁶ <https://www.theverge.com/2019/1/23/18194566/amazon-scout-autonomous-six-wheeled-delivery-robot>

2020 Disruptions

The transit riding experience, like so many of life's experiences, was thrown into disarray in early 2020 with the COVID-19 global pandemic. RTA took responsible actions that are national best practices. Among multiple safety measures, RTA enacted:

- Enhanced cleaning and disinfecting of vehicles and facilities
- Barriers and separators for operators and staff
- Personal protective equipment
- Collaboration with Health departments and Centers for Disease Control

In addition to safety measures, the COVID-19 pandemic has thrust an economic downturn upon Northeast Ohio and the world. Past economic recessions have had a long impact on Cuyahoga County, with challenging decreases in population, jobs, and transit ridership. These considerations drove RTA and all transit agencies into unknown territory as ridership has decreased on transit nationally and transit funding remains insufficient nationwide.

On top of COVID-19 and economic challenges, there has been a renewed acknowledgment of the importance of transit in moving society forward. Calls to action for social justice have highlighted the challenges facing people of color. There is an increased realization of the importance of transit for essential services and workers.

At the time of the conclusion of this Strategic Plan, the global pandemic continues.

- There is uncertain travel demand for all modes
- Health concerns drive all aspects of life
- School remains remote for many students, from elementary school to universities
- Utilization and acceptance of working from home accelerates a previously growing trend

Against this backdrop, uncertainty is prevalent. However, scientific consensus is that the COVID-19 virus will be overcome in time. 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.



Engagement



Engagement with stakeholders and the general public is essential to an inclusive planning process. A plan reflects the needs and desires of the community. The Strategic Plan and associated Pillar Studies engaged thousands of people through a variety of approaches. In conjunction with technical analysis, community engagement was the driving force for the Strategic Plan.

Engagement Approach

The approach to engagement included a multi-pronged strategy with multiple stakeholder committees and general public outreach. Through in-person meetings, online input, digital and in-person surveys, informal conversations at RTA vehicle facilities and public bus stops, formal presentations, children’s activities, and more, the study team engaged a variety of community members. Meetings with administrative staff as well as

operations employees at RTA provided a diverse set of internal perspectives at the agency. Public meetings at locations where people already gather in their neighborhood provided opportunities to hear from people that would not usually participate in a strategic planning process.

Engagement included:

- Stakeholder input
- RTA Operations employee engagement
- Pillar Study public meetings and online surveys
- Strategic Plan webpage
- Strategic Plan public meetings and online survey

Stakeholder Engagement

There were three periods of stakeholder engagement at the beginning, middle, and end of the planning process. The organization of stakeholders focused on an Internal Stakeholder Group and External Stakeholder Group.

The Internal Stakeholder group included meetings with internal RTA staff that provided input from representatives with diverse responsibilities from departments including planning, operations, marketing and communications, and finance.

Meetings with external stakeholders provided input from representatives of the business community, educational institutions, Cuyahoga County, Clevelanders for Public Transit, Ohio Department of Transportation, community development organizations, Urban Land Institute, development professionals, health representatives, civic institutions, and bicycle advocacy groups.

INITIAL STAKEHOLDER PERIOD

The study team met with dozens of stakeholders during the initial input phase of the planning process. Input was varied and wide-ranging, but some ideas rose to the top and were mentioned multiple times. A key concern was the image of the agency among the general public and specifically among RTA riders. Stakeholders revealed that a degrading image over time has resulted in a general lack of confidence, a deteriorating customer experience, and declining ridership.

Stakeholders observed that issues outside of RTA's direct control have had a negative impact. Notably, the outward expansion of land development has created a situation in which new jobs and new neighborhoods are increasingly difficult to serve with transit. The transportation and land use connection is important to address, however difficult it may be to overcome sprawling development trends in recent decades. This land use challenge is interconnected with another theme that was mentioned by stakeholders - partnership. By partnering with other public agencies, the business community, and community leaders, stakeholders believed that RTA can be stronger in the face of negative headwinds. One example of partnership is the potential for

transit-oriented development initiatives along urban corridors.

Multiple meetings provided input from the Interim CEO, directors from multiple RTA departments, and the new CEO.

The study team presented to RTA Board of Trustees, as well as initiated one-on-one meetings with Board members beginning with Mayor Welo.

Partner agencies are vital to the success of RTA's Strategic Plan. A meeting with City of Cleveland provided input from the City's Office of the Mayor as well as the Planning, Development, and Sustainability departments. A meeting with Northeast Ohio Areawide Coordinating Agency (NOACA) provided input from the metropolitan planning organization.

The meetings described above took place in 2019 on April 24, May 21, June 4, June 5, July 17, and October 7 and comprised the initial stakeholder period. The initial stakeholder period focused on a blank slate of ideas in order to have open-ended conversations about key issues. The stakeholder meetings resulted in a set of themes that summarized stakeholders' thoughts about the future of RTA.

A summary of themes that emerged from initial input include:

- RTA's image
- Access to jobs
- Passenger experience
- Reliability
- Need to clearly communicate to the public and stakeholders to increase transparency
- Transit-oriented development as a source of untapped potential
- "Leaning in" to new mobility
- Social health
- Equity
- Technological innovation
- Sustainability
- Coordination between RTA and partners

SECOND STAKEHOLDER PERIOD

In a second round of stakeholder engagement, the project team reconvened with leaders inside and outside RTA. To allow the project team to engage with RTA stakeholders, two meetings were held on

Wednesday, October 23, 2019 to solicit feedback and create a baseline understanding of what is important in the minds of stakeholders. Twenty-two participants were present for the internal stakeholder meeting, and 18 participants were present for the external stakeholder meeting.

Each of the two meetings began with a presentation on the planning process. Following the presentation, two engagement activities were performed to guide a discussion on the relevant issues facing RTA. First, the group collaborated on issues and opportunities that corresponded to the goals developed in the previous planning phase. In small groups, participants shared what they thought were the most pertinent topics to be discussed in the Strategic Plan. Goals were aligned with issues and potential outcomes.

The second activity created a ranking of goals based on the discussion. Each participant was given three sticker dots to place on the goals that they thought were most important. This activity highlighted stakeholders' key topics to be addressed by RTA in the coming decade.

The planning team used the goals developed previously in the process to better understand what each group saw as the highest priority for RTA. Each of the policy goals was printed on a sheet hung on the wall, and participants were given three votes to indicate what they thought was the highest priority for RTA to pursue.

Of the ten goals, the two groups identified state of good repair, customer experience, and technological innovation as the top three that should be a future priority of focus for RTA.

State of Good Repair, Customer Experience, and Technological Innovation were identified by stakeholders as the **top three goals** that should be a priority of focus for RTA.

An interesting finding of this activity was the divergence of the two groups related to their top choices. The top three policy goals identified from the Internal Stakeholder group were Financial Stability, Customer Experience, and State of Good Repair.



The top three policy goals identified from the External Stakeholder group were Equity, State of Good Repair, and Access.

While State of Good Repair was agreed as a priority by both groups, the rest of the results are divergent between the two. Even more notable was the variance between what each of the groups rated as their top priority, and how the other group rated the same category. The External Stakeholder group rated Equity as one of the two top priorities, while the Internal Stakeholder group rated Equity as the lowest. Likewise, Financial Stability was identified as the highest priority on the Internal Stakeholder group, while the External Stakeholder group rated it relatively low as a priority.

There is a difference of perspective from what each group thinks should be a priority. Participants internal to the organization have a different idea about what needs to be done, while people external to the organization have a different perspective.

THIRD STAKEHOLDER PERIOD

The study team engaged the RTA's Community Advisory Committee, Internal Stakeholder Group, and External Stakeholder Group in the final phase of the planning process. These meetings offered an opportunity to update these stakeholders on progress throughout the planning process. The team also met with City of Cleveland in order to collaborate on solutions and ideas for supporting one another on shared strategies in the future.

Due to COVID-19 safety protocols, the final phase of stakeholder meetings were held virtually using digital meeting software. On July 16, 2020, over forty stakeholders attended a meeting to hear about the planning process, Priority Corridor updates, and Key Initiatives to create the framework for the future. Stakeholders were asked to provide comments during the meeting as well as for two weeks after the meeting. Stakeholder feedback was overwhelmingly positive.

On August 31, 2020, the study team met with City of Cleveland officials to discuss the plan's recommendations. The City agreed that transit on urban Priority Corridors is a strong focus and noted the Opportunity Corridor is a key initiative going

forward. The City affirmed that partnership between RTA and the City will be essential to deliver the transportation system for the future.

RTA Operations Employee Engagement

The Strategic Plan team recognized the importance of obtaining input from RTA employees to supplement the Internal Stakeholder group. Going to Operations employees to get input in person can provide multiple benefits on a Strategic Plan. Issues that might be overlooked are often revealed through such input. At the same time, an inclusive planning process is improved through outreach across the agency. The team aimed to get input from Bus Operators, Dispatchers, Maintenance, Street Supervisors, and others who are on the ground delivering RTA services every day.

This input was well received by employees. They appreciated being asked their opinion and included in the planning process. They indicated that was not always the case on past efforts led by RTA's Administration. A survey was available to fill out and submit into a dropoff box at each location for two weeks as well. The study team got feedback from approximately 112 employees. This was the equivalent of a combined 1,000 years of RTA experience.

The average tenure of Operations employees who provided feedback was 11.2 years.

- 1 year or less at RTA: 16%
- 2 to 5 years: 20%
- 6 to 10 years: 15%
- 11 to 20 years: 30%
- 21 or more years at RTA: 19%

This diversity of experience is important since employees who have been working at RTA for only a few years may have a different perspective than those who have spent their careers at the agency.

There was also a diversity of types of employees. A majority of employees who were engaged by the study team were Bus and Rail Operators, but the jobs included: Dispatcher, Engineer/QA, Maintenance, Mechanic, Secretary, Sergeant, Training, Police, and Transportation Manager.

Operations employees were provided a choice among several potential goals.

On January 28 and 29, 2020, the study team visited the following RTA locations:

2020 RTA Operations Employee Meetings

Facility Name	Facility Address	Date	Time
Central Bus Maintenance Facility	2500 Woodhill Road, Grandview Heights, OH 43212	Tuesday, January 28	11:30 a.m. - 1:30 p.m.
Rail District Complex / Transit Police	6200 Grand Avenue, Cleveland, OH 44104	Tuesday, January 28	2:30 p.m. - 4:30 p.m.
Hayden Garage	1661 Hayden Avenue, East Cleveland, OH 44112	Wednesday, January 29	5:30 a.m. - 7:30 a.m.
Triskett Garage	13405 Lakewood Heights Blvd, Lakewood, OH 44107	Wednesday, January 29	2:00 p.m. - 4:00 p.m.
Paratransit Facility	4601 Euclid Avenue, Cleveland, OH 44103	Wednesday, January 29	3:30 p.m. - 5:30 p.m.

The Strategic Plan was informed by more than

1,000 years of combined RTA experience

from bus operators, maintenance personnel, and other Operations staff.

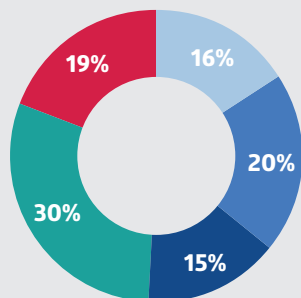


The **average tenure** of Operations employees who provided feedback was

11.2 years

TENURE of RTA Employees

- 1 year or less at RTA
- 2 to 5 years
- 6 to 10 years
- 11 to 20 years
- 21 or more years at RTA



The top three goals chosen were:

- Customer Experience
- State of Good Repair
- Transparency

Financial Stability and Technological Innovation were also highly rated by employees.



Vehicle operators are the employees that deliver service directly to customers every day, so it makes sense that Customer Experience is the most highly rated. When the bus is delayed or the train breaks down, vehicle operators are the ones that see the impact. Similarly, many bus operators see the satisfaction in customers' trips that are smooth and reliable.

Operations employees are also the ones that see the negative impact that decaying infrastructure has on RTA's services. State of Good Repair and Financial Stability identify the employees' desires to have planned infrastructure improvements and a reliable financial picture that provide customers and employees confidence. Technological innovation was highly rated since many employees see opportunities

to improve both backend technology as well as the technology that customers interface with.

The desire for transparency was apparent in employees' appreciation of the study team's outreach. Many quickly explained that vehicle operators and mechanics are not always involved in the administration's decision-making and planning processes.

Public Engagement

STRATEGIC PLAN WEBPAGE

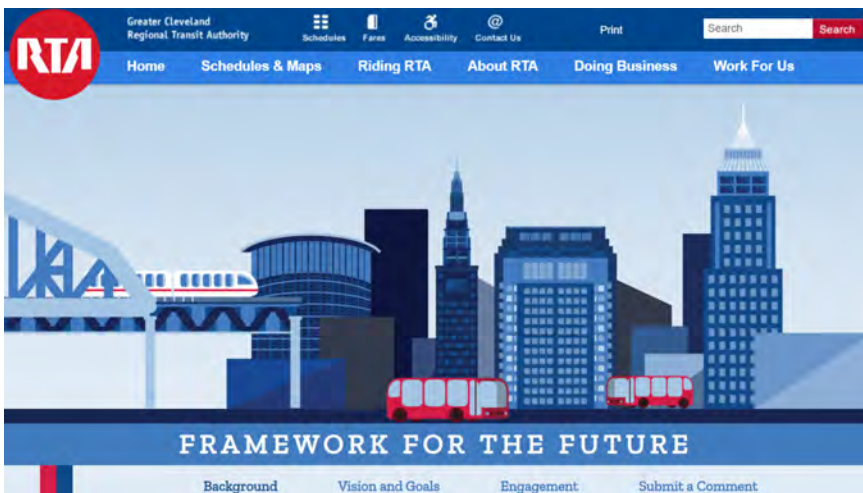
The planning team and RTA's IT department jointly created the webpage riderta.com/strategicplan to provide clear and visually appealing information about the planning process online.

The webpage was formatted for desktop computers, smartphones, and tablets to allow flexibility to users. The page was hosted within RTA's riderta.com website structure to maintain continuity with other RTA initiatives and information.

Many people do not want to attend a public meeting or speak to anyone about their comments. Others want to keep informed of the planning process but may not have the need to attend an input meeting.

The Strategic Plan webpage allowed visitors to see the background, project overview, schedule, ongoing progress, and other pertinent information. Visitors could provide comments and provide their contact information if they wanted to stay informed about the plan.

As public engagement commenced, an online survey was accessible through this webpage. Information on upcoming public meetings was prominently displayed,

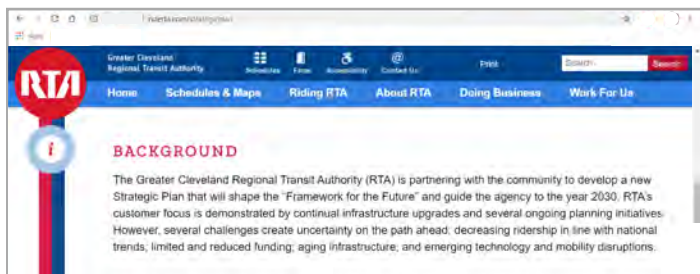


The Strategic Plan webpage allowed visitors to see the background, project overview, schedule, ongoing progress, and other pertinent information.

As of April 2020, riderta.com/strategicplan had

2,062
unique visitors.

and a banner at the top of RTA's main homepage guided visitors to the Strategic Plan site.



As of April 2020, riderta.com/strategicplan had 2,062 unique visitors.

CUSTOMER SATISFACTION SURVEY

Each year RTA conducts a customer satisfaction survey. In 2019, the survey received 465 responses.

Key conclusions include:

- 64% of RTA customers are satisfied overall with RTA
- 70% use RTA primarily to get to work
- 94% never or very rarely use ridesharing services such as Uber or Lyft
- 78% say the buses are well driven and 72% say the bus operators are helpful and professional
- Between half and two-thirds of customers are satisfied on each of these categories:
 - » Feeling safe and secure waiting for bus
 - » Feeling safe riding the bus
 - » On time performance
 - » Gets to destination in reasonable amount of time
 - » Days and times of bus schedules
 - » Comfortable environment
 - » Getting information about service
 - » Bus routes are conveniently located
 - » Convenience to pay fare/tickets/passes
 - » Cleanliness
- 36% of customers are satisfied with the ease of real time information
- 35% of customers are satisfied with responsiveness to customers complaints or problems
- 69% of customers say that they would recommend RTA

This information highlights that RTA is far from where it could be in satisfying its customers. Some

categories, such as feeling safe waiting for the bus, have implications for larger citywide issues and require multiagency approaches to address them. However, some of the topics are under the direct control of RTA and can be addressed, such as ease of paying fares.

The results of the customer satisfaction survey highlight that a daily goal of RTA needs to be focused on getting the basics done to provide quality service to customers. The results also highlight that larger issues such as bus route locations deserve to be assessed. The pillar studies help to plan for the future on many topics from the customer satisfaction survey.

PILLAR STUDY ENGAGEMENT

There was significant engagement of the public throughout 2019 as a result of the pillar studies that are part of the Strategic Plan. Three surveys captured over 6,250 responses on ways that RTA can improve its service and customer experience.

Approximately 40 public meetings were held across the region that were attended by over 300 people. Public meetings were held at a variety of locations, days of week, and times of day as shown in the appendix.

These input opportunities educated the public on the topic of where and when buses should travel, known as a ridership/coverage trade-off facing RTA. In meetings and surveys, no majority sided with significantly changing current service. More respondents (47%) preferred an alternative favoring high frequency service in comparison with those who preferred a focus on additional coverage (33%) of service.

2020 PUBLIC INPUT

Building on stakeholder input and previous public input, the Strategic Plan team led multiple engagement activities in early 2020.

2020 Public Meetings

Facility Name	Facility Address	Date	Time
RTA Main Office	1240 West 6th Street, Cleveland, OH 44113	Thursday, February 20	12:00 p.m. - 1:00p.m.
Hofbrauhaus Cleveland	1550 Chester Avenue, Cleveland, OH 44114	Monday, February 24	6:00 p.m. - 8:00 p.m.
CornUcopia	7201 Kinsman Road, Cleveland, OH 44104	Tuesday, February 25	12:30 p.m. - 2:30 p.m.
Collinwood Rec Center	16300 Lakeshore Boulevard, Cleveland, OH 44110	Tuesday, February 25	5:00 p.m. - 7:00 p.m.
Cleveland Public Library- Stokes	525 W. Superior Avenue, Cleveland, OH 44114	Wednesday, February 26	11:00 a.m. - 1:00 p.m.
Parma Library	6996 Powers Boulevard, Parma, OH 44129	Wednesday, February 26	5:30 p.m. - 7:30 p.m.
Lakewood Woman's Pavilion	14532 Lake Avenue, Lakewood, OH 44107	Monday, March 9	6:00 p.m. - 8:00 p.m.
Cleveland Heights Community Center	1 Monticello Boulevard, Cleveland Heights, OH 44118	Tuesday, March 10	6:30 p.m. - 8:00 p.m.
Gemini Center	21225 Lorain Rd. Oak Room, Fairview Park, OH 44126	Wednesday, March 11	5:30 p.m. - 7:30 p.m.

PUBLIC MEETINGS

Public meetings are one method the team used to get input. A mix of daytime and evening meetings allowed multiple audiences to participate, such as those who work at different times of day. Meetings were open houses that allowed attendees to stay as little or as long as they desired. A brief presentation occurred once each hour, and activities were spread across the room in order to obtain input in a variety of ways. Light refreshments and children's activities offered incentives for families and people on the go to attend the meetings.

Meetings were located in a variety of locations across the region, as well as in a variety of settings. Recreation centers, libraries, restaurants, coffee shops, and community centers offered opportunities for the public to attend at the locations in their communities.

Meetings included opportunities for participants to identify their top three most important goals for RTA, rank potential strategies, provide input on

Approximately
150
people attended
public meetings.



Members of the public could participate in meetings at local destinations, such as recreation centers, libraries, restaurants, coffee shops, and community centers.

their personal transportation journeys, and state their ideas to improve RTA. In addition to tables of activities, those with smartphones were encouraged to participate using their phone in interactive exercise that were displayed digitally for all meeting attendees to see using a software called Mentimeter. This interactive exercises allowed people to comment on others' comments in real time.

Approximately 150 people attended public meetings. Meeting participants were provided a choice among several potential goals. The top three goals were:

- Customer Experience
- Access
- Equity

Two public meetings were livestreamed on Facebook. These meetings were viewed collectively by 850 online participants.

Meeting participants were predominantly representative of the communities where the meetings were held. These were often RTA riders that were keenly aware of RTA's successes and shortcomings and prioritized the customer experience above all else. There was also a strong desire for RTA to build on its ability to provide access to jobs and education, as many neighborhoods in the region have experienced challenges in that regard. Participants prioritized an emphasis on providing transit service in areas of low income and neighborhoods that have been historically disadvantaged.

Meeting were publicized on the project's webpage as well as through RTA's social media and traditional channels. Advertisements inside buses were a key method of reaching existing riders during their daily commutes.

Two public meetings were broadcast on Facebook Live through RTA's Facebook page. As of April 2020, these two broadcasts garnered over 850 views. This multifaceted approach to engagement provided multiple opportunities to engage the general public.



PUBLIC SURVEY

An online survey was available through the project webpage and promoted through multiple channels in order to obtain input from people who prefer to communicate using the internet.

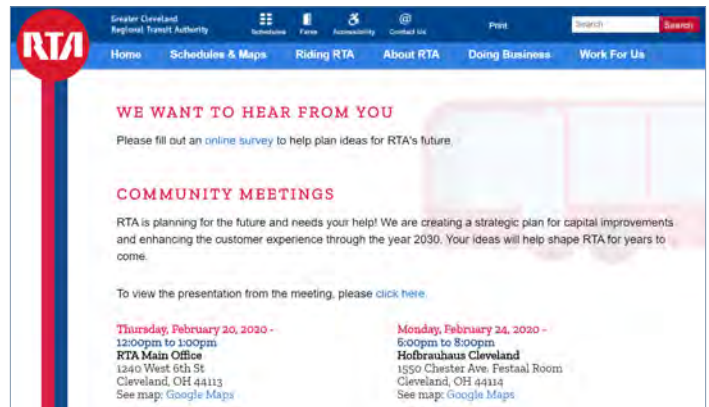
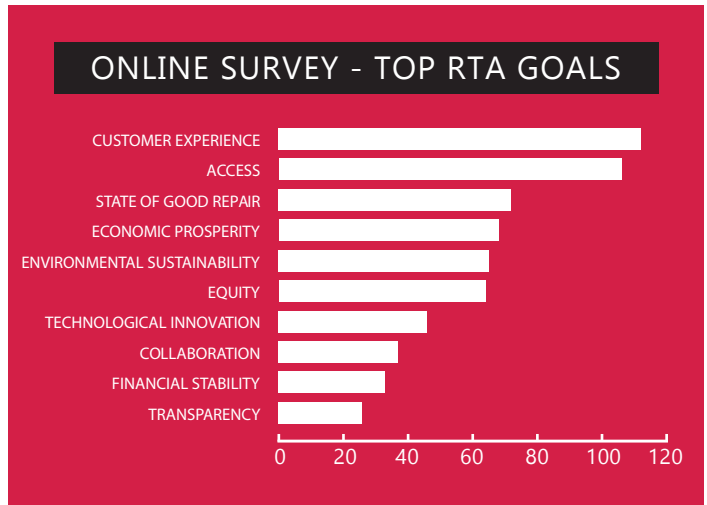
A survey extends the potential of reaching community members who cannot attend public meetings or simply prefer not to do so. The survey aimed to be easy to fill out and contained a mix of quantifiable and qualitative responses.

The survey mimicked the questions asked in the public meetings so that a similar experience was presented both digitally and in person. The survey was available in hard copy to accompany RTA staff and stakeholders at community events around the region during the public input period as well.

Approximately 251 people responded to the online survey during the input period of February 24, 2020 to April 15, 2020. Respondents were asked to rate their top goals for RTA in the coming decade. The top three were:

- Customer Experience
- Access
- State of Good Repair

The responses showed that people feel that RTA has improvements that should be prioritized in order to make the customer experience satisfactory. Complaints of delays, lack of communication, and slow service highlight the challenges that customers feel that they face. There is widespread understanding that State of Good Repair, or maintaining infrastructure and assets, is a key challenge historically and remains a priority for RTA in the years to come. Finally, respondents showed that they think one of RTA's most important tasks is to facilitate increased access to jobs, education, and civic life. Public perception shows that RTA is more than transporting people around town - it delivers access to opportunity.

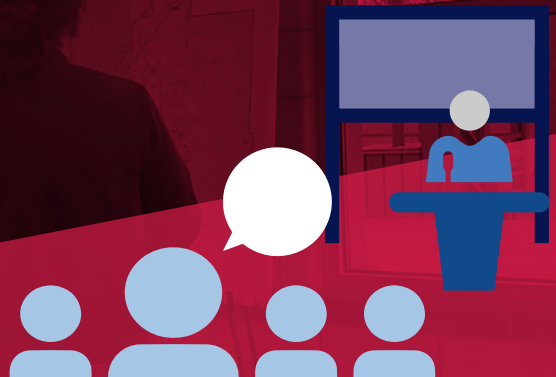




Strategic Plan COMMUNITY MEETINGS

9 PUBLIC MEETINGS

FEB 20 - MAR 11, 2020



ACTIVITIES



Top 3 Goals



Rank Strategies



Map Out Your Day



Big Idea

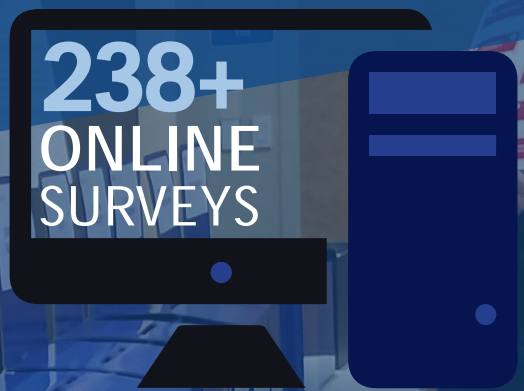


Arts & Crafts



100

MENTIMETER PARTICIPANTS



238+ ONLINE SURVEYS



WHERE DO YOU GO?

Live

Work

Visit

Want to Visit



160+
BIG IDEAS

Reduce fare prices for low-income seniors.

Need to change dialogue around transit.



Connect more people to more jobs.

TOP 3 GOALS



ACCESS



CUSTOMER EXPERIENCE



EQUITY



TOP 3 MOST IMPORTANT STRATEGIES

- 1 Identify additional funding to meet existing and future transit needs.
- 2 Better link people to jobs.
- 3 Increase frequency of bus service on existing key routes, while maintaining existing coverage.

STRATEGY PRIORITIZATION FROM PUBLIC INPUT

STRATEGY	RATING
Identify additional funding to meet existing and future transit needs	1
Better link people to jobs	2
Increase frequency of bus service on existing key routes, while maintaining existing coverage	3
Improve bus stops with more shelters, amenities, real-time information, and lighting	4
Implement fare policies that include fare capping and include free transfers	5
Prioritize reinvestment in replacement rail cars	6
Build a coalition to support and advocate for funds for transit oriented development	7
Invest in maintenance of bus fleet	8
Implement fare collection systems that speed up customer boarding	9
Consider lower fares for low income riders and workforce development programs	10
Increase revenue by increasing ridership	11
Provide open data to the public on RTA's goals and outcomes	12
Use technology to improve transfer connections	13
Improve access for those of all physical abilities	14
Serve as a catalyst to corridor and district development	15
Focus transit service in core urban areas	16
Better link people to retail and entertainment destinations	17
Invest in maintenance and rehabilitation of stations/stops	18
Develop coordinated payment app for seamless transit coordination	19
Create safer and better walking and bicycle connections.	20
Improve cleanliness of buses, rail cars, stops and stations	21
Prioritize reinvestment in track and bridge rehab	22
Provide reports on customer feedback and responsive actions	23
Provide improved notice of service changes and special event operations	24
Create partnerships for transit oriented development planning and implementation	25
Establish positive advocacy messages about transit	26
Expand incentives for transit ridership	27
Implement more widespread transit signal priority	28
Create revenue through real estate asset management and transit oriented development	29
Ease payment access for unbanked population	30
Support bike, pedestrian, scooter, and other multimodal connections to transit	31
Implement strategies to make board and board committee meetings more accessible	32
Implement bus rapid transit (like Euclid Avenue and MetroHealth line) on more priority routes	33
Expand sustainable fleet, including CNG and electric-powered buses	34
Develop family and female friendly policies	35
Increase service during the middle of the day and on the weekend, while maintaining existing coverage	36
Establish roadmap to mode shift toward transit to meet regional climate crisis goals	37
Form partnerships with senior centers and medical providers	38
Develop a multi-county transit system with seamless service	39
Implement comprehensive sustainability initiatives for all aspects of RTA's operations	40
Apply advanced flexible routing technology to enable improved paratransit scheduling	41
Streamline customer feedback and monitoring system	42
Increase the security presence throughout the system	43
Study possibilities for reallocating Waterfront Line and Green Line rail service	44
Expand integration of alternative power at stations/stops	45
Pilot on-demand flexible bus service (microtransit) where fixed routes are not justified	46
Partner with mobility providers (such as Uber, Lyft, Via, Lime, Bird) to expand reach of transit	47
Offer charging stations at RTA facilities	48
Consider increased costs for premium service	49

INPUT ON POTENTIAL STRATEGIES

In order to dig deeper into the public’s ideas of what should be done to improve RTA, the study team provided approximately 50 potential strategies for input.

In fact, seven of the top ten strategies were similar among online surveys and public meeting participants. These strategies involved better bus stops, new rail cars, better fare policies and technology, and collaboration to create transit oriented development.

TOP 3 STRATEGIES

FOR ALL PUBLIC RESPONDENTS

- Increase frequency of bus service on existing key routes, while maintaining existing coverage
- Identify additional funding to meet existing and future transit needs
- Better link people to jobs

TOP 10 STRATEGIES

FROM THE ONLINE SURVEY

1. Increase frequency of bus service on existing key routes, while maintaining existing coverage
2. Identify additional funding to meet existing and future transit needs
3. Better link people to jobs
4. Increase revenue by increasing ridership
5. Improve bus stops with more shelters, amenities, real-time information, and lighting
6. Prioritize reinvestment in replacement rail cars
7. Implement fare policies that include fare capping and include free transfers
8. Invest in maintenance of bus fleet
9. Build a coalition to support and advocate for funds for transit oriented development and transit infrastructure
10. Better link people to retail and entertainment destinations

TOP 10 STRATEGIES

FROM THE PUBLIC MEETINGS

1. Identify additional funding to meet existing and future transit needs
2. Better link people to jobs
3. Increase frequency of bus service on existing key routes, while maintaining existing coverage
4. Implement fare policies that include fare capping and include free transfers
5. Improve bus stops with more shelters, amenities, real-time information, and lighting
6. Build a coalition to support and advocate for funds for transit oriented development and transit infrastructure
7. Prioritize reinvestment in replacement rail cars
8. Focus transit oriented development planning at rail stations and along priority bus corridors
9. Focus transit service in core urban areas
10. Serve as a catalyst to corridor and district development

Through engagement at public meetings, online surveys, in RTA bus garages, on Facebook, and more, the Strategic Plan had

3,400+ touch points

&

Input from the Pillar Study that included

6,250+ responses

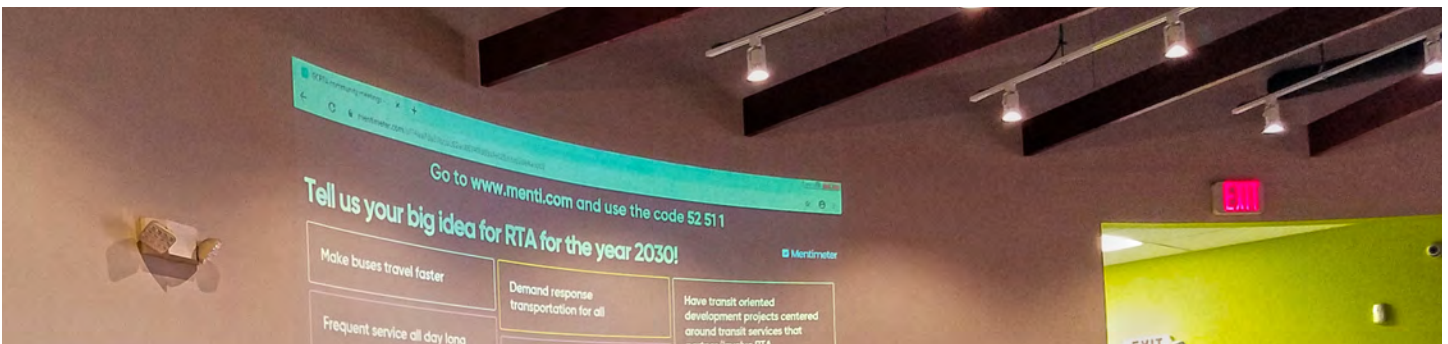
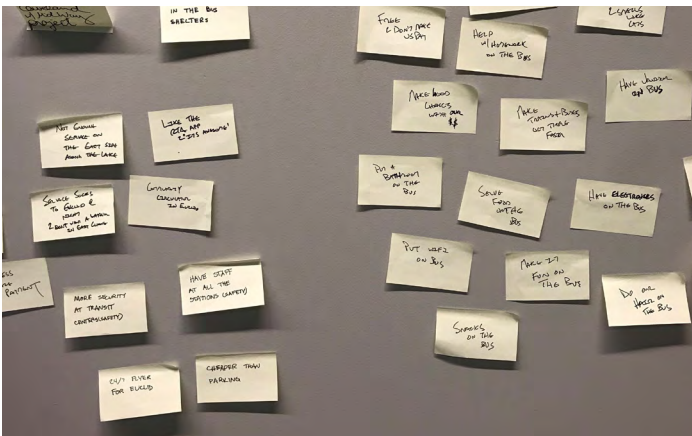
The Strategic Plan collected over

9,000 responses



In addition to offering printed activities to gain feedback, attendees had the option of providing their input via an online survey using their phones.





*RTA is more than transporting people around town
- it delivers access to opportunity.*



Strategy Identification



There are 49 strategies for improving RTA that were collaboratively identified. A set of strategies are grouped by the goals they will predominantly achieve below. Several strategies could achieve multiple goals - indeed, it is best if strategies can help solve many problems simultaneously.

Potential strategies for improving RTA are described in the following section. These strategies were

identified as potential ways to reach the planning goals set at the on-set of this planning process. The strategies were vetted to the public at public meetings and on-line surveys. This section lists and broadly defines the strategies. Following the identification of potential strategies, the section after discusses strategy prioritization and key initiatives.



These 49 strategies lead to several key initiatives to move RTA forward.

STRATEGY IDENTIFICATION

GOAL	STRATEGY
Access	Increase frequency of bus service on existing key routes, while maintaining existing coverage
Access	Increase service in the middle of the day and on the weekend, while maintaining existing coverage
Access	Implement bus rapid transit on more priority routes
Access	Create safer and better walking and bicycle connections
Collaboration	Build a coalition to support and advocate for funds for transit oriented development
Collaboration	Partner with mobility providers to expand reach of transit
Collaboration	Expand incentives for transit ridership
Collaboration	Develop a multi-county transit system and seamless service
Collaboration	Form partnerships with senior centers and medical providers
Customer Experience	Streamline customer feedback and monitoring system
Customer Experience	Improve bus stops with more shelters, amenities, real-time information, and lighting
Customer Experience	Improve cleanliness of buses, rail cars, stops and stations
Customer Experience	Implement fare collection systems that speed up customer boarding
Customer Experience	Develop family and female friendly policies
Customer Experience	Increase the security presence throughout the system
Economic Prosperity	Focus transit service in core urban areas
Economic Prosperity	Establish positive advocacy messages about transit
Economic Prosperity	Better link people to jobs
Economic Prosperity	Better link people to retail and entertainment destinations
Economic Prosperity	Create partnerships for transit oriented development planning and implementation
Environmental Sustainability	Establish a roadmap to mode shift toward transit to meet regional climate crisis goals
Environmental Sustainability	Expand sustainable fleet, including electric-powered buses
Environmental Sustainability	Support bike, pedestrian, scooter, and other multimodal connections to transit
Environmental Sustainability	Implement comprehensive sustainability initiatives for all aspects of RTA's operations
Environmental Sustainability	Expand integration of alternative power at stations/stops
Environmental Sustainability	Offer charging stations at RTA facilities
Equity	Implement fare policies that include fare capping and include free transfers
Equity	Consider lower fares for low income riders and workforce development programs
Equity	Consider increased costs for premium service
Equity	Improve access for those of all physical abilities
Equity	Ease payment access for unbanked population
Financial Stability	Identify additional funding to meet existing and future transit needs
Financial Stability	Increase revenue by increasing ridership
Financial Stability	Create revenue through real estate asset management and transit oriented development
Financial Stability	Serve as a catalyst to corridor and district development
State of Good Repair	Prioritize reinvestment in replacement rail cars
State of Good Repair	Prioritize reinvestment in track and bridge rehab
State of Good Repair	Invest in maintenance of bus fleet
State of Good Repair	Invest in maintenance and rehabilitation of station/stops
State of Good Repair	Study possibilities for reallocating Waterfront Line and Green Line rail service
Technological Innovation	Develop a coordinated payment app for seamless transit coordination
Technological Innovation	Implement more widespread transit signal priority
Technological Innovation	Apply advanced flexible routing technology to enable improved paratransit scheduling
Technological Innovation	Pilot on-demand flexible bus service (microtransit) where fixed routes are not justified
Technological Innovation	Use technology to improve transfer connections
Technological Innovation	Provide improved notice of service changes and special event operations
Transparency	Provide open data to the public on RTA's goals and outcomes
Transparency	Implement strategies to make board and board committee meetings more accessible
Transparency	Provide reports on customer feedback and responsive actions

ACCESS

Goal: RTA will facilitate increased access to jobs, education, and civic life.

Potential strategies include:



Increase frequency of bus service on existing key routes, while maintaining existing coverage

In 2019, RTA completed a System Redesign study, one of several Pillar Studies that inform the Strategic Plan. With a focus on the next three years to 2023, the study sought input on two conceptual networks showing how the transit network could look if it were designed to focus slightly more on generating high ridership. Today, about 60% of RTA’s service is where it would be if ridership were the only goal, while 40% of the service is focused on extending coverage to more people and jobs. Alternative scenarios were presented for illustrative purposes:

- The **Current Funding Concept** showed how RTA’s network could look if it were designed to focus slightly more on generating high ridership, but without reducing the overall area served by transit (65% ridership, 35% coverage).
- The **Coverage Alternative** showed the RTA network at 50% ridership and 50% coverage, with the same resources as today.
- The **High Frequency Alternative** showed 85% ridership and 15% coverage, with the same resources as today.
- The **Expanded Funding Concept** showed how the network could look if about 25% more resources were available to run bus service. In this scenario, the bus network could provide 70% ridership and 30% coverage, with an overall increase in bus service.

The Current Funding Concept and Expanded Funding Concept were further examined for their impacts and outcomes. Public input revealed positive responses to the general concepts that enhanced routes focused on increasing ridership. However, strong

disagreement was voiced regarding the potential elimination of Park-N-Rides and downtown trolleys. A balanced approach to future bus service changes is prudent within current financial constraints. Large enhancements to the bus network require finding savings elsewhere that can be reallocated or securing additional funding in order to put more service out on the street.

Transit System Redesign Alternative Concepts

Today

60% ridership

40% coverage

Current Funding Concept

65% ridership

35% coverage

Expanded Funding Concept

70% ridership

30% coverage



Increase service during the middle of the day and on the weekend, while maintaining existing coverage

The System Redesign Study examined additional service in the middle of the day and on weekends. The standard 9 to 5 work day is changing with technology and diversity of working sectors. College students, retail employees, restaurant and entertainment workers, and health care professionals such as nurses might need transit service at a variety of days and times. Additionally, customers visiting retail establishments or utilizing medical services desire bus service on weekends and throughout the day.

During public input for the redesign study, a majority of respondents (59%) agreed or strongly agreed that the balance of service between weekends and

weekdays was right in the Expanded Funding Concept. This concept provides a higher level of service (frequency and span) on many routes on weekends than is available today. As RTA improves bus service, expansion of midday and weekend service on key routes will be a viable step forward.



Implement bus rapid transit on more priority routes

RTA's HealthLine, a Bus Rapid Transit (BRT) line, aims to offer rail-like convenience with the flexibility of a bus. Opened in 2008, it has been associated with more than \$9.5 billion in economic development along the Euclid Corridor. BRT features high-frequency service, dedicated right-of-way with higher travel speed limits, precision docking, level boarding stations, traffic signal prioritization, off-board fare collection, and real-time information displays.

RTA has one of the best examples of BRT systems in that it operates the HealthLine in its own right-of-way, a "lite" version in the CSU line which operates in peak hour lanes, and the MetroHealth line that is branded bus service. In 2014, RTA launched the Cleveland State Line, serving Downtown and several West Side communities. Since then, ridership has almost doubled. In 2017, RTA's MetroHealth Line opened with rebranded buses, shelters, and stops along the West 25th Street corridor. In the future, RTA can continue these efforts to make service fast, simple, safe, and first-class alongside community partners on other high ridership corridors.

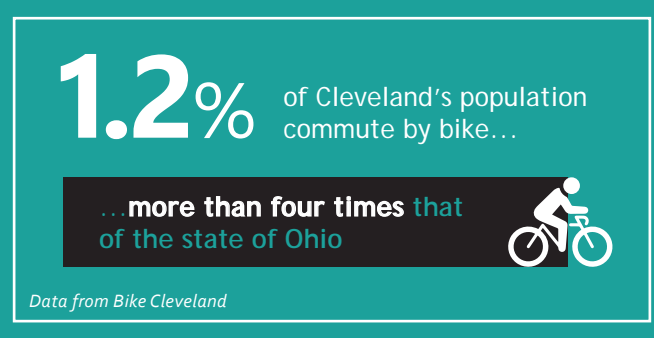
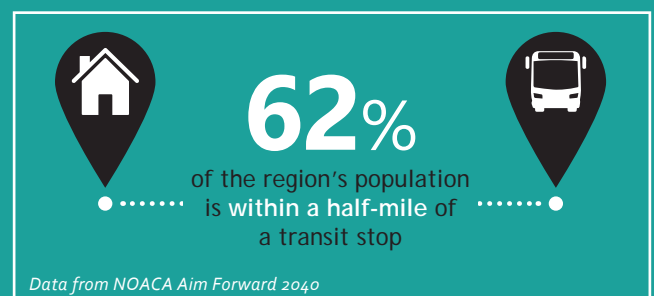


Create safer and better walking and bicycle connections

Though the streets and infrastructure that comprise connections to transit fall outside the boundaries of RTA's property, sidewalks and bike lanes are still critical components of an effective public transit system. Data from RTA's 2017 First Last Mile Strategic Plan shows that 3% of Rapid Station users bike to transit services and almost one-third (33%) of all

Rapid Station trips are accessed by walking. NOACA Aim Forward 2040 highlights that 62% of the region's population is within a half-mile of a transit stop, a relatively short distance that is feasible for many people to bike or walk. A disconnect can sometimes occur between bike advocates and transit agencies over the division of constrained right-of-way for multiple modes. Climate Action Plans for City of Cleveland and Cuyahoga County support increased emphasis on transit, bicycling, and walking.

RTA can work with agency partners to expand the reach of transit through infrastructure and policy improvements, maximizing multi-modal benefits & efficiencies, and building on existing regional sustainable policies and planning initiatives. Recommendations include increasing wayfinding signage to connect people on bicycles to transit services, supporting new bike facilities, and partnering to increase bike-transit connections.



COLLABORATION

Goal: RTA will work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for economic development around transit services, also known as transit oriented development.

Potential strategies include:



Build a coalition to support and advocate for funds for economic development around transit services, also known as transit oriented development and transit infrastructure

Community and partner support is essential to develop land near transit services in ways that support transit use. RTA's transit-oriented development research notes that successful walkable development near transit includes development that is compact and dense relative to the surrounding area; has a mix of land uses; has a safe, inviting, interconnected public realm; and offers a different approach to parking with fewer cars, shared facilities, and district design standards.

RTA is a national leader in partnering with community stakeholders to support key services, such as the HealthLine with Cleveland Clinic and University Hospitals, MetroHealth Line with the MetroHealth System, and Cleveland State Line with CSU. Support from private partners, institutions, other public agencies, and neighborhoods creates goodwill and positive results that go beyond transit. NOACA is a strong partner from its work on transit-oriented development and transit needs. By investing in infrastructure adjacent to corridors where transit ridership is already high, the region supports dense communities that maximize utilization of limited resources to create shared benefits among partners and enhance the social fabric around transit corridors.



Partner with mobility providers to expand reach of transit

Transportation options have evolved rapidly in recent years, with new providers emerging frequently. Uber and Lyft have led the way on ridesharing, offering relatively affordable trips at passengers' fingertips on their smartphones. Opportunities in micromobility such as scooters provide new ways to accommodate short trips through dockless rentals from companies such as Lime and Bird. These new mobility opportunities are sometimes viewed as partners to traditional transit agencies but can also be viewed as competitors in some ways. Effective partnerships around the country have maximized the benefits of the flexibility and convenience of new mobility companies while minimizing the negatives. For example, when new mobility companies utilize valuable and limited space on downtown streets and sidewalks, RTA could be negatively impacted.





Expand incentives for transit ridership

RTA's Commuter Choice Advantage program includes more than 700 companies and organizations today. Nearly 14,000 employees now participate in Commuter Advantage -- a unique opportunity for employees to enjoy an added discount on public transportation fares. This payroll deduction plan allows workers to prepay transit fares on a before-tax basis, saving employees and employers money. This type of incentive makes riding transit easier and more financially feasible for participants.

While Commuter Advantage is aimed towards workers and businesses, another program is established for college students called U-Pass, or "Universal Pass." This program involves RTA offering a discounted transit pass to students at participating colleges and universities. The pass enables students to ride RTA anywhere, at any time. U-Pass generally costs \$25 a semester for students and is automatically charged. Case Western Reserve University, Cleveland Institute of Art, Cleveland Institute of Music, Cleveland State University, and Tri-C are participants.

Commuter Advantage has a lot of room for growth. It could be targeted at specific areas or types of businesses. Collaboration such as RTA's work with UCI's Transportation Task Force provide opportunities for future growth. Similar programs could provide cost savings and ease of use to the general public. In the future everyone should be able to seamlessly pay for and use RTA services. New technology has given rise to new business models as well, in which transit riders can earn points for trips and redeem points for discounts at retailers.



Develop a multi-county transit system and seamless service

RTA provides approximately 97% of the region's transit trips. RTA shares regional transit responsibilities with agencies in adjacent counties - Geauga County Transit, Lorain County Transit, Medina County Transit, and Laketran. The largest job hubs in the region are within RTA's service area of Cuyahoga County.

The majority of the region's total trips are within Cuyahoga County and do not cross county lines. When assessing each county in the region, in fact, the majority of trips start and end within each county.

Given that approximately 97% of the region's transit trips are handled by RTA, it is not recommended that services and agencies are combined. RTA has a variety of issues specific to the population it currently serves - adding additional challenges to serve sprawling geographies under a single transit agency would not benefit RTA or adjacent counties.

However, a nuanced approach to coordinated activities among agencies could be appropriate. Regional funding and advocacy for the need for transit could be ways to continue to strengthen collaboration among the region's transit agencies. RTA will continue to collaborate with the region's transit agencies.



Form partnerships with senior centers and medical providers

Cleveland is home to over 70,000 residents age 60 and older, according to Age Friendly Cleveland's Action Plan. Seniors and others with special medical needs have unique transportation challenges that are well suited to being addressed by RTA's services. According to RTA's On-Board Survey, almost 5% of RTA's riders are over 65 years old. Seniors over age 65 can pay a discounted Senior rate to ride RTA buses and trains. There are 13,000 people with disabilities registered to use Paratransit service, and many people with disabilities successfully ride fixed route service as well.

RTA could strengthen its ease of use by emphasizing partnerships with senior centers and medical providers. Through improved customer information and enhanced technological advances, it is possible to streamline mobility to medical appointments. The region has such a renowned medical community and institutions, which RTA has successfully partnered with in the past. It will be important to strengthen that partnership as Cuyahoga County's population collectively gets older and new technological tools become available to provide transportation to senior centers and medical providers.

CUSTOMER EXPERIENCE

Goal: RTA will provide dependable, clean, fast, and seamless transportation that creates a positive experience for RTA customers.

Potential strategies include:



Streamline customer feedback and monitoring system

RTA offers many ways to offer commendations, suggestions, inquiries, or complaints. Customers can call the RTA Answerline by phone, utilize the internet through www.rideRTA.com/feedback, and get in-person help at Tower City and the RTA Main Office. However, the feedback system can be convoluted and disconnected from solutions to complaints. Each year RTA conducts a customer satisfaction survey. In 2019, the survey revealed that only 35% of customers are satisfied with responsiveness to customers' complaints or problems.

RTA could focus on streamlining customer feedback, improving the problem resolution process, and monitoring progress. By improving the ability for customers to voice their issues and see them get resolved, RTA could improve the customer experience and lead to greater ridership. RTA would increase loyalty, enhance its brand, reveal situations of unsatisfactory service, and provide more likelihood that customers will recommend RTA to others.



Improve bus stops with more shelters, amenities, real-time information, and lighting

The waiting environment for transit riders is an essential part of the transit trip. Rapid stations have experienced quality improvements to modernize the waiting environment and provide amenities to passengers. With over 6,000 bus stops that have approximately 1,100 bus shelters, RTA is challenged

with providing access to transit stops while also deploying limited resources appropriately.

The System Redesign Study completed in 2019 identifies a Frequent Network of routes that would provide short wait times and dependable transfers across the system. Implementation of changes outlined in that study provide an opportune time to review bus stops and amenities.



Improve cleanliness of buses, rail cars, stops and stations

Regardless of industry, a customer's experience can be immediately impacted by a location's cleanliness, or lack thereof. Whether stepping into a department store, restaurant, or bus, a lack of cleanliness can overwhelm all other aspects of the experience. RTA buses and trains provide millions of miles of service to millions of customers each year. The heaviest used stops and stations see thousands of customers a day. It is undoubtedly a challenge to maintain cleanliness of vehicles and facilities that witness such high levels of activity. However, cleanliness was mentioned numerous times from riders during public input and from stakeholders discussing the perception of RTA.

Once COVID-19 hit the region in early 2020, RTA stepped up efforts to sanitize and disinfect vehicles and facilities. RTA's COVID response continues to lead in national best practices for transit agencies.



Implement fare collection systems that speed up customer boarding

RTA completed a Fare Equity Analysis in 2019 as one of the Pillar Studies of the Strategic Plan. It suggested changes to RTA fare collection to improve customer experience and better reflect best practices in the US. A survey of riders revealed that the largest gaps between how well RTA does versus how important certain issues are included: *fares should be easy to understand; fares should be affordable; process should be convenient; and fare payment should be fast.*

In other words, the above issues are things customers really think RTA could do a better job on. The study identified that confusion arises among customers from multiple fare types and policies. The study revealed that the fare payment process inadvertently penalizes people with low incomes and slows down the boarding process.

Customers are often not aware of the best fare pass for their travel, which is particularly true for people with low incomes since they transfer among RTA services at higher rates. The study recommended immediate measures such as better education and promotion of fare processes, as well as long term initiatives that include new technology and fare capping. A court decision rendered RTA's Healthline Bus Rapid Transit fare collection and enforcement system that used uniformed police to enforce fares potentially illegal. As a result, RTA switched to riders walking up to the driver to show fare payment. This has slowed down boarding and made riding the HealthLine more inconvenient. By making the fare collection system easy to understand, convenient, and affordable without requiring complicated knowledge on behalf of the customer, RTA can improve the rider experience and speed up the boarding process.



Develop family and female friendly policies

Women comprise the majority of RTA's riders. RTA data corresponds with national transit demographics, in which approximately 55% of transit riders are women. Based on RTA's on-board survey, a likely rider of RTA is of working age, female, African American, employed full-time, and making less than \$25,000 per year. In 2019, Metro, the transit agency in Los Angeles, released the first report of its kind in the industry, titled "Understanding How Women Travel," that investigated the needs, preferences, and concerns of women on transit. It sought to understand the mobility barriers to economic opportunity that women face. The initiative was led by the Women & Girls Governing Council, a body established by Metro in 2017. The report reveals that existing evidence shows that women are responsible for a disproportionate share of the household's transport

burden while at the same time having more limited access to available means of transport. Often a focus on a gender lens towards female issues quickly turns to a look at family. In LA, data indicates that a majority of women bring their children on transit.

Similar to Metro, the benefits, burdens, and risks of RTA travel are more pronounced for women, as they make up the majority of RTA's customers. In addition to customers, much of RTA's workforce is comprised of women. Irregular schedules for bus operators, for example, can provide a unique burden on women in the transit industry that could be incorporated into decision-making processes at RTA.



Increase the security presence throughout the system

Safety on transit is an issue of reality as well as perception. Stakeholders have commented that a perception is that RTA is unsafe. In reality, RTA was awarded the Gold Award for Bus Safety & Security Excellence from the American Public Transportation Association multiple times in recent years. RTA's Traffic Radio Control Center operates 24 hours a day, seven days a week, and provides communication between operators, supervisory and maintenance vehicles, and emergency response personnel. RTA has a Transit Police Department that is the fourth largest police department in Cuyahoga County with 128 full-time officers and 20 part-time officers. In addition, eight canine teams roam the RTA system along with plain clothes detectives to deter crime and terrorism.

It is important to note that not all groups equate more police with more safety. Perception or not, populations of color, immigrants, and those from low income neighborhoods can describe a fear of police. In a system in which approximately 75% of customers are African American, a consideration of staffing, policies, and protocols of the security presence in the RTA system could be helpful to improve the perception of safety among current and future customers.

ECONOMIC PROSPERITY

Goal: RTA will be the transportation backbone that moves the economy forward and improves the quality of life of county residents by enabling economically sustainable regional land use and development and reinforcing investment in strategic employment and population centers.

Potential strategies include:



Focus transit service in core urban areas

Transit can often provide more service to more people and destinations in urban areas than it could in suburban areas. With more people living and working in dense land uses, service along main streets in Cleveland and around downtown can be efficient in transporting high amounts of people. In suburban and rural areas, land uses are such that fewer people live and work in dense areas, making it more difficult for a bus to efficiently pick up and drop off large numbers of people.

The System Redesign Study's accumulation of public surveys revealed that more people want a service focus on ridership than on coverage. People responded that they slightly preferred transit service where ridership potential is highest and where transit is supported by dense and walkable development.

RTA's Priority Corridor designation has existed internally in recent years and identified that efforts to improve transit conditions were focused on Broadway Ave, Cedar Rd, Detroit Ave, E. 105/Turney, Kinsman Rd, Lorain Ave, St. Clair Ave, Warrensville Centre/Harvard Rd, and W. 25th/State Rd/Pearl Rd. Many of these corridors are in core urban areas and have offered opportunities for transit supportive land uses and high ridership.



Establish positive advocacy messages about transit

Every vibrant city in the world has a robust transit system. Cleveland, Cuyahoga County, and all of Northeast Ohio have struggled in recent times to attract greater numbers of jobs and residents. As the region turns toward a new decade, positive developments abound. For example, after a national search Sherwin-Williams recently announced that it is keeping its headquarters in downtown Cleveland in the heart of a transit rich area. The global paint manufacturer and Fortune 500 company will join other new development in downtown Cleveland.

RTA has been a part of the region's identity for decades, and it will continue to be a key partner in future economic prosperity. Many people probably are not aware of RTA's economic impact. Cleveland State University quantified RTA's economic impact in a RTA Pillar Study in 2019. The findings discovered, among other things:

- RTA is critical to the economic success of the region and to the well-being of people who live and work here
- RTA's impact on local employment totals \$485.8 million, measured in annual earnings brought home by those who depend on RTA transit services to get to work

RTA and its partners can collaborate on positive messages that can promote shared benefits that transit creates. The growth in downtown residents and in University Circle continues. Partnership includes Downtown Cleveland Alliance, the UCI Transportation Task Force, GoOhio, and many others. Together with NOACA, Geauga County Transit, Lorain County Transit, Medina County Transit, and Laketran, the impact of transit on the region is a good story to be told.



Better link people to jobs

One of transit's key roles in the region, similar to regions around the world, is to connect people to jobs. The majority of RTA riders are employed full-time and are headed to a workplace. According to RTA's onboard survey data, approximately 10-15% of RTA riders are not currently employed but are seeking work. While some people in Northeast Ohio may never ride RTA, often the people that keep the city moving for everyone else - such as health care workers, restaurant workers, retail workers - do take transit.

Cleveland State University's economic impact report identified that, within a decade, for previously unserved areas that gain transit access:

- Employment increased by 3.1%
- Poverty decreased by 12.9%

The System Redesign Study identified concepts to link more people to jobs. For the average resident in Cuyahoga County:

- Current Funding Concept will link people to 11% more jobs in under 60 minutes than the present-day network.
- Expanded Funding Concept would link to 38% more jobs within 60 minutes compared to the present-day network.

Shaker Heights and the Van Aken district have light rail lines with room for continued collaboration for transit-oriented development. RTA has new partnerships as a result of the Paradox Prize, a local initiative for innovative transportation, as well as with the Centers for Children and Families. By linking people to jobs, RTA's services offer access to prosperity for individuals and families. At the same time, this access to personal opportunity fosters collective opportunity for the region as a whole.

RTA is critical to the economic success of the region and to the well-being of people who live and work here.



\$485.8
million

*RTA's impact on **local employment**, measured in annual earnings by those who depend on RTA transit services to get to work*



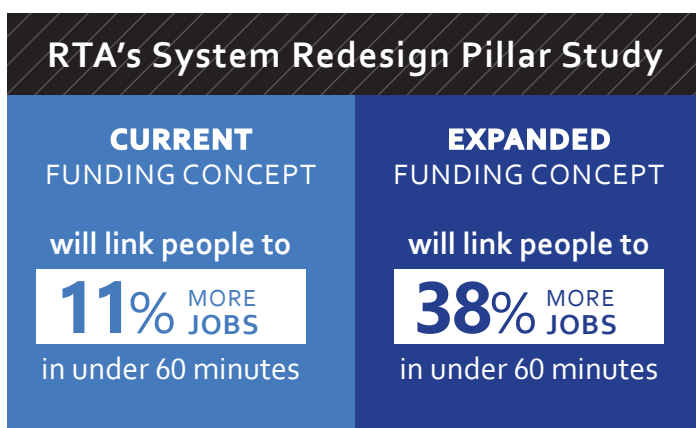
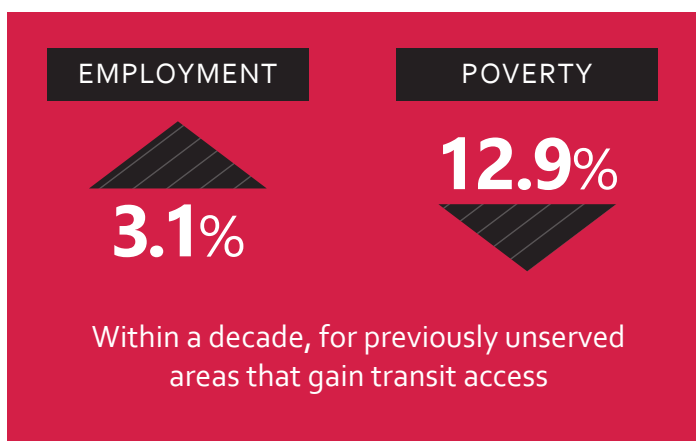
\$2.2
billion

*Impact on Cuyahoga County **property values***



\$51.8
million

***Annual savings** to passengers who choose to ride RTA rather than use their own transportation*



Better link people to retail and entertainment destinations

Cleveland is home to world-class entertainment destinations, such as Playhouse Square, FirstEnergy Stadium, Rocket Mortgage FieldHouse, Progressive Field, Rock & Roll Hall of Fame, West Side Market, and the numerous destinations around University Circle, to name a few. Many entertainment destinations are near Rapid stations and bus service. On a smaller scale, retail destinations across the region benefit from transit access as well. In all of these instances, both workers and visitors to these locations benefit from greater transit access. Increased weekend service, as identified in the System Redesign Expanded Funding Concept, would provide better transit to destinations on weekends.

Additionally, RTA can improve linkage to these destinations by improving processes for special event service. A fairly common observation during public engagement opportunities was that RTA could do a better job of serving major events. RTA's service during special events offers the opportunity to put its best foot forward to infrequent riders and tourists in a way that improves the perception of the region as a whole.



Create partnerships for transit oriented development planning and implementation at rail stations and along priority bus corridors

RTA has seen many successes in transit-oriented development along priority corridors and at Rapid stations. The HealthLine has delivered more than \$9.5 billion in economic development along the Euclid Corridor in the decade since it was built.

This magnitude of success is difficult to replicate, but smaller scale initiatives can make a big impact. Through partnerships with agencies such as City of Cleveland, Cuyahoga County, NOACA, and others, joint applications for Federal Transit Administration grant funds could have a greater chance of being awarded. RTA is continuing its success with recent transit-oriented development initiatives along W. 25th St in partnership with MetroHealth and others. A 2015 planning study was followed by 2017 implementation of the MetroHealth Line with improved amenities. RTA then received additional FTA grant funding and is currently collaborating on additional improvements. This model of planning followed by implementation, coordinated with strong collaboration among partners, is vital to RTA's contribution to the economic success of the region.

ENVIRONMENTAL SUSTAINABILITY

Goal: RTA will reduce greenhouse gas emissions in the region by providing clean transportation and shifting travelers away from single occupancy vehicles.

Potential strategies include:



Establish a roadmap to mode shift toward transit to meet regional climate crisis goals

One of the best ways to promote environmental sustainability is to get more people to ride transit instead of driving in their personal vehicles alone. Cuyahoga's Climate Change Action Plan calls for the County to aspire to a 45% overall reduction in greenhouse gas emissions from its 2010 baseline by 2030 and net-zero emissions by 2050. It notes that Cuyahoga County is particularly auto-dependent, with 79.8% of commuters driving alone to work, above the national average of 76.4%. The plan calls for repurposing overbuilt road infrastructure for alternative modes of transportation (e.g. dedicated bus lanes, bike lanes) without creating major congestion issues. It aims to return public transit service and ridership to 2006 levels by 2025 and increase the transit mode share.



Expand sustainable fleet, including electric-powered buses

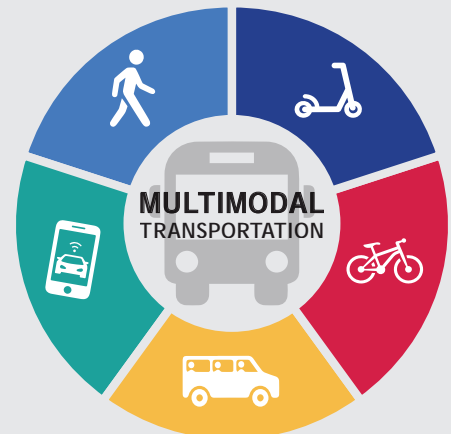
RTA's strong efforts to transition its diesel fleet to compressed natural gas (CNG) have reduced negative impacts to the environment. Vehicle technologies such as electric vehicle technology and hydrogen fuel cell technology are evolving rapidly. Electric vehicles for passenger use have become more popular over the past decade with a continual expansion of the range covered on a charge. At the same time, technologies for heavy duty vehicles such as buses have become prominent across the U.S. and the world. With grant funds available from FTA and public advocacy increasing to address climate change, more transit agencies are transitioning to green technologies.

Zero emissions vehicles offer a quiet, comfortable ride experience that customers enjoy. On a regional and global scale, they create lower global emissions than diesel and compressed natural gas vehicles.

SUPPORTING MULTIMODAL CONNECTIONS TO TRANSIT



A de-emphasis on single occupancy automobile transportation will provide opportunities to diversify high quality alternative modes.



RTA and partners can prioritize multiple modes that support green and healthy communities.

Importantly, on a local scale, they create zero tailpipe emissions for the neighborhoods immediately around transit corridors, thus helping to create healthier neighborhoods.

The American Lung Association gives Cuyahoga County a grade of “F” for ozone pollution in its State of the Air 2019 report. The report notes that some people are especially vulnerable to the effects of air pollution, including infants, older adults and people with lung diseases like asthma. People of color and those earning lower incomes are often disproportionately affected by air pollution that put them at higher risk for illnesses. In Cuyahoga County, many of the most frequent and highest ridership routes travel through areas of low incomes and people of color. While transit buses are only part of the problem, RTA can lead on this issue to bring zero emission buses to the streets of Cleveland to improve the customer experience and support healthy communities.



Support bike, pedestrian, scooter, and other multimodal connections to transit

A majority of RTA customers access RTA’s services by walking. Cuyahoga’s Climate Change Action Plan calls for more public transit, biking, and walking. The Cleveland Climate Action Plan aims to make Cleveland a premier cycling city. The advocacy group Bike Cleveland notes that 1.2% of Cleveland’s commute mode share is by bicycle.

Shared scooters have burst onto the urban scene rapidly in recent years across the country. City of Cleveland coordinated a 6-month demonstration permit for multiple scooter providers in 2019, and even a casual observer was able to see their immediate popularity downtown.

People who are bicyclists, scooter riders, and transit riders are often a mix of the same people. By collaborating, RTA and partners can prioritize multiple modes that support green and healthy communities. A de-emphasis on single occupancy automobile transportation will provide opportunities to diversify high quality alternative modes.



Implement comprehensive sustainability initiatives for all aspects of RTA’s operations

A transit agency, like all businesses, has multiple opportunities to support sustainability initiatives. Beyond the transit vehicles themselves, sustainable initiatives can include items such as energy efficient facilities and support for the use of sustainability strategies in capital projects to reduce personal and facility carbon footprint. In 2019, RTA’s Brookpark Station received LEED Silver Certification. RTA’s sustainability plans will drive green solutions forward in collaboration with similar efforts at the City of Cleveland and Cuyahoga County.



Expand integration of alternative power at stations/stops

Transit agencies around the country have experimented with the use of alternative power such as solar, wind, and geothermal. METRO in Akron utilized over 400 rooftop solar panels on its transit center. RTA’s Brookpark Station utilizes innovative wastewater design, stormwater processes, and energy efficiency to create an environmentally friendly facility. To reduce electricity usage, RTA completed a lighting retrofit and installed LED bulbs to reduce electricity usage at the Central Bus Maintenance Facility. Initiatives such as these show that changes big and small can improve an agency’s environmental sustainability.



Offer charging stations at RTA facilities

Electric vehicle charging stations could offer an amenity to the public that supports green transportation. One of the challenges to adoption of electric vehicles is the ability for users to charge the battery. NOACA and State of Ohio support initiatives to expand electric vehicle charging infrastructure. RTA’s public property is a potential source to locate multiple green transportation amenities in a single location, where feasible.

EQUITY

Goal: RTA will continue to provide equitable transit services that benefit disadvantaged individuals and communities.

Potential strategies include:



Implement fare policies that include fare capping and include free transfers

RTA's Fare Equity Analysis pillar study determined that over half of trips are taken by riders who are best served by a monthly or weekly pass. However, about half of these trips, especially those taken by people with low-incomes and people of color, are paying more than they should because they do not purchase a pass or purchase a weekly instead of a monthly pass. In addition, RTA's System Redesign bus network would require about half of all riders to transfer, but some riders, especially people with low incomes and minorities, pay excessively for transferring. RTA

should change its fare policy to eliminate the cost for transfers between RTA services.

Fare capping refers to a policy that is becoming best practice with today's fare payment technology. Fare capping makes the equivalent of transit passes available to people who can't cover the full cost at once. As a rider using a transit card or app rides RTA enough times to reach the cost of a daily, weekly, or 30-day pass, they would no longer be charged for any additional trips for the duration of the appropriate pass. There are variations of this policy, but for a frequent rider, this would mean that they could pay individually for each trip (\$2.50) 38 times to reach the cost of a \$95.00 monthly pass ($\$2.50 \times 38 = \95.00). If, for instance, a person rode the bus twice per day, by the 20th day of the month they would be able to ride free for the next ten days.

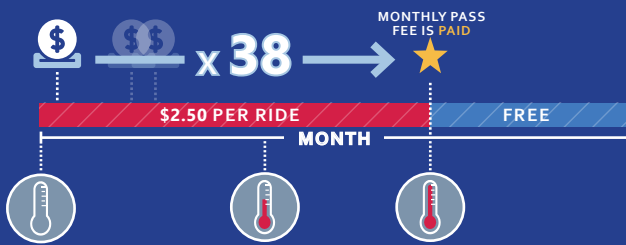
It is inappropriate to make poor people pay more money than well-to-do people for the same RTA ride, simply because poor people cannot afford to buy in bulk. Policies and technology can address this issue.



Consider lower fares for low income riders and workforce development programs

FARE CAPPING

An alternative payment schedule for a monthly pass that allows the rider to make individual payments per trip until the total monthly pass fee is paid, at which point the rider can ride for the remainder of the month without paying.



= Price for single ride (\$2.50)

= Price for monthly pass (\$95.00)

A majority of RTA riders' household income is less than \$25,000 per year. RTA's Fare Equity Analysis Pillar Study's rider survey found that over 30% of respondents do not buy a monthly pass because they "can't afford it." This is unfortunate because for a frequent rider, the monthly pass offers the cheapest fares over time. Those who would benefit most from this deal are boxed out of this opportunity by their economic situation.

Additionally, a majority of respondents to the Fare Equity Analysis pillar study survey revealed that they do not use a monthly pass or a 7-day pass because they either "don't use transit enough" or they "can't predict transit use." For these riders, they risk buying more than they need due to the uncertainty of their lives, a risk that can have devastating consequences for people with low incomes.

The majority of RTA riders are employed full-time and are headed to a workplace. According to RTA's onboard survey data, approximately 10-15% of RTA riders are not currently employed but are seeking work. It would be beneficial for RTA to support the equitable access to opportunity of residents with low incomes and those seeking jobs through equitable fare policies.



Consider increased costs for premium service

The Park & Ride surcharge adds complexity to fares without raising significant revenue, as highlighted by RTA's Fare Equity Analysis Pillar Study. Park-N-Ride Bus fare is \$2.75 for a single trip compared to the Bus/Rapid/BRT fare of \$2.50. Compared to other vehicles, the Park-N-Ride fleet provides a more luxurious experience. In addition to express routing, RTA's recent addition of nine commuter coaches to its Park-N-Ride fleet, with three more to arrive later in 2020, provide unique amenities to passengers: overhead parcel racks, individual reading lights, air-flow controls at every seat, and USB ports at every seat.

Park-N-Ride fare differentials should be increased to at least \$0.50 or eliminated, as recommended by RTA's Fare Equity Analysis Pillar Study. Simplicity of understanding for customers is essential so that confusion over fare costs do not create a barrier to ride. Any addition of complexity in fare costs should be significant to raise funds in an appropriate and equitable manner.



Improve access for those of all physical abilities

Paratransit service is an essential part of the lives of people with physical or other disabilities who are inhibited in their ability to ride fixed route transit. RTA's paratransit costs are higher than in comparable cities, as highlighted by the Financial Analysis and Economic Forecast Pillar Study. Streamlining costs and finding ways to reduce costs are valuable aspects of

RTA's financial future. RTA's Fare Equity Analysis Pillar Study highlighted that RTA's paratransit fare structure is one area of investigation. Most transit agencies charge the maximum allowable for paratransit, twice the base fare, and do not provide passes.

RTA has increased access for people with disabilities for decades, with numerous Rapid stations being renovated to include Americans with Disabilities compliant sidewalk ramps and related infrastructure. Every fixed route transit vehicle is able to accommodate people in wheelchairs. RTA should continue this strong focus on improving access for those of all physical abilities on fixed route transit, so that as many people as possible can have the freedom that others have without having to rely on paratransit.



Ease payment access for unbanked population

For a household of four people, \$25,000 per year of income is approximately the line determined by the government to be considered living in poverty. Many RTA riders make less than that per year. According to the Northeast Ohio Coalition for the Homeless, there are over 225,000 residents of Cuyahoga County, approximately 18%, who are living in poverty. According to the Center for Community Solutions, approximately 36% of the population of Cleveland lives in poverty. People with low incomes face numerous daily challenges, one of which is the ability to access transit payment options. People with low incomes may not have a bank account, debit card, or credit card that can allow them to access RTA's services. RTA's website lists approximately 88 vendor locations that are authorized sales agents for transit passes. RTA should maintain this network, make sure vendors are providing passes in a way that meets RTA customer standards, and build on this network of vendor partnerships. Future advancements in fare technology should follow best practices to provide equal access to fare products for the unbanked population as well.

FINANCIAL STABILITY

Goal: RTA will be a responsible steward of public funds by providing exceptional services cost-effectively.

Potential strategies include:



Identify additional funding to meet existing and future transit needs

According to the Ohio Public Transit Association, Ohio ranks 38th in the nation in per capita funding for transit and the State funds only three percent of public transit expenditures. RTA is a vital backbone for the region that serves more than a transportation purpose – the Economic Impact Pillar Study reveals the deep integration of RTA into the shared success of Cleveland, Cuyahoga County, Northeast Ohio, and the entire state.

RTA has opportunities to reduce some costs, as described by the Financial Analysis and Economic Forecast Pillar Study. RTA’s administrative costs appear to be higher than at agencies in similar cities, so eliminating positions and reorganizing job responsibilities could save up to \$13 million per year. The study finds that RTA’s paratransit costs are higher than in comparable cities, so opportunities to streamline paratransit costs could potentially save approximately \$7 million a year. RTA’s aging fare equipment is becoming increasingly expensive to maintain and doesn’t meet the future needs of RTA. The high cost of maintaining rail infrastructure could potentially be assisted with sources of new funding including a sales tax increase, a new property tax, or a commercial-only property tax. In 2019 alone, RTA successfully competed for and won approximately \$40 million in competitive grants. Continual advocacy at the federal level with Federal Transit Administration will be necessary, as the current administration has provided persistent challenges to properly funding urban mass transit in Cuyahoga County and around the country.



Increase revenue by increasing ridership

RTA’s current efforts to redesign its bus routes and bring ridership in line with peer cities could increase revenue by \$6 million, according to the Financial Analysis and Economic Forecast Pillar Study. The System Redesign pillar study’s Current Funding Concept will expand frequent service on key corridors such as Detroit, Lorain, Kinsman, and E. 105th.

RTA’s Priority Corridors drive transit ridership. With high levels of population and job density, Priority Corridors provide efficient service where transit works best.

Based on the community’s feedback, the Current Funding Concept allocates 65% of current resources toward enhancing frequencies with the remaining 35% toward market coverage. This will help stem decreasing ridership because it will provide 167,000 more people with frequent service within a half-mile walk. It will provide access to approximately 11% more jobs in 60 minutes compared to the existing bus network.

Fare revenues provided approximately \$42.8 million in 2019, down from \$46.6 million in 2018. By redesigning bus service to meet the needs of customers and increasing ridership, a corresponding increase can occur in revenue.

The System Redesign pillar study’s Current Funding Concept will expand frequent service on key corridors such as Detroit, Lorain, Kinsman, and E. 105th.



Create revenue through real estate asset management and transit oriented development

RTA's real estate assets include hundreds of parcels across the region. RTA owns its headquarters, rail stations, rail yards, vehicle storage and maintenance facilities, transit centers, and additional infrastructure and facilities. Many of these assets are vital to the current and future operations of core RTA services. As highlighted in the Financial Analysis and Economic Forecast study, however, there are opportunities to evaluate whether some real estate assets could be sold or leveraged in innovative ways. Through potentially a one-time sale or an ongoing influx of capital, these real estate assets could be opportunities of untapped revenue. Transit oriented development is taking place on RTA-owned and adjacent property at the West 25th Street station in Ohio City. In partnership with public and private partners, RTA can continue to facilitate creative use of its real estate and leverage its assets in ways that support community development. RTA's transit oriented development program is a strong asset for future success.



Serve as a catalyst to corridor and district development

The HealthLine has been a catalyst in attracting more than \$9 billion in development to the Euclid Corridor in the past decade, a national model of Bus Rapid Transit success. Station improvements and renovations such as at the Cedar-University station and Mayfield-Little Italy station on the Red Line have caused ridership to increase. As highlighted by the Financial Analysis and Economic Forecast study, these stations have attracted hundreds of millions of dollars in redevelopment in the surrounding areas. These types of projects highlight the potential for RTA improvements to be a catalyst towards economic development, placemaking, and revitalization of adjacent neighborhood districts. NOACA's TLCI program assists in corridor development across the 47 communities in RTA's service area. Through partnerships with City of Cleveland, Cuyahoga County, NOACA, private developers, local institutions, and community groups, RTA can continue to provide value to corridor and district development.



STATE OF GOOD REPAIR

Goal: RTA will enhance, preserve and maintain its infrastructure and assets.

Potential strategies include:



Prioritize reinvestment in replacement rail cars

RTA's 33-mile rail network is a multibillion dollar infrastructure asset to the community, as highlighted by the Rail Car Evaluation pillar study. RTA's heavy rail vehicles (HRVs) and light rail vehicles (LRVs) have approximately five and ten years of remaining useful life, respectively. As fleets age, in-service failures increase, customer service degrades, service reliability suffers, and maintenance costs increase.

The study concluded that a \$240 million program of rail car replacement and infrastructure upgrades is a prudent course of action. The report recommends RTA begin procuring HRVs by 2020 for delivery no later than 2023, followed by procuring LRVs by 2025, for delivery no later than 2028. The recommendation includes associated infrastructure upgrades to the rail maintenance facility, equipment and stations. As of early 2020, RTA has been awarded approximately \$61 million, with another \$57 million committed, approximately halfway toward the program goal of \$240 million. Funds include awards and commitments from NOACA, ODOT, Federal Formula Funding as well as the self-funded Rail Car Replacement Fund.



Prioritize reinvestment in track and bridge rehab

Reinvestment in track, bridge, and related rail infrastructure is essential to deliver fast, reliable service to customers. When RTA's rail infrastructure is not prioritized and maintained, high profile disruptions to customers can create a lasting impression that drives away future riders. In 2019, RTA was forced to make repairs to the Red Line "S Curve" retaining wall between W. 117th St. and West Blvd. stations. Red Line service was immediately suspended and replaced by buses that caused slower trips and inconvenience for customers during high profile events. When operating as designed without issues, the Red Line is capable of providing fast service rivaling the best mass transit rail in the country.

RTA is making continual improvements across its system as highlighted by recent reconstruction of the E. 116th St. bridge, electrical upgrades to Brookpark Shop, completion of track bonding in Brookpark yard, bonding of Light Rail System track and installation of switch circuit controller, and reconstruction of the W. 65th St. substation. Ongoing projects include light rail track rehabilitation from E. 55th St. to the Buckeye-Woodhill Station and rehabilitation of tracks at the Tower City Station.





Invest in maintenance of bus fleet

The bus fleet represents the workhorses of the agency's service. More than 22 million trips are taken annually on RTA's buses, providing the majority of RTA's rides for customers. Federal Transit Administration defines the useful life of a bus to be the lesser of 12 years or 500,000 miles. The average age of the large bus fleet was 7.6 years at the end of FY 2017 and 7.2 years at the end of FY 2018. RTA has a plan in place to purchase over 200 new transit vehicles and retire old ones over the next five years. RTA's 2019-2023 Capital Improvement Plan continues a planned bus replacement program, begun in 2013, that plans to continue until the entire fleet is replaced. The program is expected to further lower the average age of RTA's bus fleet to approximately 6.2 years at the end of 2024.

It is admirable that the bus replacement program aims for a new fleet. However, it would be prudent to alter the bus replacement program by discontinuing the purchase of diesel vehicles. RTA's procurement plan calls for purchase of new diesel vehicles for the foreseeable future, but this disregards issues of global climate change and local neighborhood health. At the same time, RTA could transition toward a pilot program for electric vehicles, supported by federal grants. It is also possible that RTA's future peak vehicle requirements will change as a result of the System Redesign implementation. Reductions in vehicles have occurred in other cities that have undergone transit system redesigns, so implementation of the plan should consider whether RTA needs as many vehicles as planned in future years.

NOACA's Long-Range Transportation Plan AIM Forward 2040 identifies RTA bus replacements on its list of major projects. With a total of approximately \$460 million through 2040 for RTA bus vehicles, RTA should not miss an opportunity to transition its fleet to support clean neighborhoods and utilize modern technology.



Invest in maintenance and rehabilitation of station/stops

With over 600 revenue vehicles completing over 100,000 trips per day to nearly 7,500 bus stops and rapid stations, maintaining a state of good repair for all of RTA's infrastructure is vital for excellent service. RTA recently completed construction of the E. 116-St. Luke's Station ADA rehabilitation, and construction of the Farnsleigh Station ADA rehabilitation. Ongoing projects include rehabilitation of Blue Line and Green Line stations with refurbished shelters and signage.

As service is redesigned in the coming years to connect more people to jobs, there is an opportunity to prioritize stops that will be heavily used in RTA's frequent network.



Study possibilities for reallocating Waterfront Line and Green Line rail service

The Cleveland region is the smallest urban area in North America to have both Heavy (the Red Line) and Light rail (Blue, Green and Waterfront lines) transit systems. As highlighted in the Financial Analysis and Economic Forecast study, performance of the light rail system is in line with peers. However, dropping ridership on light rail and across the system could force challenging decisions in the best way to do more with less funding. One idea proposed is to reallocate Waterfront Line and Green Line rail service in order to utilize funds towards other services. Population loss continues to highlight that RTA's rail system is built for a larger region. When proposed for public input, the public did not view this idea favorably. Rather than reallocate assets, there is a desire to build upon RTA's and Cuyahoga County's rail assets and use them as a competitive advantage to build a stronger economy in the coming decades.

TECHNOLOGICAL INNOVATION

Goal: RTA will lead in its integration of new technologies and evolving mobility options to enhance the transportation experience for customers, RTA employees, businesses and visitors.

Potential strategies include:



Develop a coordinated payment app for seamless transit coordination

Some of the most exciting developments in transit and mobility relate to new technologies that allow seamless payment. In 2016, RTA made a real step forward with the launch of the RTA CLE app for mobile ticketing that allows customers to pay for 1-Ride, All-Day, 7-Day, and Monthly Passes with a smartphone. RTA's Fare Equity Analysis pillar study concluded that aging fare equipment will be increasingly expensive to maintain and does not meet the needs of RTA's future.

The study recommended a new fare collection system for long-term improvements. A cloud-based open architecture would allow RTA to avoid being locked into a certain expensive proprietary system with a single vendor. Transparent standards could empower RTA to keep pace as technology evolves and allow RTA to save money when updating outdated technology. An account-based, contactless system that allows open payments will create a seamless boarding experience for customers. With options for customers to pay using a smartcard, contactless credit card, or smartphone, riders will experience the flexibility and frictionless experience they desire. Payment options will include passes and Stored Value, similar to cash, as well as fare capping to ensure no one pays more than they should over time. A new payment system could support the development of Mobility-as-a-Service (MaaS), which describes a potential future in which RTA offers seamless integration with private transportation providers.



Implement more widespread transit signal priority

Corridor improvements can create faster bus trip times for customers. Transit Signal Priority, in conjunction with bus-only lanes and queue jumps, can improve the transit riding experience and create more efficient operations. Transit Signal Priority 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, Transit Signal Priority automatically operates in order to keep buses on time and reduce delays. Queue jump lanes are a design treatment that allows buses to bypass stopped traffic through a short dedicated transit facility and enter traffic flow at an intersection in a priority position, thereby reducing delay.

Travel time reliability can also be increased through broader use of bus-only lanes. New federal guidance from USDOT in 2019 approved innovative red pavement for bus-only lanes.



Apply advanced flexible routing technology to enable improved paratransit scheduling

Technology improvements are upending the status quo of paratransit service. The Americans with Disability Act requires public transit agencies that provide fixed-route service to provide complementary paratransit service to people with disabilities within 3/4 of a mile of a bus route or rail station. This service provides a means of mobility for people with disabilities who cannot use the fixed route bus or rail service. While RTA's paratransit service is in line with processes at many other agencies, the entire paratransit service model can leave much to be desired for customers. Even for trips that go as planned, the advanced scheduling that goes into trip making can limit potential mobility of people with disabilities.

New technology allows for riders to more easily book rides and seamlessly get where they need to go. Transit agencies are beginning to offer same-day paratransit service that improves customer experience. Multiple

vendors provide opportunities to utilize advanced algorithms to dynamically create routes in vehicles that are fully wheelchair accessible. RTA can explore these new opportunities in order to improve customer experience.



Pilot on-demand flexible bus service (microtransit) where fixed routes are not justified

Microtransit offers new opportunities to provide enhanced service in low density areas. Technological advancements driven by the private sector have pushed new possibilities for serving public transit customers. Microtransit uses small vehicles and dynamic routing and scheduling. Customers utilize a smartphone app to plan, request, pay, and track the vehicle within a geo-fenced zone. For those without a smartphone, a call-in option is also available.

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. As RTA plans to shift its fixed routes to emphasize frequency as described in the System Redesign Pillar Study, there is a desire among the public to also maintain coverage to lower density areas. 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 hassles of advanced scheduling and insufficient customer communication. Today, technology advancements have created new business



models for serving customers in low density areas. Smartphone apps that provide vehicle location, real-time information, immediate scheduling requests, and intelligent routing algorithms have changed the potential of flexible bus service.

Autonomous microtransit is emerging as a new technological advancement and has been piloted around the world. The future offers abundant potential for on-demand, flexible microtransit service that can scale up or down based on demand in order to serve customer needs.



Use technology to improve transfer connections

Technological advancements can offer customers more information about their complete trip and more confidence in the reliability of RTA's services. Connection Protection gives passengers real-time transit information to more accurately predict whether they will make their next connection. A passenger can use their personal mobile device to initiate a request for a connection to wait. If multiple people on a delayed transit vehicle will miss their next connection, transportation providers can adjust departures to enable the passengers to make their next connection. For high frequency routes in a grid network, which is the backbone of the System Redesign Pillar Study, it would be inappropriate to hold buses for transfers for frequent routes since the next bus would be only a few minutes away anyway. However, for routes with long headways and connections between multiple agencies, such as when RTA service connects with transit buses from outlying counties, connection protection can assure that the passenger connection occurs. A balance is required, since downstream impacts of holding a vehicle for connection may make a bus end up running late for the remainder of the current trip and potentially have impacts that extend through the transit network.

When implemented properly, technology allows more seamless connections that reduce near-misses of transfers on infrequent routes. When connecting to outlying agencies, a central communication component could be shared among transit providers to provide seamless transfers for regional travelers.



Provide improved notice of service changes and special event operations

In recent years, improved communication is one of the biggest innovations in transportation. In fact, 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. Today’s ability to easily communicate with customers contrasts with RTA customer complaints of a lack of information. 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 RTA riders having smartphones, improvements to RTA’s app could improve alerts to affected customers who travel on a certain route or are located within a certain affected geography. Any improvements to the app would 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 RTA’s services.

TRANSPARENCY

Goal: RTA will instill public confidence as a well-run institution that is accountable to its customers, employees, and taxpayers.

Potential strategies include:



Provide open data to the public on RTA’s goals and outcomes

Transit agencies adopting governmental best practices are beginning to provide online dashboards on their websites. A public online dashboard could improve transparency and accountability, display metrics that impact customer confidence, and build public trust.

Unfortunately, RTA customers have lost trust.

Ultimately, customers have lost trust in RTA’s ability to effectively transport them to and from their locations each day. Through open, easily accessible data on an online dashboard, customers can gain confidence and begin to trust RTA again.



Implement strategies to make board committee meetings more accessible

The internet and smart phones provide more opportunities than ever to broadly disseminate information to those who seek it. Millions of rides are taken on RTA services, yet many riders likely do not know that their trips are impacted by what happens in a board room each month. Through simple measures such as video live-streams and recordings of board and board committee meetings, interested parties can easily watch proceedings. Greater access to technology also allows more opportunities for remote question and comment sessions with RTA leadership and board members. The exact software or format for these meetings is not as important as the effort to utilize new technology and policies to support informed consumers of RTA’s services.



Provide reports on customer feedback and responsive actions

RTA offers many ways to offer feedback. Customers can call the RTAanswerline by phone, utilize the internet through www.rideRTA.com/feedback, and get in-person help at Tower City and the RTA Main Office. However, the feedback system can be convoluted and disconnected from solutions to complaints. Internal RTA staff identify that simple issues like a bus that has graffiti on a seat, for example, can require a detailed form submittal that addresses many topics that are not an issue.

RTA could focus on streamlining customer feedback, improving the problem resolution process, and monitoring progress. Through easily viewable reports on an online dashboard, customers could view the types of comments and see RTA’s continual feedback and actions. Not every comment will result in changes in RTA’s service, of course, but customers will be pleased that their voices were heard.

STRATEGY PRIORITIZATION FROM PUBLIC INPUT

STRATEGY	RATING
Identify additional funding to meet existing and future transit needs	1
Better link people to jobs	2
Increase frequency of bus service on existing key routes, while maintaining existing coverage	3
Improve bus stops with more shelters, amenities, real-time information, and lighting	4
Implement fare policies that include fare capping and include free transfers	5
Prioritize reinvestment in replacement rail cars	6
Build a coalition to support and advocate for funds for transit oriented development	7
Invest in maintenance of bus fleet	8
Implement fare collection systems that speed up customer boarding	9
Consider lower fares for low income riders and workforce development programs	10
Increase revenue by increasing ridership	11
Provide open data to the public on RTA's goals and outcomes	12
Use technology to improve transfer connections	13
Improve access for those of all physical abilities	14
Serve as a catalyst to corridor and district development	15
Focus transit service in core urban areas	16
Better link people to retail and entertainment destinations	17
Invest in maintenance and rehabilitation of stations/stops	18
Develop coordinated payment app for seamless transit coordination	19
Create safer and better walking and bicycle connections.	20
Improve cleanliness of buses, rail cars, stops and stations	21
Prioritize reinvestment in track and bridge rehab	22
Provide reports on customer feedback and responsive actions	23
Provide improved notice of service changes and special event operations	24
Create partnerships for transit oriented development planning and implementation	25
Establish positive advocacy messages about transit	26
Expand incentives for transit ridership	27
Implement more widespread transit signal priority	28
Create revenue through real estate asset management and transit oriented development	29
Ease payment access for unbanked population	30
Support bike, pedestrian, scooter, and other multimodal connections to transit	31
Implement strategies to make board and board committee meetings more accessible	32
Implement bus rapid transit (like Euclid Avenue and MetroHealth line) on more priority routes	33
Expand sustainable fleet, including CNG and electric-powered buses	34
Develop family and female friendly policies	35
Increase service during the middle of the day and on the weekend, while maintaining existing coverage	36
Establish roadmap to mode shift toward transit to meet regional climate crisis goals	37
Form partnerships with senior centers and medical providers	38
Develop a multi-county transit system with seamless service	39
Implement comprehensive sustainability initiatives for all aspects of RTA's operations	40
Apply advanced flexible routing technology to enable improved paratransit scheduling	41
Streamline customer feedback and monitoring system	42
Increase the security presence throughout the system	43
Study possibilities for reallocating Waterfront Line and Green Line rail service	44
Expand integration of alternative power at stations/stops	45
Pilot on-demand flexible bus service (microtransit) where fixed routes are not justified	46
Partner with mobility providers (such as Uber, Lyft, Via, Lime, Bird) to expand reach of transit	47
Offer charging stations at RTA facilities	48
Consider increased costs for premium service	49

Conclusion

Strategies were proposed to the public in meetings and through online engagement. Each strategy was ranked by the public on a five-point scale, with five indicating the most desired strategy. The top strategies identified were:

- Increase frequency of bus service on existing key routes, while maintaining existing coverage
- Identify additional funding to meet existing and future transit needs
- Better link people to jobs

Results also showed that the public wants better bus stops, new rail cars, better fare policies and technology, and collaboration to create transit oriented development. The public wants RTA to turn the page to a new day of engagement with customers and strategies that reflect the best of today's transit solutions.

In short, there is a desire for solutions that make the customer experience better. Results are displayed on the previous table. Recommendations for Priority Corridors and Key Initiatives are addressed in subsequent sections of the report.



Priority Corridor Update



RTA will designate Priority Corridors for capital investment in street infrastructure to improve bus speed, reliability, and rider convenience. RTA will partner with communities to create street amenities and foster transit oriented developments that support bus ridership on the Priority Corridors. Typical infrastructure improvements that encourage bus ridership include signal priority, bus lanes, bus bumpouts, upgraded transit waiting environments and improved pedestrian amenities. Supports for transit oriented development include zoning and incentives that encourage density, a mix of uses, reduced parking requirements, and pedestrian orientation.

The previous RTA Strategic Plan identified several Priority Corridors that were recommended for investment. Those Priority Corridors were discussed in the Existing Conditions chapter of this report. Among

other achievements, the establishment of Priority Corridors facilitated improvements including the MetroHealth Line on W. 25th St. the Cleveland State Line on Clifton Blvd and adding E. 105/E. 93rd as part of the City's Thrive E.105 Plan. The Priority Corridors brought focus to locations where transit-oriented development could be emphasized in partnership with local stakeholders.

The Strategic Plan and pillar studies offer an opportunity to update Priority Corridor designations. Updated priority corridors are listed below, in alphabetical order, arranged in Near-Term and Long-Term categories.

The long-term corridors are inclusive of the near-term and together build an interconnected network. This section discusses a framework for a Priority Corridor update and the process for identifying new Priority Corridor designations.

PRIORITY CORRIDORS

*Consistent with System Redesign
Pillar Study*



NEAR-TERM PRIORITY CORRIDORS

- | | |
|----------------------------------|---------------------------------|
| A W. 25th St | E Red Line |
| B Broadway Ave | F Blue Line / Green Line |
| C Union Ave / Harvard Ave | G Lorain Ave |
| D Euclid Ave | H Detroit Ave |

LONG-TERM PRIORITY CORRIDORS

- | | |
|------------------------------------|--|
| I Kinsman Rd / Chagrin Blvd | M Superior Ave |
| J E. 105th St / E. 93rd St | N St. Clair Ave |
| K W. 117th St | O Lakeshore Blvd |
| L Cedar Rd / Quincy Ave | P Warrensville Center Rd / Noble Rd |

Community Partnership on Priority Corridors

Community partners can get involved in implementing improvements on priority corridors.

- Involve RTA early in infrastructure projects that impact the roadway
- Work with RTA to pursue grant funding
- Municipalities can encourage developers to talk with RTA in the process regarding needs and project design

Priority Corridor Findings

WHY UPDATE PRIORITY CORRIDORS FROM PREVIOUS STRATEGIC PLAN?

The Priority Corridor designation is a valuable tool for RTA staff that has led to a focused approach to transit corridor enhancements and partnerships. However, findings from the Strategic Plan and associated pillar studies highlight potential for adjustments.

More connections among Priority Corridors are needed

The System Redesign pillar study emphasizes that the best way to connect more people to more jobs is to create a frequent network of routes. The Fare Equity Analysis pillar study reveals that a significant amount of riders transfer between services across different corridors. In fact, people with low incomes transfer at a higher rate than other RTA riders. Connections between Priority Corridors help emphasize equity in the provision of RTA's services. Connections between Priority Corridors are just as valuable as the corridors themselves. Examples of updated Priority Corridors with new connections include Lorain Ave and Kinsman Rd / Chagrin Blvd.

Cohesion between infrastructure development and service frequency needs to be enhanced

The benefits of steady transit frequency all day add to the connectivity of routes and support the usability of transit. In the past, one would have imagined that Priority Corridors would identify locations with the most frequent transit service. In many cases, this was true, such as along W. 25th St, Broadway Ave, and others. In other cases - such as Detroit Ave, Cedar Rd, E. 105th, Lorain Ave, Kinsman Rd, and others - the Priority Corridor designation has not ensured frequent transit service throughout the day. Connecting infrastructure development, such as enhanced bus shelters and transit-oriented development, alongside high levels of frequent transit service will bring cohesion to RTA's efforts. Tying the two together will create a better customer experience.

New corridors offer new network opportunities

Additional north-south and east-west corridors outside of the urban core offer new opportunities for connectivity. W. 117th St is an example of a new

Priority Corridor that may not be the most densely populated and heavily traveled corridor in and of itself, but it offers valuable opportunities for frequent connections to many other corridors. Frequent, fast transit along W. 117th would offer connectivity between Detroit Ave Priority Corridor, Lorain Ave Priority Corridor, and multiple Red Line stations. Similarly, the addition of Noble Rd to the Warrensville Center Rd corridor creates a new frequent connection to Euclid Ave.

Tiered priorities create consistency

The Strategic Plan, in association with pillar studies, identifies a framework for planning to the year 2030. The System Redesign study offered several service concepts, notably a Current Funding Concept and an Expanded Funding Concept. RTA is planning on implementing items from the Current Funding Concept quickly, such as increased frequency of service on Priority Corridors such as Detroit Ave, Lorain Ave, Kinsman Rd, and E. 105th St. A tiered approach to Priority Corridor updates follows a framework of near-term focus and long-term focus.

Several Priority Corridors remain unchanged

While adjustments will be valuable as described above, many of the Priority Corridors from the past Strategic Plan should remain. There are a handful of roads that are densely populated and connect many places that remain valuable transit corridors for decades. Examples of largely unchanged Priority Corridor designations include Detroit Ave.

From Past To Future

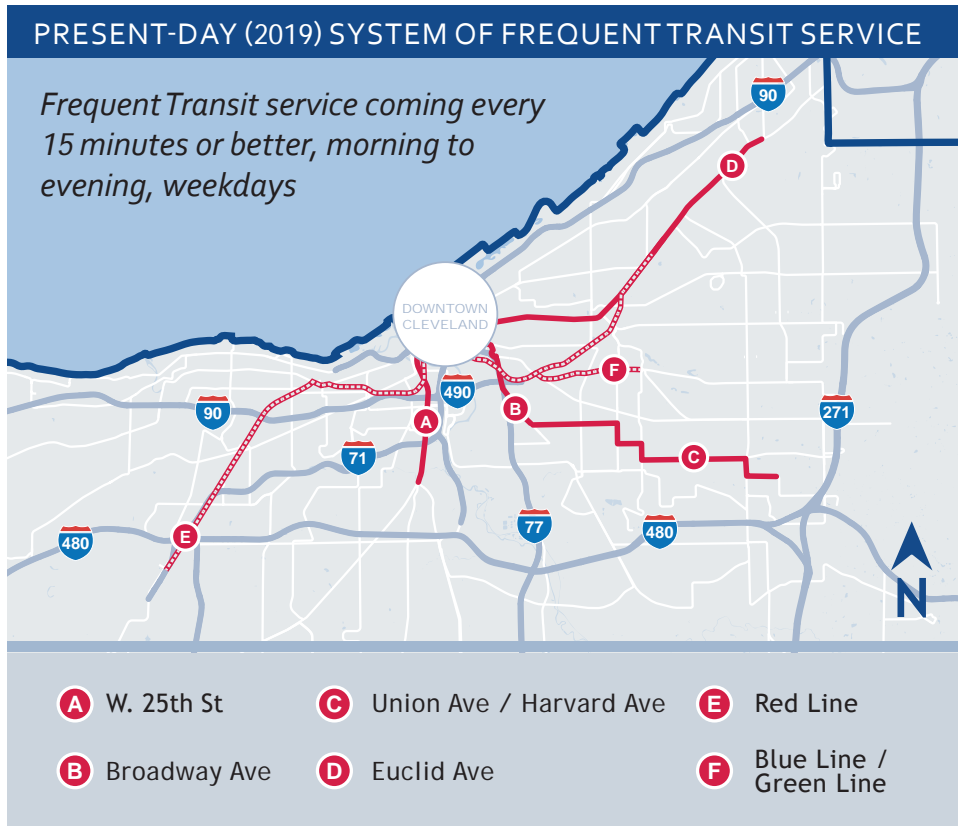
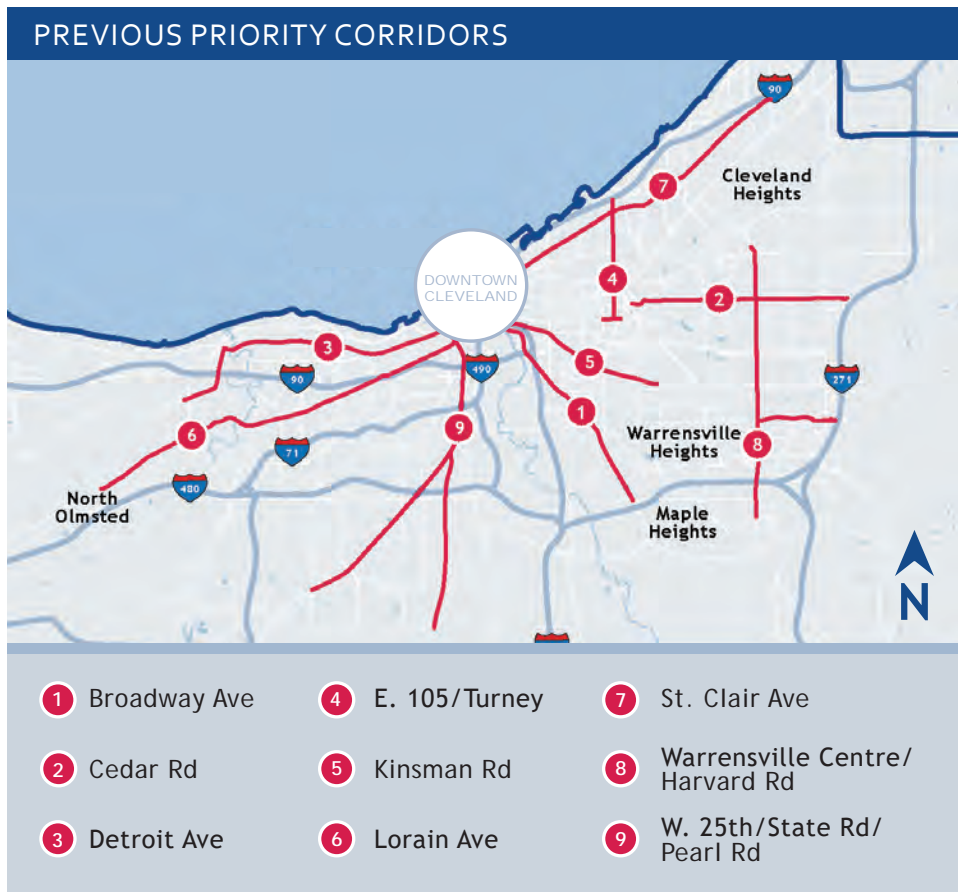
The Priority Corridor updates resulted from an assessment of previous Priority Corridor designations as well as new data from recent studies. Updated Priority Corridors are recommended as displayed visually in the following maps.

PREVIOUS PRIORITY CORRIDORS

As described and displayed in the Existing Conditions and Appendix, previously nine Priority Corridors provided a focus for transit-oriented development and infrastructure enhancements.

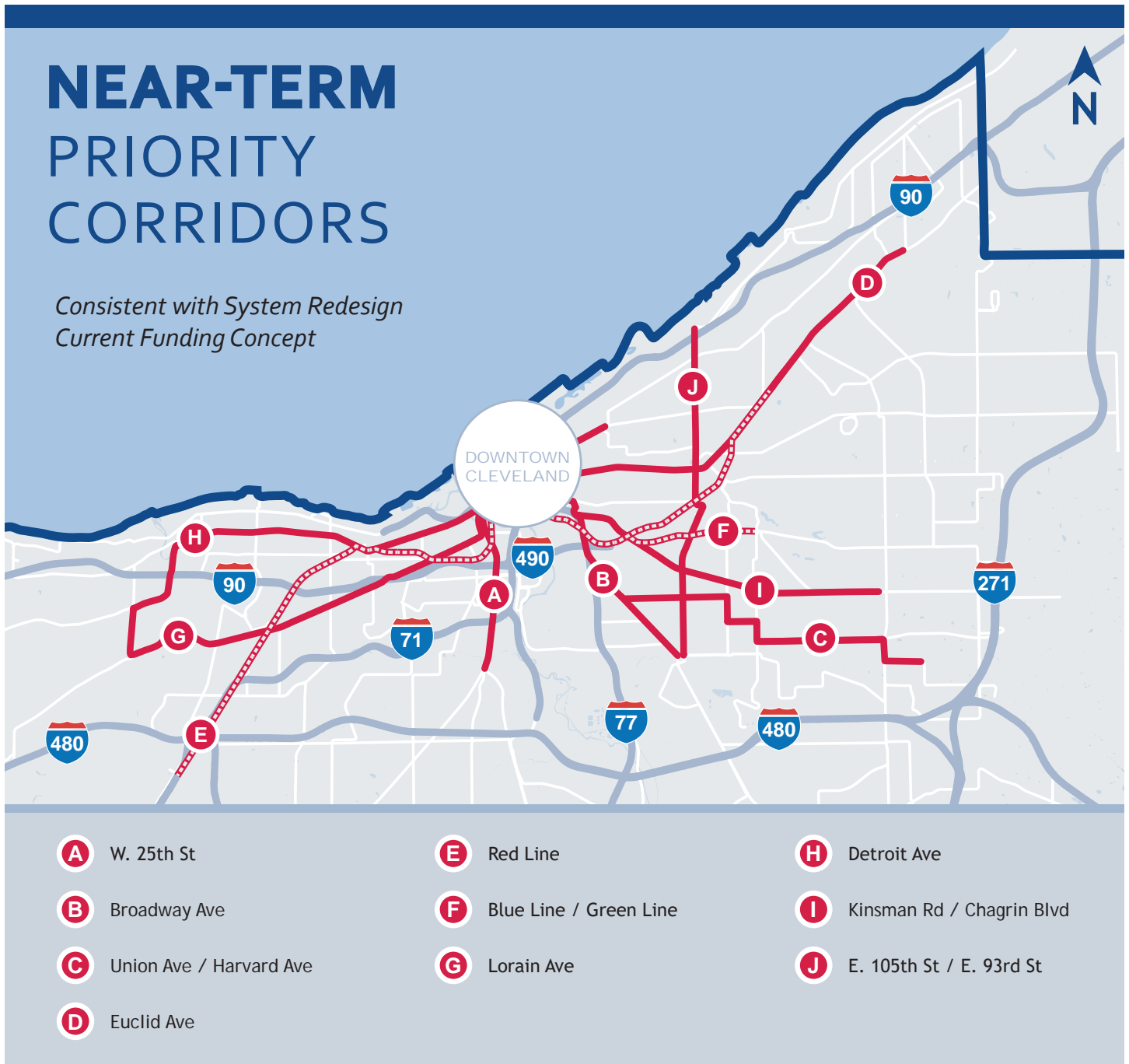
However, as displayed on the right, the Priority Corridor designation does not equate with all day frequent service. It is important to tie the two concepts together - focused corridor enhancements alongside frequent transit service - in order to leverage the most value out of limited resources.

Recent studies and analyses point to a framework for connecting frequent service with corridor infrastructure enhancements. The System Redesign study examined a Current Funding Concept and an Expanded Funding Concept for their impacts and outcomes. These conceptual networks are shown in the Appendix. The redesign concepts highlight the balance between routes that cover the entire county and those that focus on dense corridors with frequent service. Priority Corridors maintain a high propensity for transit with land uses and population that support transit-oriented development.



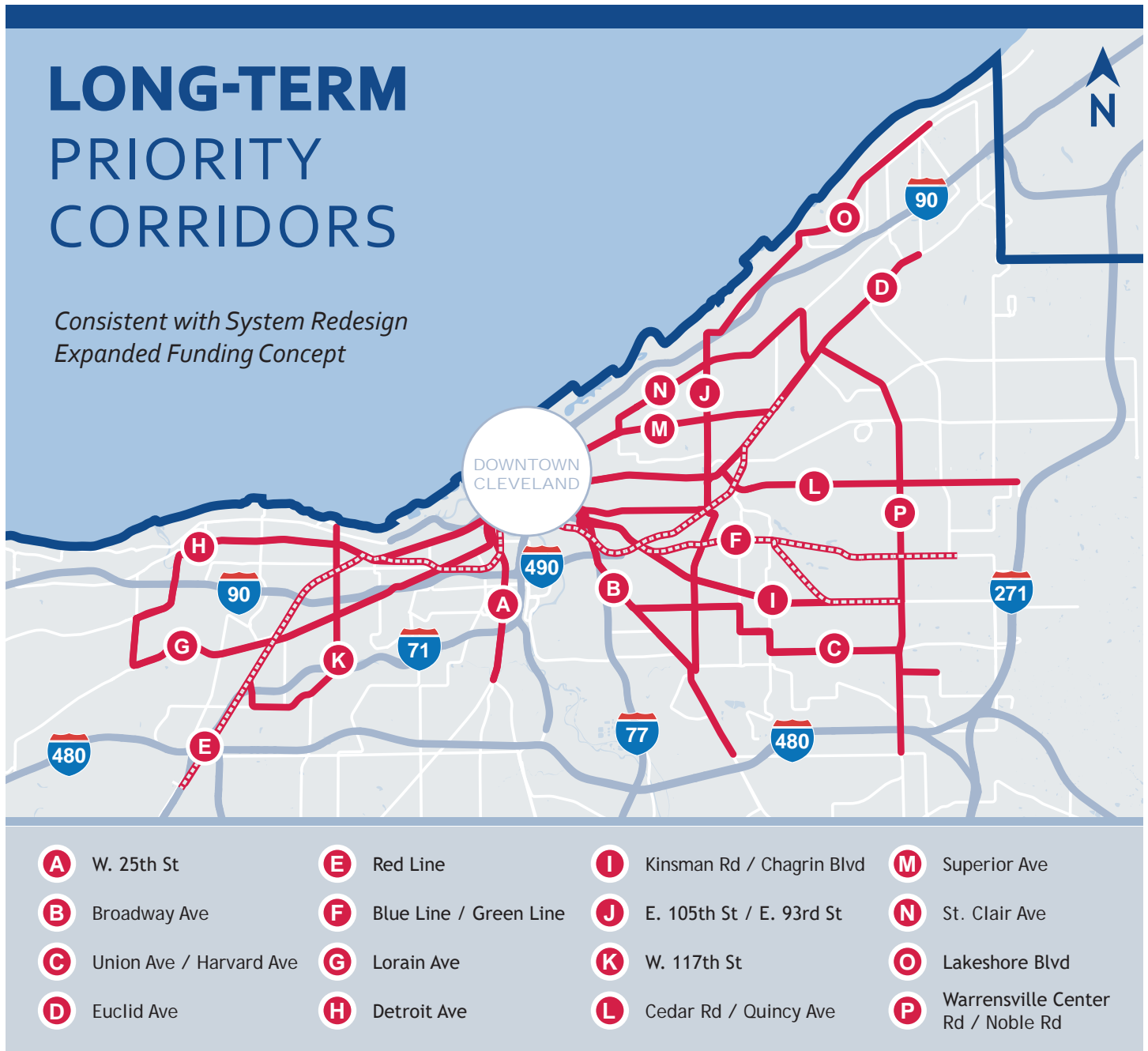
This is an opportune moment to marry the System Redesign pillar study’s concept of the Frequent Grid with RTA staff’s Priority Corridor designation. The study highlights, “Whenever frequent (red) lines cross, you can transfer with short waits to go any direction. That’s how this concept speeds up trips to

many destinations.” The pillar study’s Current Funding Concept identifies a frequent network of bus routes that forms a basis for Near-Term Priority Corridors. A map highlighting Near-Term Priority Corridors is shown below.



The pillar study's Expanded Funding Concept identifies a frequent network of transit routes that forms a basis for Long-Term Priority Corridors.

A map highlighting Long-Term Priority Corridors is shown below.



Public and stakeholder engagement across the Strategic Plan and associated pillar studies have highlighted a strong preference for investing in State of Good Repair and maintenance of existing rail assets. The Red Line, Blue Line, and Green Line are highlighted for perpetual investment on maps displaying Priority Corridor updates since they are highly valued by the community. The Rail Car pillar study highlighted the types of investment these corridors require, with support from the RTA Board and community leaders. Similarly, the HealthLine was highlighted in the Economic Impact pillar study for its investment and partnership success, and is considered a key asset to maintain.

Engagement across the System Redesign study revealed preferences for a frequent network of routes that forms the core of a countywide system that deploys limited resources effectively. These Priority Corridor updates are in line with the studies, analyses, and engagement to date. These concepts should be considered flexible as additional evaluation of service and resources provide new opportunities. Previous Priority Corridor designations from the last Strategic Plan evolved over the years to respond to changing conditions. In a similar fashion, the new Priority Corridor updates provide a framework for the future that will evolve over time.

Updated Priority Corridor Data

This section highlights data regarding the nature of these updated Priority Corridors.

Overall Employment Information

Corridor/Area	Businesses	Employees	Residential Population	Employee/ Residential Population Ratio (per 100 Residents)
Cuyahoga County	45,333	830,337	1,246,484	67
Near-Term Priority Corridors:				
Broadway Ave	492	6,986	13,390	52
Detroit Ave	1,585	17,404	37,144	47
E. 105th St / E. 93rd St	423	22,975	17,404	132
Kinsman Rd / Chagrin Blvd	698	17,847	21,467	83
Lorain Ave	1,227	14,097	31,456	45
St. Clair Ave	3,002	66,399	25,016	265
Superior Ave	3,170	74,113	23,934	310
Union Ave / Harvard Ave	400	6,359	20,581	31
W. 25th St	673	13,662	12,910	106
Long-Term Priority Corridors:				
Cedar Rd / Quincy Ave	1,073	27,164	32,161	84
Lakeshore Blvd	330	3,681	16,790	22
W. 117th St	576	8,475	20,290	42
Warrensville Center Rd / Noble Rd	978	21,663	24,828	87

Data source: US Census, ESRI



The table below displays commuter information for Cuyahoga County as a whole and each of the individual updated Priority Corridors.

Commuter Information		
Corridor/Area	Percent Drive Alone	Percent Take Public Transit
Cuyahoga County	80%	5%
Near-Term Priority Corridors:		
Broadway Ave	80%	6%
Detroit Ave	73%	8%
E. 105th St / E. 93rd St	72%	15%
Kinsman Rd / Chagrin Blvd	71%	15%
Lorain Ave	74%	7%
St. Clair Ave	60%	13%
Superior Ave	59%	14%
Union Ave / Harvard Ave	70%	14%
W. 25th St	65%	11%
Long-Term Priority Corridors:		
Cedar Rd / Quincy Ave	72%	6%
Lakeshore Blvd	75%	9%
W. 117th St	72%	9%
Warrensville Center Rd / Noble Rd	76%	7%

The data for each corridor highlight that a greater percentage of existing commuters take transit on these corridors when compared to countywide transit usage.

The following pages display individual data for each corridor.

NEAR-TERM PRIORITY CORRIDORS BROADWAY AVE

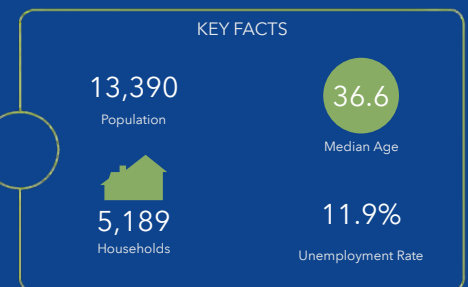
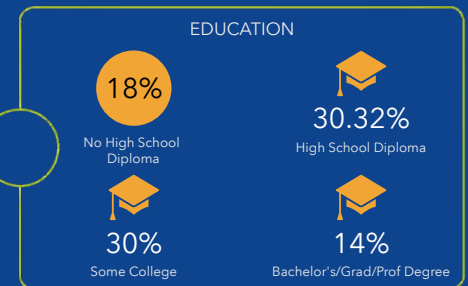
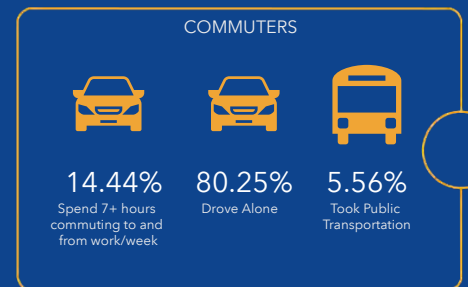
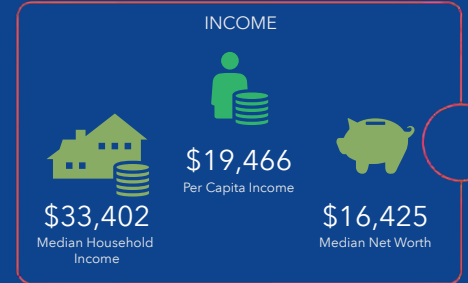


Broadway Ave is a primarily residential and industrial corridor that provides key connections downtown and at the Tri C-Campus District Rapid station, Union Ave, and E. 93rd St. In 2019, the corridor had approximately double the unemployment rate compared to the county average. Levels of income and educational attainment are lower along the Broadway Ave corridor compared to county averages. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

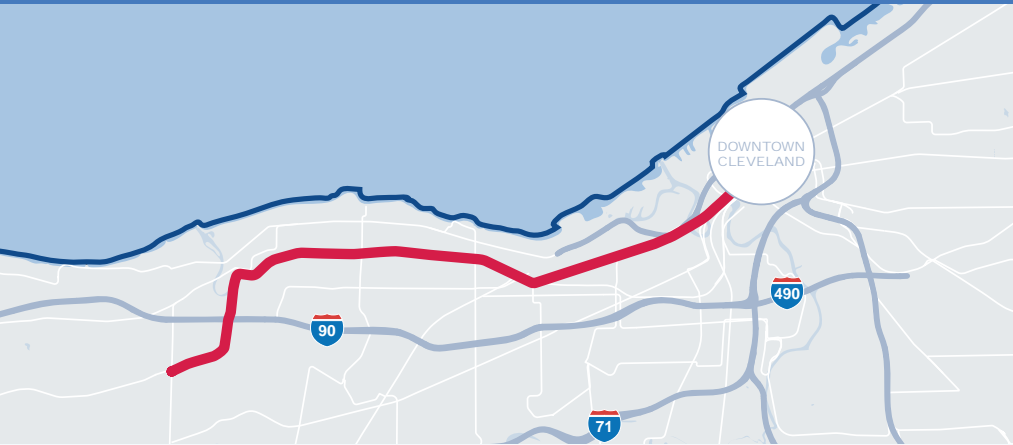
LAND USE	
Land Use	Percent Area
RESIDENTIAL	38%
INDUSTRY	15%
TRANSPORTATION	14%
RETAIL	11%
Other (<5% Each)	22%

KEY CONNECTIONS	
Broadway Ave	High Frequency Intersection
Broadway Ave & E. 9th St	N/A
To Broadway Ave & E. 34th St	Red Line/Blue Line/Green Line at Tri C-Campus District
To Broadway Ave & Union Ave	Union Ave/Harvard Ave Priority Corridor
To Broadway Ave & E. 93rd St/Turney Rd/Ella Ave	E. 105th St / E. 93rd St Priority Corridor
To Turney Rd & Granger Rd	N/A

EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS DETROIT AVE



Detroit Ave is a primarily residential and retail corridor that provides key connections downtown and at W. 25th St, Red Line, W. 117th St, and Lorain Ave. In 2019, the corridor had lower unemployment, had higher educational attainment, and was younger compared to county averages. More people take transit along the corridor and fewer people drive alone to work compared to county averages. Prioritized transit service in this corridor supports a transit oriented population and enhances a frequent transit network.

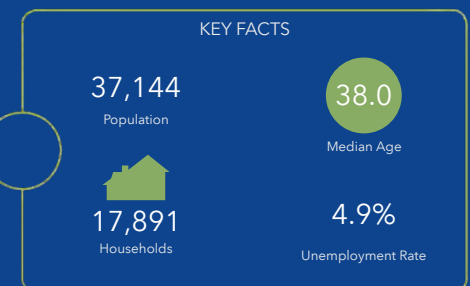
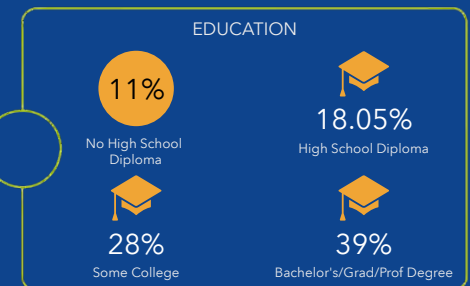
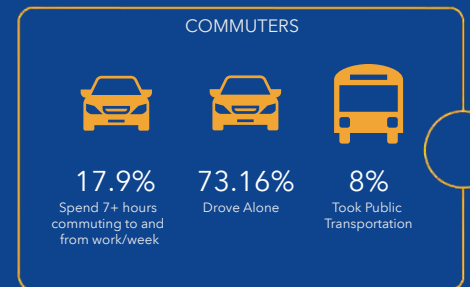
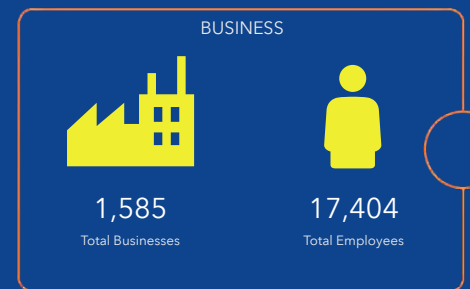
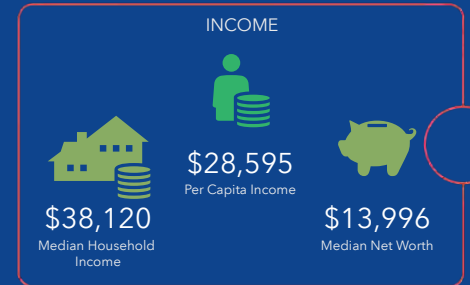
LAND USE

Land Use	Percent Area
RESIDENTIAL	47%
RETAIL	15%
APARTMENT	10%
PASSIVE GREEN SPACE	5%
Other (<5% Each)	23%

KEY CONNECTIONS

Detroit Ave	High Frequency Intersection
Detroit Ave & W 25th St	W 25th St Priority Corridor
To Detroit Ave & West Blvd	Red Line at West Blvd-Cudell
To Detroit Ave & W. 117th St	W 117th St Priority Corridor
To Centre Ridge Rd & W 210th St	Lorain Ave Priority Corridor

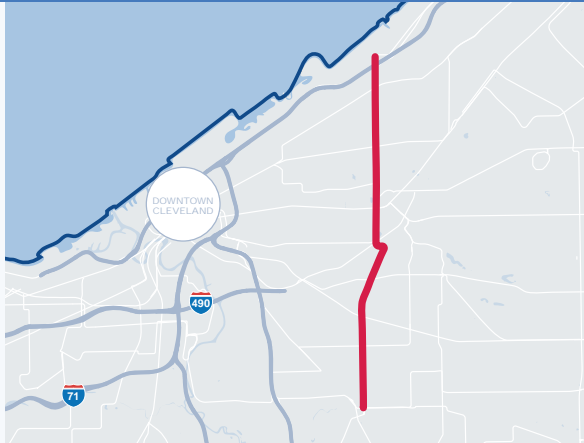
EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS

E. 105TH ST / E. 93RD ST

E. 105th St / E. 93rd St is a primarily residential, retail, and industrial corridor that provides key connections across the East Side.



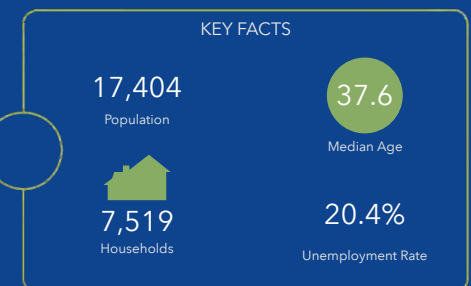
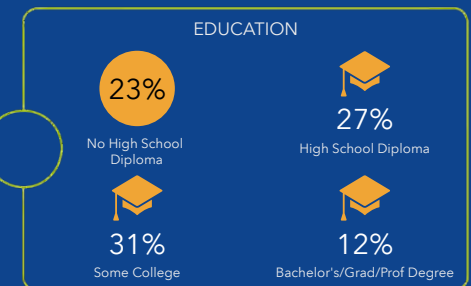
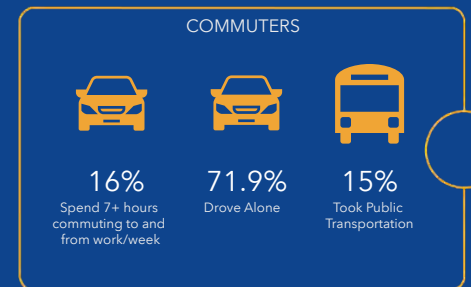
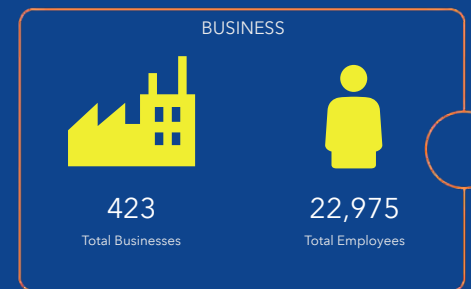
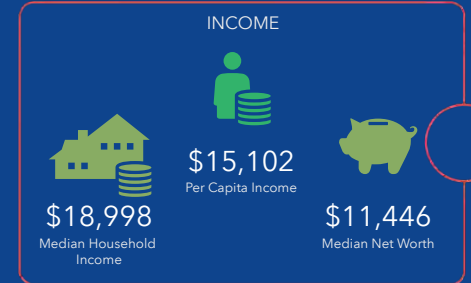
LAND USE

Land Use	Percent Area
RESIDENTIAL	42%
RETAIL	9%
INDUSTRY	8%
TRANSPORTATION	7%
ACTIVE GREEN SPACE	7%
APARTMENT	7%
LIGHT INDUSTRY	5%
OFFICE	5%
Other (<5% Each)	9%

KEY CONNECTIONS

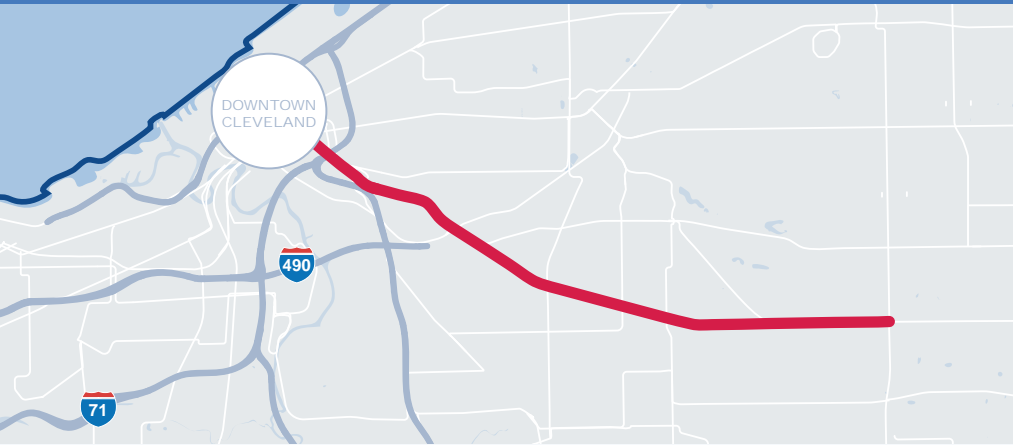
E. 105th St / E. 93rd St	High Frequency Intersection
E. 105th St & Lake Shore Blvd	Lakeshore Blvd Priority Corridor
To E. 105th St & St. Clair Ave	St. Clair Ave Priority Corridor
To E. 105th St & Superior Ave	Superior Ave Priority Corridor
To E. 105th St & Euclid Ave	Euclid Ave Priority Corridor
To E. 105th St & Quincy Ave	Red Line at E. 105th-Quincy And Cedar Rd / Quincy Ave Priority Corridor
To Quincy Ave & Woodhill Rd	N/A
To Woodhill Rd & Buckeye Rd	Blue Line/Green Line at Buckeye-Woodhill
To Woodhill Rd & E. 93rd St	N/A
To E. 93rd St & Kinsman Rd	Kinsman Rd / Chagrin Blvd Priority Corridor
To E. 93rd St & Union Ave	Union Ave/Harvard Ave Priority Corridor
To E. 93rd St & Broadway Ave	Broadway Ave Priority Corridor

EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS

KINSMAN RD / CHAGRIN BLVD



Kinsman Rd / Chagrin Blvd is a primarily residential, retail, and industrial corridor that provides key connections downtown and at E. 93rd St, Blue Line, and Warrensville Center Rd. In 2019, the corridor had more than double the unemployment rate compared to the county average. Levels of income and educational attainment are lower along the corridor compared to county averages. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

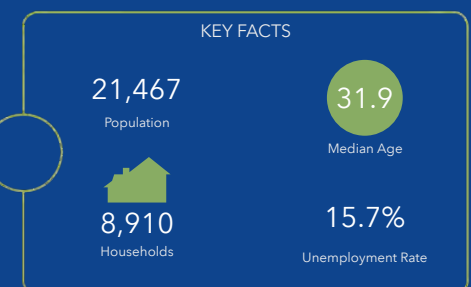
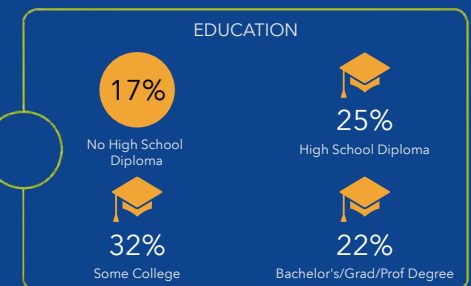
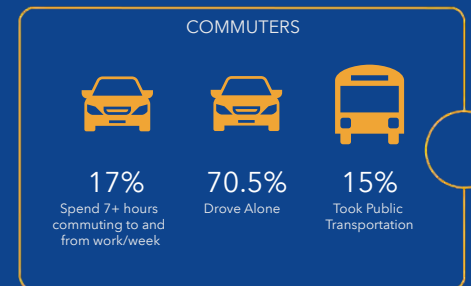
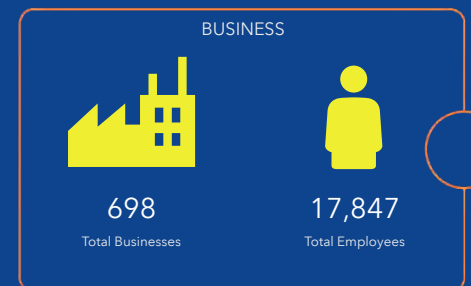
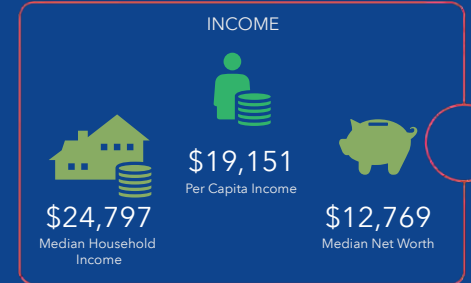
LAND USE

Land Use	Percent Area
RESIDENTIAL	40%
APARTMENT	11%
RETAIL	10%
LIGHT INDUSTRY	8%
TRANSPORTATION	8%
ACTIVE GREEN SPACE	6%
INDUSTRY	5%
Other (<5% Each)	13%

KEY CONNECTIONS

Kinsman Rd / Chagrin Blvd	High Frequency Intersection
Woodland Ave & E. 30th St	N/A
To Woodland Ave & E. 55th St	N/A
To Kinsman Rd & E. 93rd St	E. 105th St / E. 93rd St Priority Corridor
To Kinsman Rd & Chagrin Blvd	N/A
To Chagrin Blvd & Warrensville Center Rd	Warrensville Center Rd / Noble Rd Priority Corridor And Blue Line at Warrensville

EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS

LORAIN AVE



Lorain Ave is a primarily residential and retail corridor that provides key connections downtown and at W. 25th St, W. 117th St, Detroit Ave, and multiple Red Line Rapid stations. Levels of income and educational attainment are lower along the corridor compared to county averages. More people take transit along the corridor and fewer people drive alone to work compared to county averages. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

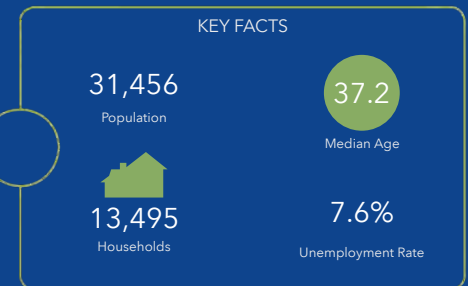
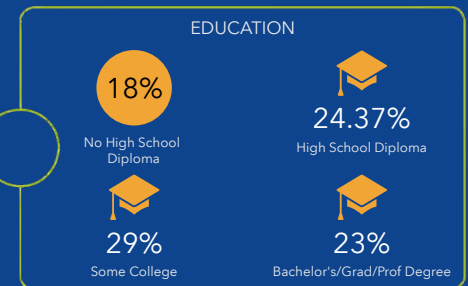
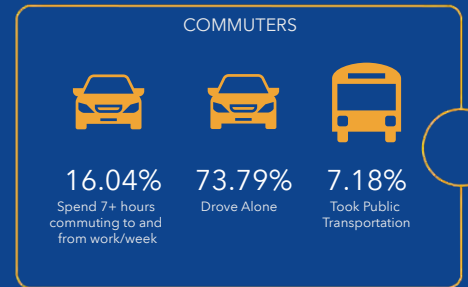
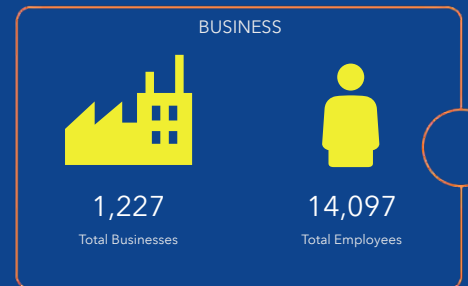
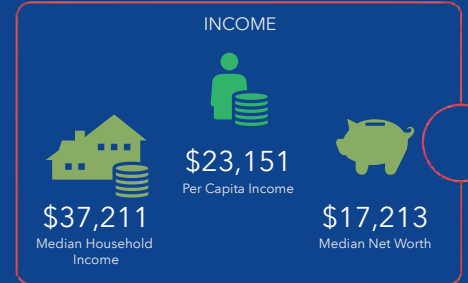
LAND USE

Land Use	Percent Area
RESIDENTIAL	54%
RETAIL	16%
APARTMENT	7%
TRANSPORTATION	6%
PASSIVE GREEN SPACE	6%
Other (<5% Each)	12%

KEY CONNECTIONS

Lorain Ave	High Frequency Intersection
Lorain Ave & W 25th St	W 25th St Priority Corridor And Red Line at W 25th - Ohio City
To Lorain Ave & W 65th St	Red Line at W 65th - Loraine
To Lorain Ave & W 117th St	W 117th St Priority Corridor
To Lorain Ave & W 140th St	Red Line at West Park
To Lorain Ave & W 210th St	N/A
To W 210th St & Centre Ridge Rd	Detroit Ave Priority Corridor

EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS

ST. CLAIR AVE



St. Clair Ave Priority Corridor provides key connections downtown and to the East Side. Data is highlighted for two segments - west and east of E. 55th St - in order to provide more detailed consideration downtown of St. Clair versus Superior Ave for increased transit service. The System Redesign pillar study identified the core downtown corridor as Superior Ave. However, stakeholder agencies have plans for a road diet and median bicycle lanes on Superior Ave, an improvement that may preclude the frequency of buses described in the System Redesign study. If stakeholders prioritize bicycle travel over bus travel on Superior Avenue,, stakeholders and RTA should further prioritize roadway operations on St. Clair downtown for buses.

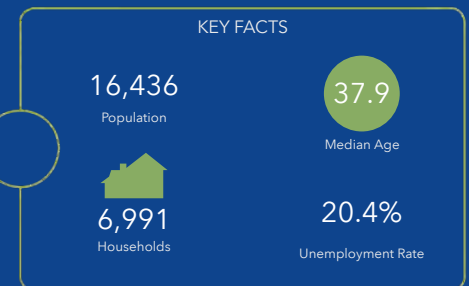
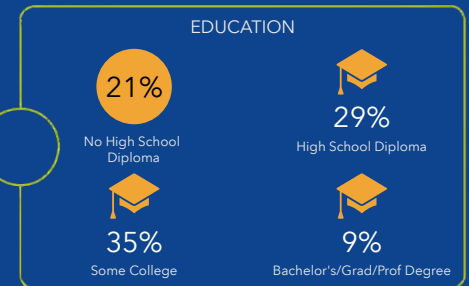
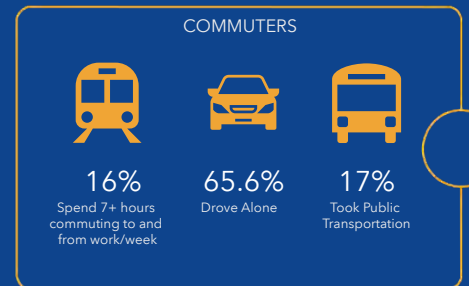
LAND USE

East of E. 55th St	Percent Area
RESIDENTIAL	48%
INDUSTRY	16%
RETAIL	11%
Downtown to E. 55th St	
INDUSTRY	21%
RETAIL	18%
LIGHT INDUSTRY	15%
OFFICE	14%

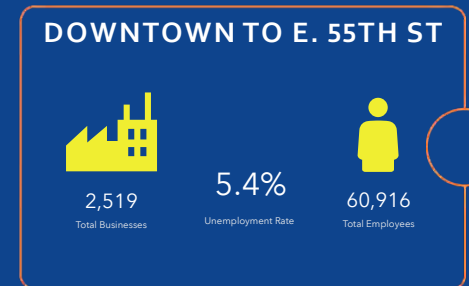
KEY CONNECTIONS

St. Clair Ave	High Frequency Intersection
St. Clair Ave & E. 55th St	Superior Ave Priority Corridor
To St. Clair Ave & E. 105th St	E. 105th St / E. 93rd St Priority Corridor
To St. Clair Ave & E. 152nd St	N/A
To E. 152nd St & Noble Rd	N/A
To Noble Rd & Euclid Ave	Euclid Ave Priority Corridor And Warrensville Center Rd / Noble Rd Priority Corridor

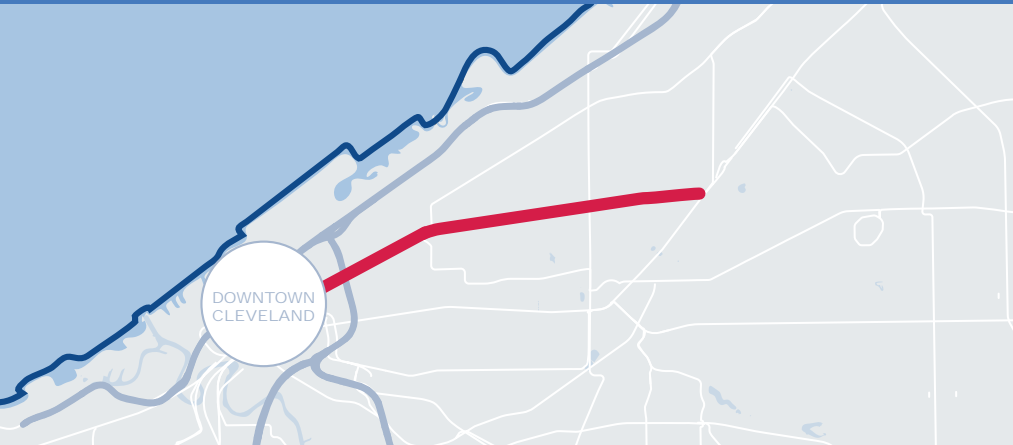
EAST OF E. 55TH ST



DOWNTOWN TO E. 55TH ST



NEAR-TERM PRIORITY CORRIDORS SUPERIOR AVE



Superior Ave Priority Corridor provides key connections downtown and to the East Side. Data is highlighted for two segments - west and east of E. 55th St - in order to provide more detailed consideration downtown of St. Clair versus Superior Ave for increased transit service. The System Redesign pillar study identified the core downtown corridor as Superior Ave. Superior Avenue carries a large quantity of frequent bus service. Downtown Superior Avenue is also the planned location of median bicycle lanes known as the Midway. If Superior Avenue is to be prioritized as a premier transit corridor with bus only lanes along its length, careful consideration will need to be given to the extension of bike facilities along the route.

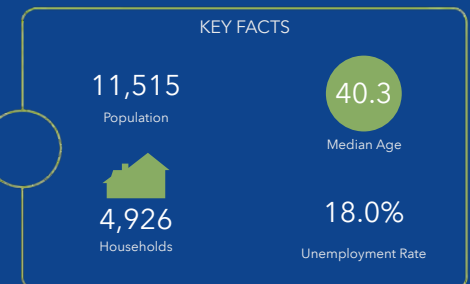
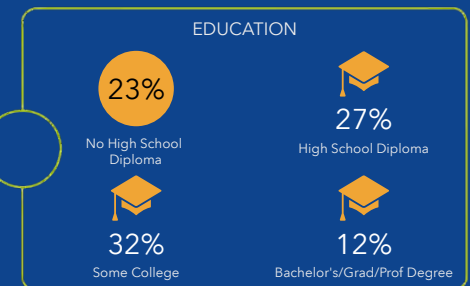
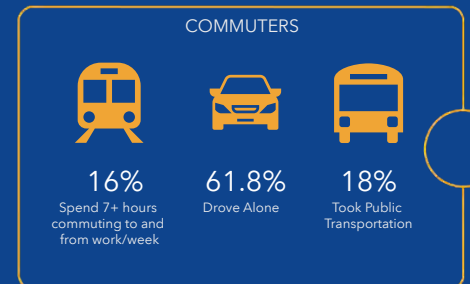
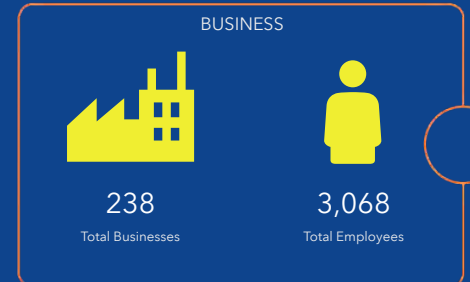
LAND USE

East of E. 55th St	Percent Area
RESIDENTIAL	58%
RETAIL	13%
APARTMENT	11%
Downtown to E. 55th St	
RETAIL	23%
OFFICE	17%
RESIDENTIAL	16%
INDUSTRY	12%

KEY CONNECTIONS

Superior Ave	High Frequency Intersection
Superior Ave & E. 55th St	St. Clair Priority Corridor
To Superior Ave & E. 105th St	E. 105th St / E. 93rd St Priority Corridor
	Red Line at Superior
To Superior Ave & Euclid Ave	And Euclid Ave Priority Corridor

EAST OF E. 55TH ST

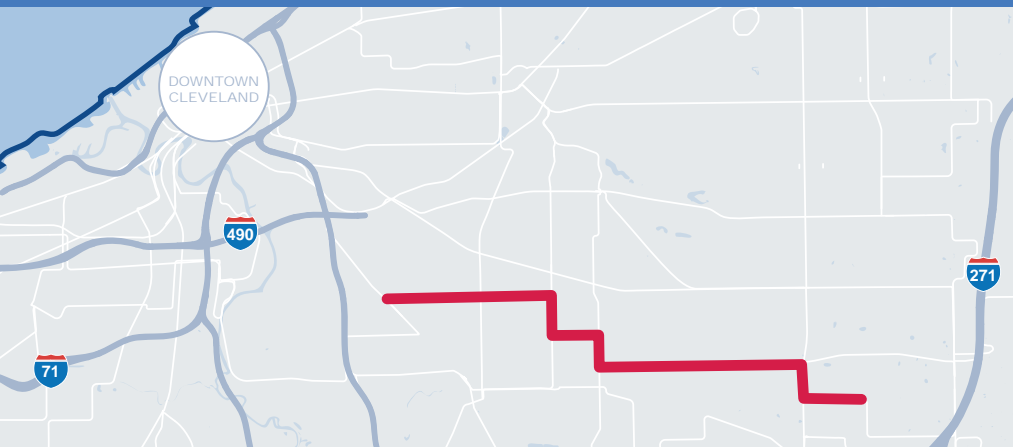


DOWNTOWN TO E. 55TH ST



NEAR-TERM PRIORITY CORRIDORS

UNION AVE / HARVARD AVE



Union Ave / Harvard Ave is a primarily residential and retail corridor that provides key connections at Broadway Ave, E. 93rd St, and Warrensville Center Rd. In 2019, the corridor had more than double the unemployment rate compared to the county average. Levels of income and educational attainment are lower along the corridor compared to county averages. The percentage of people who take transit is almost three times greater than the average countywide. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

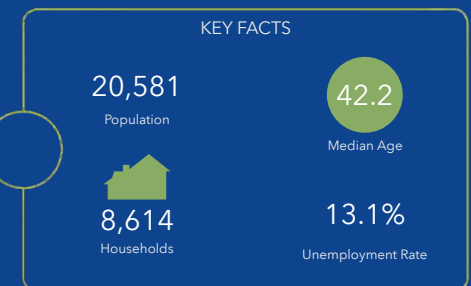
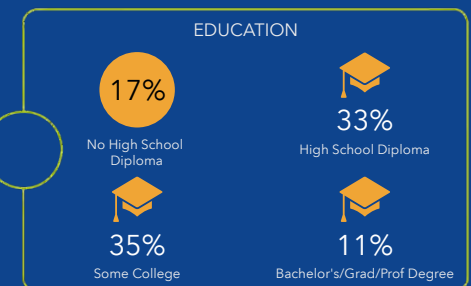
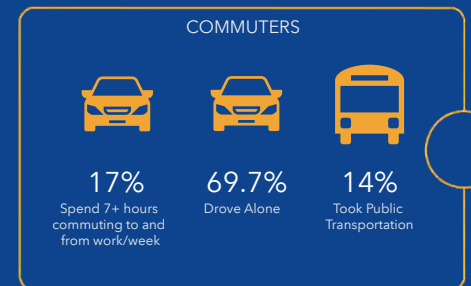
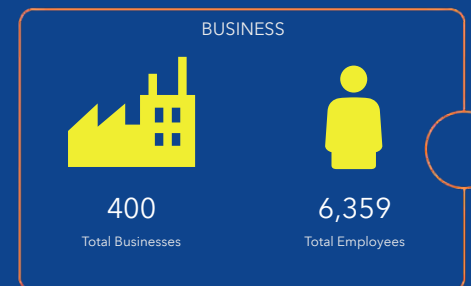
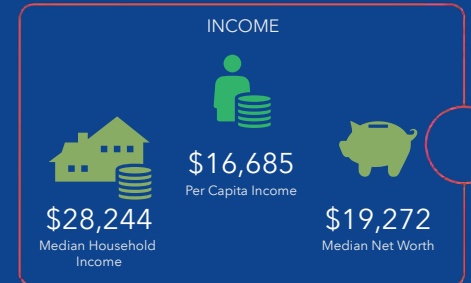
LAND USE

Land Use	Percent Area
RESIDENTIAL	70%
RETAIL	9%
SCHOOL	5%
Other (<5% Each)	16%

KEY CONNECTIONS

Union Ave / Harvard Ave	High Frequency Intersection
Union Ave & Broadway Ave	Broadway Ave Priority Corridor
To Union Ave & E. 93rd St	E. 105th St / E. 93rd St Priority Corridor
To Union Ave & E. 116th St	N/A
To E. 116th St & Corlett Ave	N/A
To Corlett Ave & E 131st St	N/A
To E. 131st St & Harvard Ave	N/A
To Harvard Ave & Warrensville Centre Rd	Warrensville Center Rd / Noble Rd Priority Corridor

EMPLOYMENT



NEAR-TERM PRIORITY CORRIDORS W. 25TH ST



W. 25th St is a primarily residential, retail, and industrial corridor that provides key connections downtown and at Detroit Ave, Lorain Ave, and the Red Line. In 2019, the corridor had approximately double the unemployment rate compared to the county average. Levels of income and educational attainment are lower along the corridor compared to county averages. The percentage of people who take transit is double the percentage countywide. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

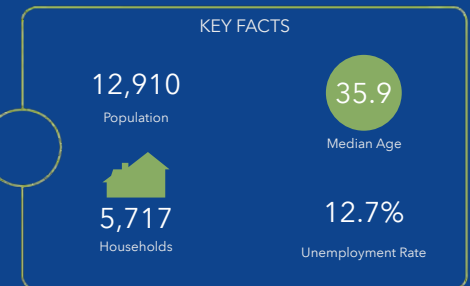
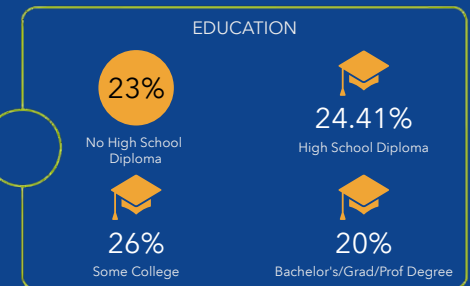
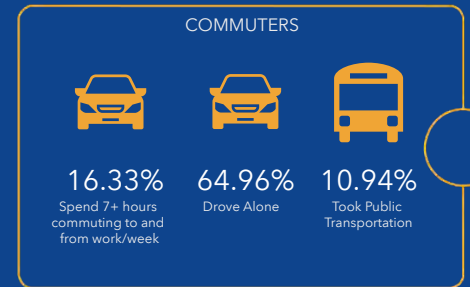
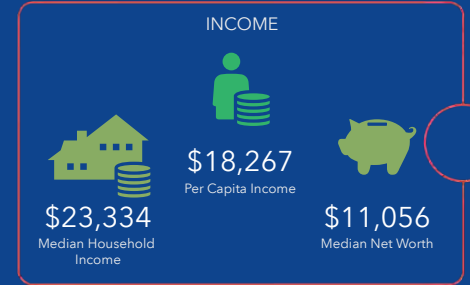
LAND USE

Land Use	Percent Area
RESIDENTIAL	32%
RETAIL	15%
INDUSTRY	12%
TRANSPORTATION	10%
APARTMENT	8%
OFFICE	6%
LIGHT INDUSTRY	5%
PASSIVE GREEN SPACE	5%
Other (<5% Each)	7%

KEY CONNECTIONS

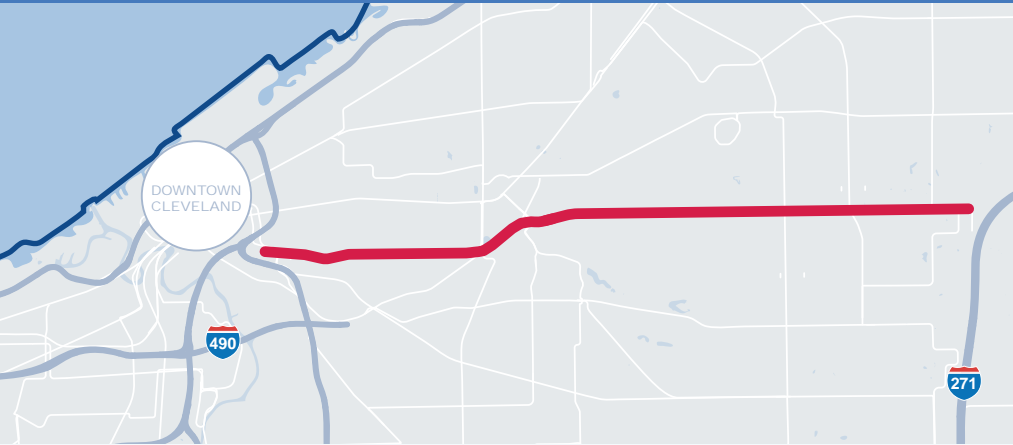
W. 25th St	High Frequency Intersection
W. 25th St & Detroit Ave	Detroit Ave Priority Corridor
To W. 25th St & Lorain Ave	Lorain Ave Priority Corridor And Red Line at W 25th - Ohio City
To W. 25th St & Pearl Rd	N/A
To Pearl Rd & Broadview Rd	N/A

EMPLOYMENT



LONG-TERM PRIORITY CORRIDORS

CEDAR RD / QUINCY AVE



Cedar Rd / Quincy Ave is a primarily residential and retail corridor that provides key connections downtown, at multiple Red Line Rapid stations, and at Warrensville Center Rd. Educational attainment is lower and unemployment is higher along this corridor compared to county averages. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

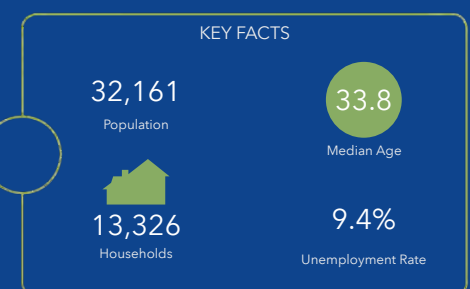
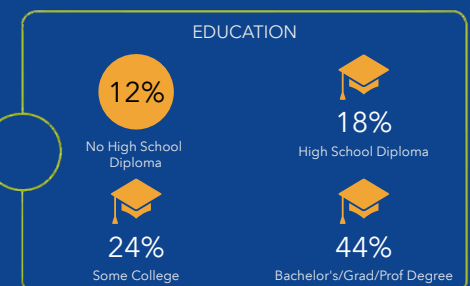
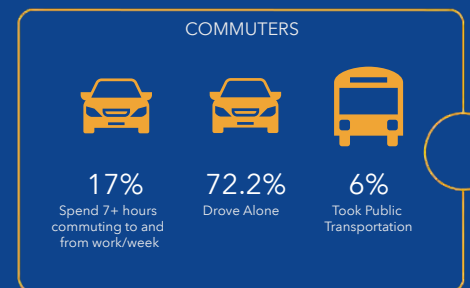
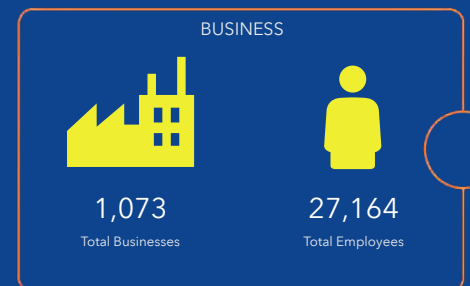
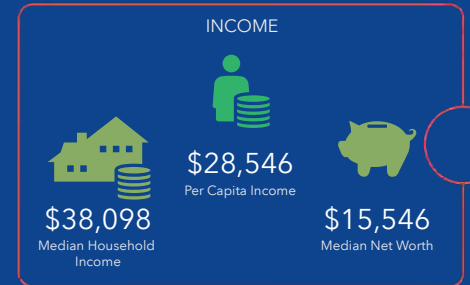
LAND USE

Land Use	Percent Area
RESIDENTIAL	49%
APARTMENT	13%
RETAIL	13%
PASSIVE GREEN SPACE	5%
Other (<5% Each)	20%

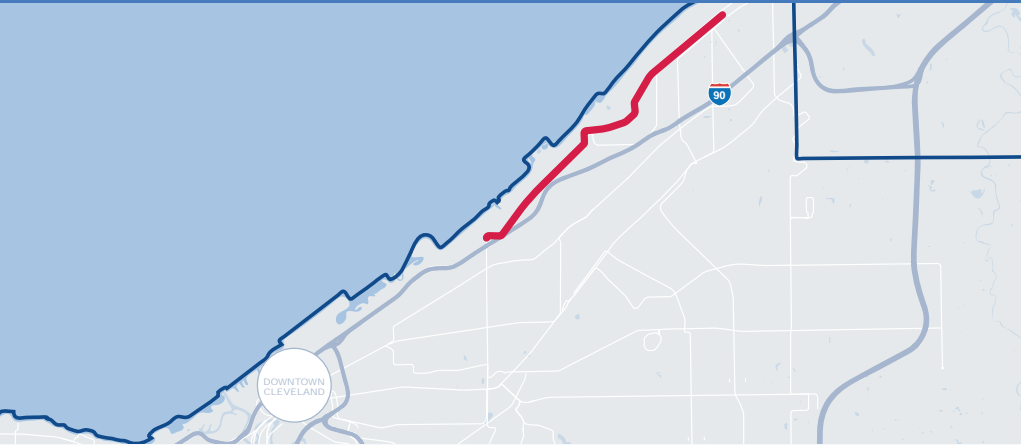
KEY CONNECTIONS

Cedar Rd / Quincy Ave	High Frequency Intersection
Quincy Ave & E. 40th St	N/A
To Quincy Ave & E. 105th St	Red Line at E. 105th-Quincy
To E. 105th St & Cedar Rd	N/A
To Cedar Rd & Red Line	Red Line at Cedar-University
To Cedar Rd & Warrensville Center Rd	Warrensville Center Rd / Noble Rd Priority Corridor
To Cedar Rd & Richmond Rd	N/A

EMPLOYMENT



LONG-TERM PRIORITY CORRIDORS LAKESHORE BLVD



Lakeshore Blvd is a primarily residential and retail corridor with significant green space that connects to E. 105th St. Unemployment is higher, income is lower, and more people take transit along the corridor compared to county averages. Prioritized transit service in this corridor supports a transit oriented population and enhances a frequent transit network.

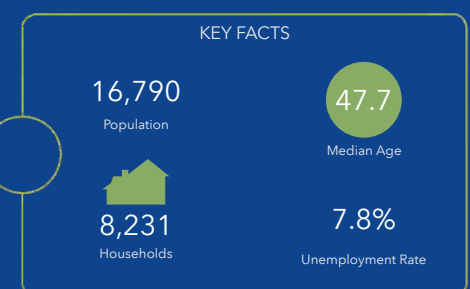
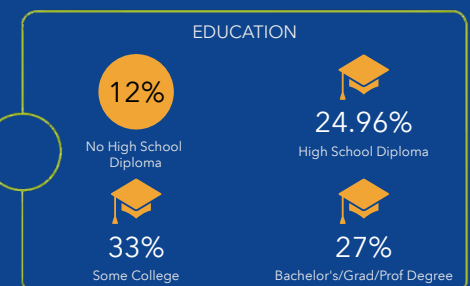
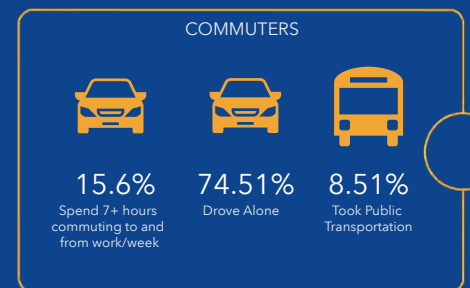
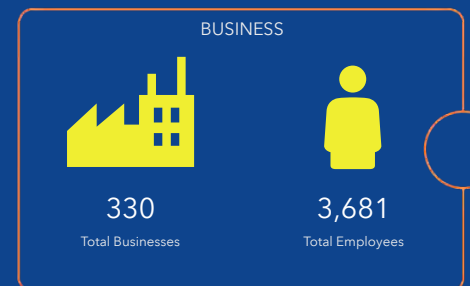
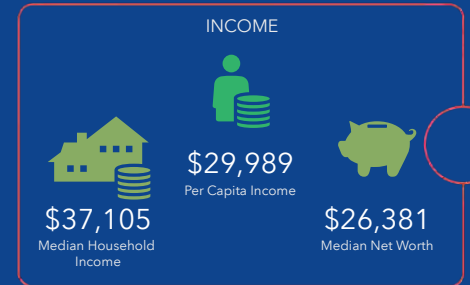
LAND USE

Land Use	Percent Area
RESIDENTIAL	64%
ACTIVE GREEN SPACE	8%
RETAIL	7%
APARTMENT	6%
UTILITY	5%
Other (<5% Each)	11%

KEY CONNECTIONS

Lakeshore Blvd	High Frequency Intersection
Lakeshore Blvd & E. 105th St	E. 105th St / E. 93rd St Priority Corridor
To Lakeshore Blvd & Babbitt Rd	N/A

EMPLOYMENT



LONG-TERM PRIORITY CORRIDORS W. 117TH ST



W. 117th St is a primarily residential, retail, and industrial corridor that provides key connections at Detroit Ave, Lorain Ave, and multiple Red Line Rapid stations. Levels of income and educational attainment are lower along the corridor compared to county averages. More people take transit and fewer people drive alone to work compared to county averages. Prioritized transit service in this corridor supports equity and enhances a frequent transit network.

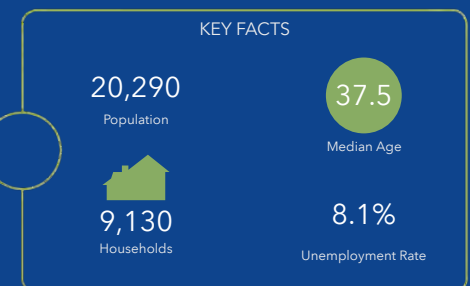
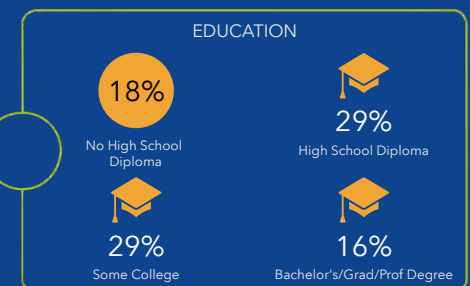
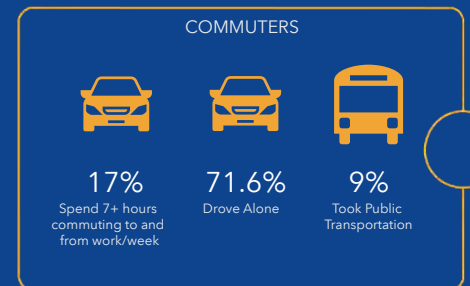
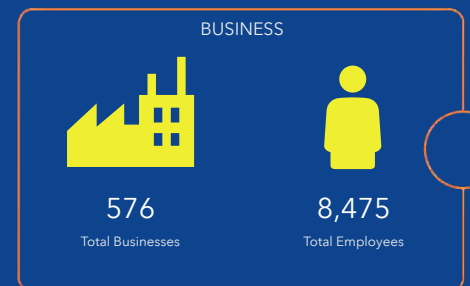
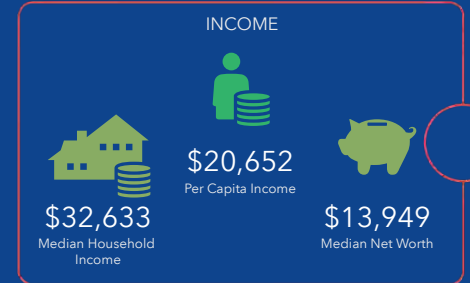
LAND USE

Land Use	Percent Area
RESIDENTIAL	50%
RETAIL	12%
INDUSTRY	12%
TRANSPORTATION	10%
APARTMENT	5%
Other (<5% Each)	10%

KEY CONNECTIONS

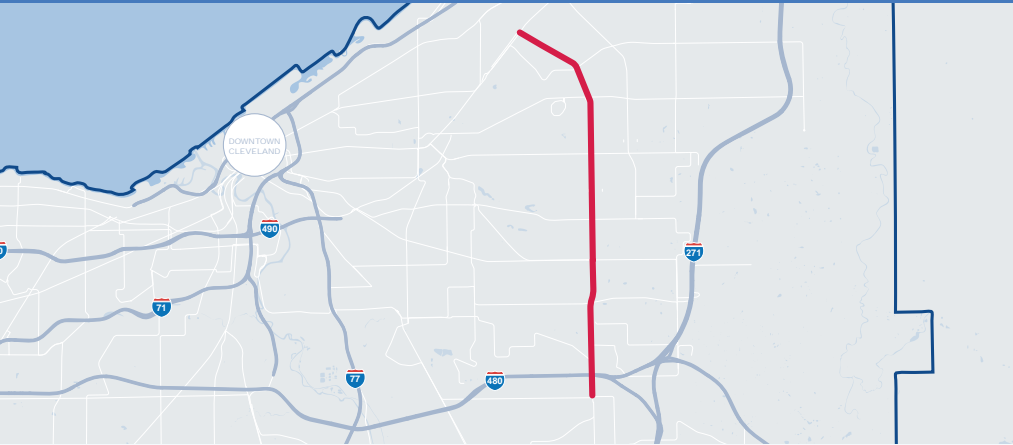
W. 117th St	High Frequency Intersection
W. 117th St & Clifton Blvd	N/A
To W. 117th St & Detroit Ave	Detroit Ave Priority Corridor
To W. 117th St & Madison Ave	Red Line at W. 117-Madison
To W. 117th St & Lorain Ave	Lorain Ave Priority Corridor
To W. 117th St & Bellaire Rd	N/A
To Bellaire Rd & Puritas Ave	N/A
To Puritas Ave & W. 154th St	Red Line at Puritas

EMPLOYMENT



LONG-TERM PRIORITY CORRIDORS

WARRENSVILLE CENTER RD / NOBLE RD



Warrensville Center Rd / Noble Rd is a primarily residential, office, and retail corridor that provides key connections to Euclid Ave, Cedar Rd, Kinsman Rd, Harvard Ave, and Blue Line and Green Line Rapid stations. Many socioeconomic measures are on par with county averages. However, more people take transit along the corridor and fewer people drive alone to work compared to county averages. Prioritized transit service in this corridor supports a transit oriented population and enhances a frequent transit network.

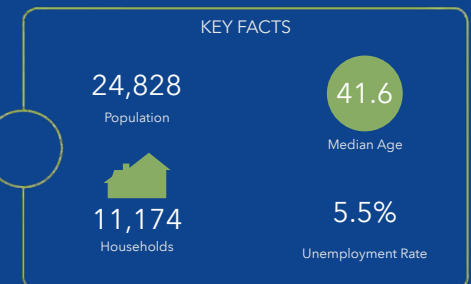
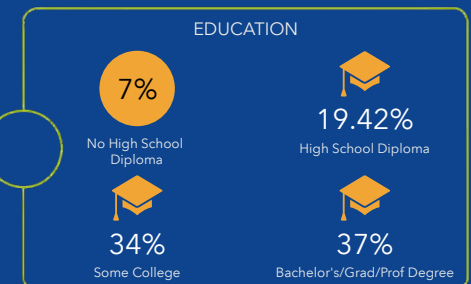
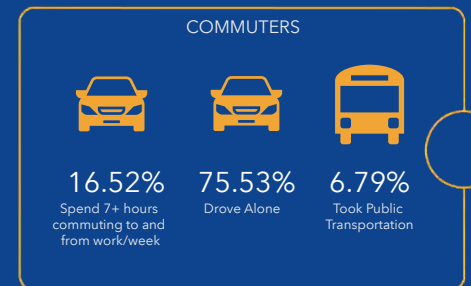
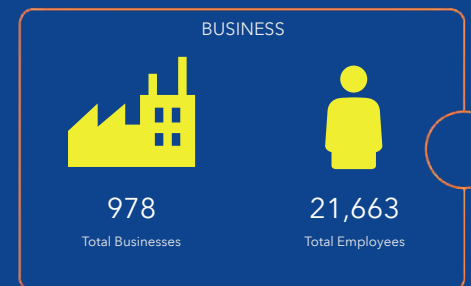
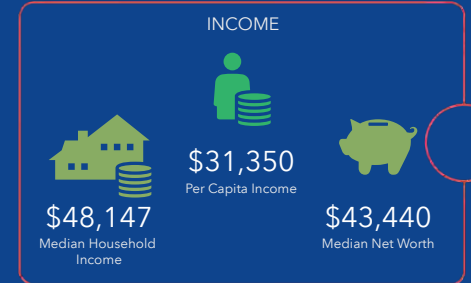
LAND USE

Land Use	Percent Area
RESIDENTIAL	40%
OFFICE	15%
RETAIL	13%
ACTIVE GREEN SPACE	9%
Other (<5% Each)	24%

KEY CONNECTIONS

Warrensville Center Rd / Noble Rd	High Frequency Intersection
Noble Rd & Euclid Ave	Euclid Ave Priority Corridor
To Noble Rd & Warrensville Center Rd	N/A
To Warrensville Center Rd & Cedar Rd	Cedar Rd / Quincy Ave Priority Corridor
To Warrensville Center Rd & Shaker Blvd	Green Line at Warrensville-Shaker Blue Line at Warrensville
To Warrensville Center Rd & Kinsman Rd	And Kinsman Rd / Chagrin Blvd Priority Corridor
To Warrensville Center Rd & Harvard Ave	Union Ave / Harvard Ave Priority Corridor
To Warrensville Center Rd & Libby Rd	N/A

EMPLOYMENT





Key Initiatives



The Strategic Plan culminates in seven key strategic initiatives that highlight prioritized recommendations and provide a framework for the future. The previous sections of this report identified 49 strategies that were proposed to the public for comment. Based on input from stakeholder and community engagement, as well as the analyses from the planning process and associated pillar studies, the seven key initiatives are:

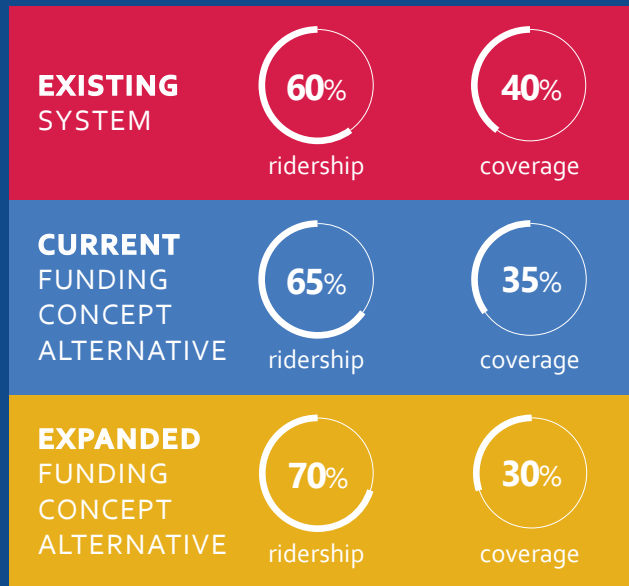
- **Improve Where and When Buses Travel**
- **Improve How Streets Function**
- **Improve How Customers Pay**

- **Improve Passenger Safety and Comfort**
- **Engage with Emerging Technology, Data, and New Mobility**
- **Address Funding Challenges**
- **Partner to Support Vibrant Communities and Access to Job Centers**

These seven initiatives provide a framework for the future to provide a guide for enhancing the customer experience and pursuing capital improvements through the year 2030.

IMPROVE WHERE AND WHEN BUSES TRAVEL

RTA'S SYSTEM REDESIGN



GOALS

- ✓ Access
- ✓ Customer Experience
- ✓ Economic Prosperity
- ✓ Equity

BACKGROUND

RTA completed a System Redesign study in 2019, one of several Pillar Studies that inform the Strategic Plan. With a focus on the next three years to 2023, the study sought input on two conceptual networks showing how the transit network could look if it were designed to focus slightly more on generating high ridership. Today, about 60% of RTA's service is where it would be if ridership were the only goal, while 40% of the service is focused on extending coverage to more people across the region. Alternative scenarios were presented for illustrative purposes, with the Current Funding Concept and Expanded Funding Concept further examined for their impacts and outcomes:

- The Current Funding Concept showed how RTA's network could look if it were designed to focus slightly more on generating high ridership, within the same funding budget (65% ridership, 35% coverage).
- The Expanded Funding Concept showed how the network could look if about 25% more resources



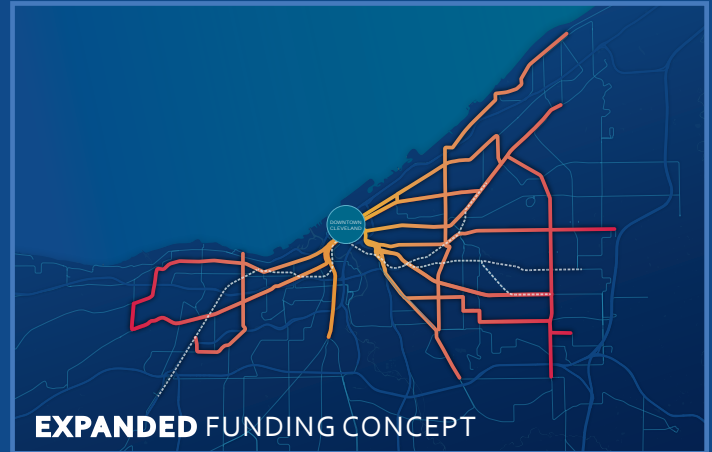
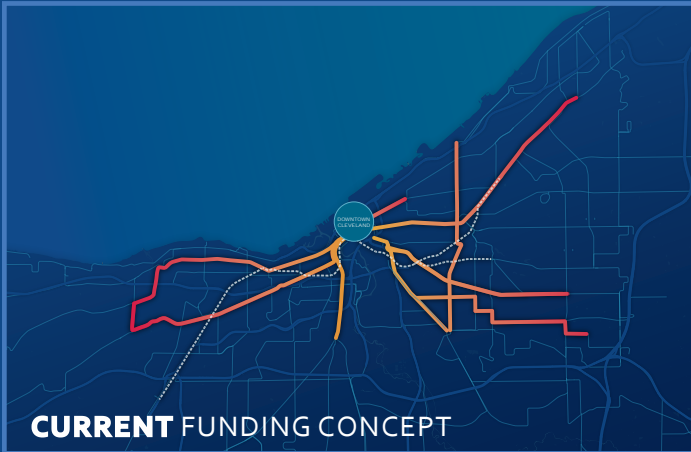
more
availability



increased
connectivity



higher
frequency



were available to run bus service. In this scenario, the bus network could provide 70% ridership and 30% coverage, with an overall increase in bus service due to the increased funding.

Public input revealed positive responses to the general concepts that enhanced routes focused on increasing ridership. A balanced approach to future bus service changes is prudent within current financial constraints. Large enhancements to the bus network require finding savings elsewhere that can be reallocated or securing additional funding in order to put more service out on the street.

The System Redesign Study examined additional service in the middle of the day and on weekends. After all, many people today do not work a 9:00 to 5:00 job, for example, although many transit services are focused on peak hour services in the morning and evening. College students, retail employees, restaurant and entertainment workers, warehouse workers, second/ third shift workers, and health care professionals such

as nurses might need transit service at a variety of days and times. Additionally, customers visiting retail establishments or utilizing medical services desire bus service on weekends and throughout the day.

During public input for the redesign study, a majority of respondents (59%) agreed or strongly agreed that the balance of service between weekends and weekdays was right in the Expanded Funding Concept. This concept provides a higher level of service (frequency and span) on many routes on weekends than is available today. As RTA improves bus service, expansion of midday and weekend service on key routes will be a viable step forward.

IMPLEMENTATION

Implementation of the system redesign necessitates multiple departments inside RTA working together in order to adjust operations to enhance the customer experience. A single point person working in collaboration with the Executive Management Team should manage the process. To expand RTA's capacity and expertise temporarily during implementation, potential support includes a wayfinding consultant to address new schedules and maps; a sign contractor to physically change bus stop signs; a scheduling consultant; and a community relations consultant. Cross-departmental staff teams should be developed to collaborate on progress regarding several issues.

Considerations include:

Bus Stops, Passenger Shelters, License Agreements

- Implement infrastructure improvements - potential property issues for turnarounds and bus stops have long lead times and must be initiated early.
- Deliver stop level amenities that offer customers an enhanced transfer experience.

- Maintain clear and consistent information at all bus stops.
- Engage local municipalities who own right-of-way along key alignments to create buy-in on property purchases, license agreements, or easements for turnarounds and bus stops.
- Identify capital project needs early on in order to properly expand service to facilities such as transit centers or locations with frequent transfers.

Alignments, Schedules, Maps

- Build effective schedules meeting ridership/ coverage guidelines, Title VI, and Environmental Justice principles.
- Consider Title VI and ADA issues early on, and potentially hire a Title VI consultant. Each change in the plan may require a Title VI analysis so use public input as early as possible to eliminate issues.
- Provide accurate maps on which to determine bus stop placement, build schedules, and educate the public.

SUMMARY

- Begin to implement System Redesign
- Shift to the Current Funding Concept
- Expanded Funding Concept provides basis for future potential
- Focus on urban corridors with frequent service improves safe & equitable access to opportunity



TIMEFRAME

Short (2020-2022)

- Make small improvements along the way prior to a large system change
- Implement early wins that improve service while minimizing negative impacts
- Implement Current Funding Concept

Medium (2023-2026)

- Monitor redesign over time - system changes will potentially take three years to mature and establish consistent passenger levels
- Implement Expanded Funding Concept with more frequent corridors and seven day a week consistency

Long (2027-2030)

- Refine routes and schedules to maintain ridership/ coverage goals while meeting current needs and addressing feedback

- Provide more frequent, consistent access to dense populations within RTA's service area.

Marketing, Communication, Public Involvement

- Develop and execute a communication plan that will empower and educate staff, stakeholders, and leadership to communicate the benefits of the redesign to the community and create consistency in all external communications experiences.
- Wayfinding enhancements.
- Mass market outreach management and materials.
- Consider funding and space for extra staff and prepare for short-term employees in areas such as customer service around the new system launch.

Operations, Human Resources, Training, and Coordination

- Prepare, train, teach, and assist with coordination of redesign implementation to address and meet service requirements.

- Communicate effectively and clearly with staff from start to finish on changes and decision-making process to help ease transition away from the status quo.
- Meet staffing needs as required.
- Educate RTA operators by preparing internal maps for each line.
- Meet vehicle & maintenance equipment needs as required.

Government and Community Relations

- Ensure targeted stakeholder group is informed and supportive of RTA's redesign.
- Obtain Board support and maintain Board communications throughout since their buy-in will assist in refraining from the need to make changes later.
- Collaborate with elected officials to provide positive responses to constituent questions and comments regarding redesign impacts.



RESPONSIBILITIES

Champion: RTA - Planning and Implementation

Infrastructure and community relations support:

- City of Cleveland
- NOACA
- Cuyahoga County
- ODOT
- Municipalities
- Private and nonprofit partners



OUTCOMES

Current Funding Concept

For the average resident in Cuyahoga County:

- Current Funding Concept will link people to 17% more jobs in under 45 minutes and 11% more jobs in under 60 minutes than the present-day network.

Expanded Funding Concept

For the average resident in Cuyahoga County:

- Expanded Funding Concept will link people to 42% more jobs in under 45 minutes and 38% more jobs within 60 minutes compared to the present-day network.

IMPROVE HOW STREETS FUNCTION



Photo Credit: <https://transitcenter.org/publication/all-transportation-is-local/rewrite-the-rules-to-boost-growth-not-traffic/>



Photo Credit: streetsblog.org

GOALS

- ✓ Access
- ✓ Collaboration
- ✓ Customer Experience
- ✓ Equity
- ✓ Financial Stability
- ✓ State of Good Repair
- ✓ Technological Innovation

BACKGROUND

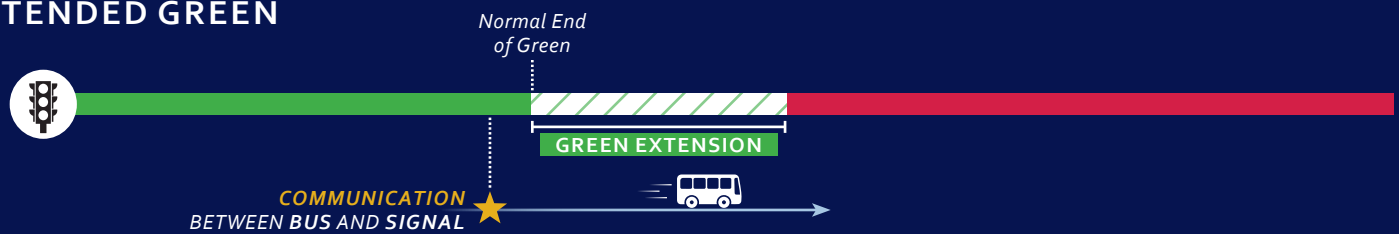
Stakeholder and public input revealed a perception that RTA is slow and unreliable. The customer experience was repeatedly mentioned as a key element that needs to be improved. Prioritizing transit in street design means allocating appropriate space for buses to travel, making improvements that increase swift movement, and emphasizing the perpetual importance of the pedestrian experience.

An effective transit system requires reliable service and streets that support transit. A variety of street improvements can provide fast, frequent service. Some notable improvements address traffic signal operations, corridor design, and intersection design. Benefits can often be enhanced when multiple improvements work together. This initiative builds upon existing examples of innovative transit infrastructure on the HealthLine, Superior Ave, and St. Clair Ave. In addition, RTA's new CAD/AVL system will help facilitate Transit Signal Priority.

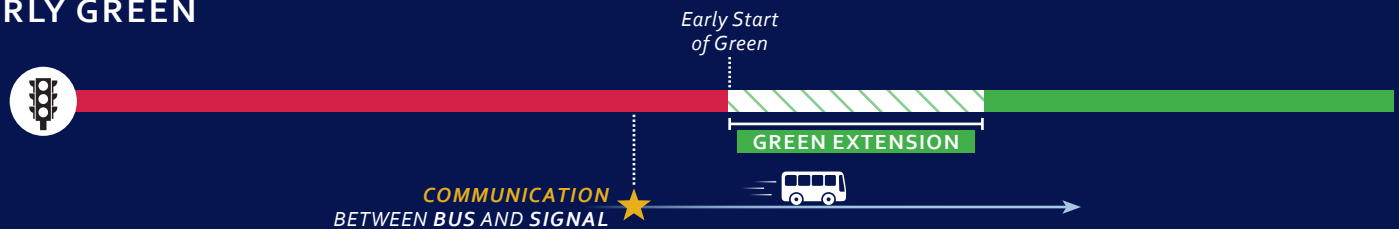
Transit Signal Priority

Transit Signal Priority can improve the transit riding experience and create more efficient operations. Transit

EXTENDED GREEN



EARLY GREEN



COMMON TYPES OF SIGNAL PRIORITY

Signal Priority describes technology that utilizes wireless communication and vehicle location to allow buses to travel through signalized intersections quickly. For example, the Chicago region has highlighted that Transit Signal Priority can reduce transit travel times by up to 15%. By either extending the green time or changing a red light to a green light, Transit Signal Priority can automatically operate in order to keep buses on time and reduce delays.

Bus-Only lanes

Bus-only lanes are corridor treatments that can improve bus speeds, improve travel time reliability, and improve headway adherence. New federal guidance from USDOT in 2019 approved innovative red pavement for bus-only lanes. The number of unauthorized vehicles in red-painted transit lanes fell by over 50% in multiple cities such as San Francisco and New York once bus lanes were redesigned with red pavement. Federal Highway Administration states that red pavement has been found to have positive impacts by reducing illegal occupancy of transit lanes by non-transit vehicles, improving travel time of transit vehicles, and reducing illegal parking in transit lanes.

Queue Jump Lanes

A queue jump lane is an intersection design treatment that allows buses to bypass stopped traffic through a short dedicated transit lane. Buses are in a priority position as they re-enter traffic flow at an intersection, which reduces delay and increases reliability. Queue jump lanes combine short dedicated transit facilities with either a leading bus interval or transit signal priority. Queue jump lanes function well where the bus travels in a right lane on a congested road, but other vehicles make low numbers of right turns. Where right turns are abundant, the dedicated transit facility needs to be separate from the right turn lane.

Curb Design

If buses can travel in a straight line without having to pull out of traffic and then merge back into traffic at stops, they can go faster and avoid being late. Bus bumpouts, boarding islands, and raised cycle lanes are extensions of the sidewalk into the roadway that can bring the curb to the bus at stops.

IMPLEMENTATION

Implementation of transit-priority street treatments will rely on collaboration across agencies. RTA owns and operates trains and buses and related transportation vehicles, facilities, and infrastructure. However, RTA does not own the streets that transit relies on for accessible and fast service. RTA, City of Cleveland, and other agencies have a history of successful partnership on transit initiatives that will form the foundation for future implementation. *Considerations include:*

Transit Signal Priority

- While a variety of operational nuances are possible, transit signal priority that provides extended green lights, early green lights, and phase jumps are the most common form of priority given to buses.
- Relationships and responsibilities among partners need to be designated and reiterated over time. TSP operations should be monitored for outcome measures including travel time, on-time performance, and travel time variability.

- TSP often results in additional benefits when combined with other priority treatments such as bus-only lanes.

Bus-Only Lanes

- FHWA recommends that agencies installing red paint for bus-only lanes include educational campaigns and signage to increase compliance.
- FHWA has design guidance regarding color, brightness, pavement markings, and regulatory requirements in order to obtain the operational benefits of prioritizing transit in a travel lane.
- Monitoring technology can assist in discovering vehicles that violate bus-only lanes.

Queue Jump Lanes

- Queue jump lanes depend on available right-of-way and signal operations at the intersection. Several options exist to address the design of particular intersections, such as discontinuing on-street parking in advance of the intersection, restricting

SUMMARY

- Prioritize transit in street design
- Allocate appropriate space for buses to travel
- Work with cities to enhance signal systems
- Increase fast and reliable service
- Support pedestrian friendly and transit-oriented development



TIMEFRAME

Short (2020-2022)

- Implement and promote early spot improvements that improve service while minimizing negative impacts
- Plan four corridors and ten intersections for infrastructure enhancements

Medium (2023-2026)

- Implement four transit corridor enhancement projects
- Monitor before and after impacts and obtain ongoing community feedback
- Plan four corridors and ten intersections for infrastructure enhancements

Long (2027-2030)

- Implement four more transit corridor enhancement projects
- Monitor before and after impacts and obtain ongoing community feedback
- Plan four corridors and ten intersections for infrastructure enhancements
- Emphasize ongoing corridor planning in conjunction with emergence of driverless vehicles and associated impacts

right turn movements, and providing separate green signal for buses only.

- Signage and educational campaigns should accompany new transit-priority roadway treatments.

Bicycles and Micromobility

- Where bike lanes and buses coexist, use bike-bus best practices such as boarding islands and raised cycle lanes.
- A de-emphasis on single occupancy automobiles will provide opportunities to diversify multiple other high quality transportation modes.
- Future corridor planning should consider a diversity of options for a set of roadways that could provide a spectrum of multimodal design treatments such as bicycle boulevards.

Evolution and Flexibility of the Curb

- Curbside functionality continues to expand as on-street parking and commercial freight delivery are joined by ridehailing, personal package delivery, meal delivery, and micromobility activity.
- As the year 2030 nears, it is expected that driverless vehicles will begin to appear on Cleveland's streets with increasing frequency.
- Through continual planning and analysis, RTA and City of Cleveland will need to allocate roadway space that allows flexible, safe, equitable, and predictable roadway activities over time.
- As curbside activity increases and diversifies, the importance of dedicated right-of-way for transit will become more important than ever and will continue to provide the backbone of movement along Priority Corridors.



RESPONSIBILITIES

Planning Champion: RTA

Implementation Champion: City of Cleveland

Supporting partners:

- NOACA
- Cuyahoga County
- ODOT
- Municipalities
- Private and nonprofit partners
- Neighborhood groups



OUTCOMES

Outcomes include:

Travel times will be reduced on Priority Corridors. Customer satisfaction will increase, reliability will increase, and agency operating expenses will decrease. Shorter travel times will allow RTA to run the same bus frequency with fewer vehicles. Improving travel time reliability allows RTA to reduce extra time in the schedule, further improving speed, and improving the customer experience.

IMPROVE HOW CUSTOMERS PAY



GOALS

- ✓ Access
- ✓ Customer Experience
- ✓ Economic Prosperity
- ✓ Equity
- ✓ State of Good Repair
- ✓ Technological Innovation

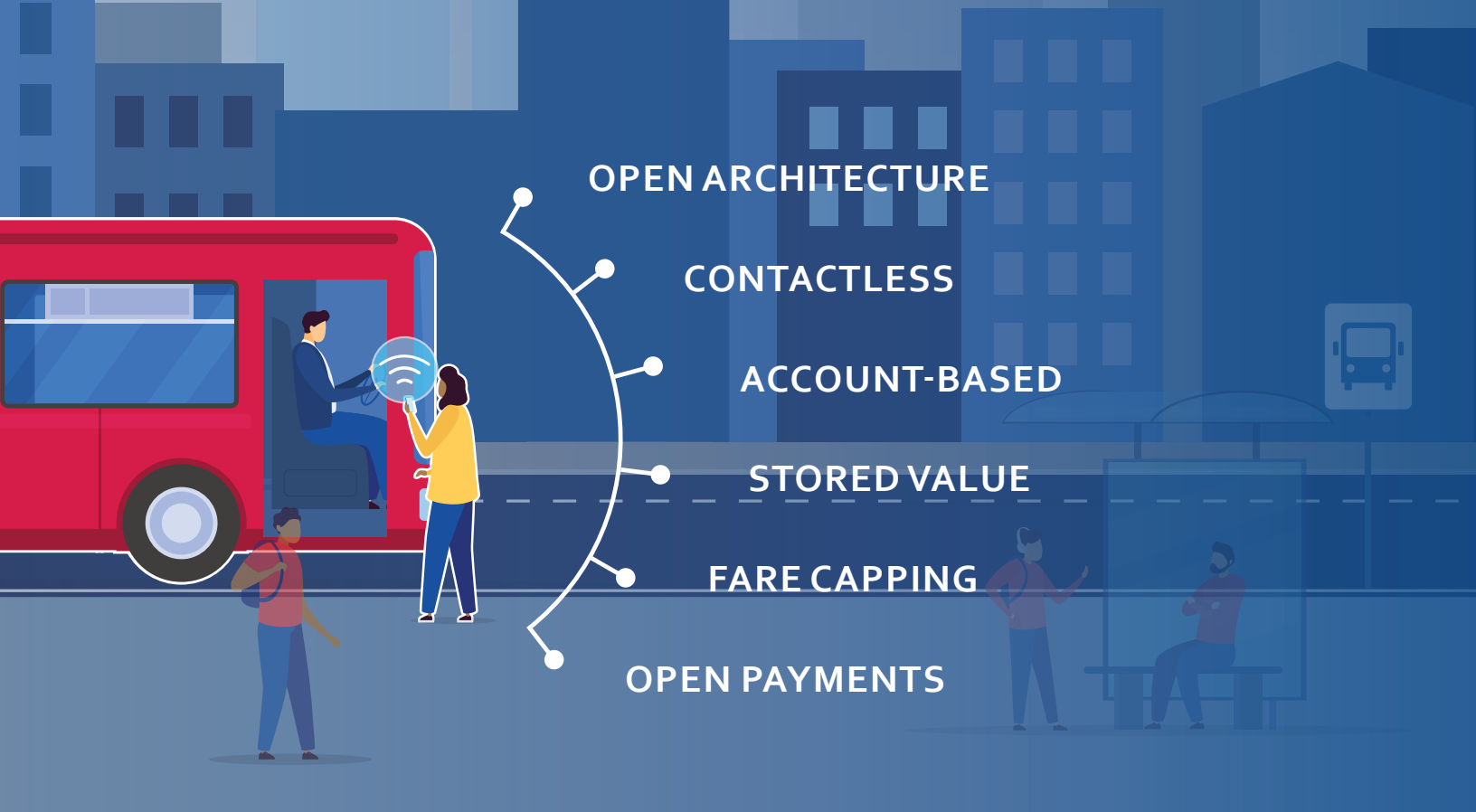
BACKGROUND

RTA completed a Fare Equity Analysis in 2019 as one of the Pillar Studies of the Strategic Plan. It suggested changes to RTA fare collection to improve customer experience and better reflect best practices in the US. A survey of riders revealed that the largest gaps between how well RTA does versus how important certain issues are included:

- Fares should be easy to understand
- Fares should be affordable
- Process should be convenient
- Fare payment should be fast

The study identified that confusion arises among customers from multiple fare types and policies. The study revealed that the fare payment process inadvertently penalizes people with low incomes and slows down the boarding process.

RTA's Fare Equity Analysis pillar study determined that over half of trips are taken by riders who are best served by a monthly or weekly pass. However, about half of these trips, especially those taken by people with low-incomes and people of color, are paying



more than they should because they do not purchase a pass or purchase a weekly instead of a monthly pass. In addition, RTA's System Redesign bus network would require about half of all riders to transfer, but some riders, especially people with low incomes and minorities, pay excessively for transferring.

A majority of RTA riders' household income is less than \$25,000 per year. RTA's Fare Equity Analysis Pillar Study's rider survey found that over 30% of respondents do not buy a monthly pass because they "can't afford it." For a frequent rider, the monthly pass offers the cheapest fares over time. Those who would benefit most from this deal are boxed out of this opportunity by their economic situation. Additionally, a majority of respondents to the Fare Equity Analysis pillar study survey revealed that they do not use a monthly pass or a 7-day pass because they either "don't use transit enough" or they "can't predict transit use." For these riders, they risk buying more than they need due to the uncertainty of their lives, a risk that can have devastating consequences for people with low incomes.

The study recommended a new fare collection system in its discussion of long-term improvements. A cloud-based open architecture would allow RTA to avoid being locked into a certain expensive proprietary system with a single vendor. Transparent standards could empower RTA to keep pace as technology evolves and allow RTA to save money when updating outdated technology. An account-based, contactless system that allows open payments will create a seamless boarding experience for customers. With options for customers to pay using a smartcard, contactless credit card, or smartphone, riders will experience the flexibility and frictionless experience they desire. A new payment system could support the development of Mobility-as-a-Service (MaaS), which describes a potential future in which RTA offers seamless integration with private transportation providers.

IMPLEMENTATION

Implementation of customer fare payment improvements will be a multifaceted process. The Fare Equity Analysis pillar study began a planning process that will necessitate retiring out-of-date technology and engaging RTA's technology team, financial department, and outside vendors. RTA should adopt updated policies and transition to the creation of a new fare collection system with a cloud-based open architecture that provides a seamless, equitable customer experience.

Considerations include:

Fast, easy boarding

- Boarding processes can occupy significant amounts of travel time on heavily used corridors.
- RTA customers are often not aware of the best fare pass for their travel, which is particularly true for people with low incomes since they transfer among RTA services at higher rates. This inadvertently slows down the boarding process.

- Better education and promotion of fare processes will help customers become aware of their best fare choices for their circumstances.

Fare capping and free transfers

- RTA should change its fare policy to eliminate the cost for transfers between RTA services.
- Fare capping refers to a policy that is becoming best practice with today's fare payment technology. Fare capping makes the equivalent of transit passes available to people who can't cover the full cost at once.
- Technology to allow fare capping and policies to allow free transfers will promote equity.

Equitable policies and workforce programs to assist low income riders

- The majority of RTA riders are employed full-time and are headed to a workplace. Approximately 10-15% of RTA riders are not currently employed but are seeking work.

SUMMARY

- Implement recommendations from Fare Equity Analysis pillar study
- Change RTA fare collection to improve customer experience and better reflect best practices
- Seamless, equitable fare practices



TIMEFRAME

Short (2020-2022)

- Improve communications about fare products and how to buy them
- Make 5-Trip Farecards available at more locations, and revise 5-Trip farecards to be fewer trips at the same price per trip
- Adjust Paratransit fares and passes
- Planning, policy development, and procurement for new fare collection system
- Reduce All-Day passes to equal 2 ride fare cost

Medium (2023-2026)

- Launch new fare collection system that is cloud-based and contactless with open architecture, regional multimodal accounts, stored value, fare capping, and open payments
- Launch coordinated mobility app
- Launch public education campaign to create a seamless transition and promote benefits

Long (2027-2030)

- Launch mobility as a service that is nimble and flexible to new modes and business models as autonomous vehicle fleets begin to go into service
- Maintain transit's role as backbone of Priority Corridors in midst of increasing transportation change

- RTA should continue to support the equitable access to opportunity of residents with low incomes and those seeking jobs through equitable fare policies in partnership through workforce development programs.
- RTA should expand vendor network of storefront partnerships to provide equal access to fare products for the unbanked population.

New fare collection system and coordinated mobility app for seamless transit experience

- RTA's Fare Equity Analysis pillar study concluded that aging fare equipment will be increasingly expensive to maintain and does not meet the needs of RTA's future.
- By expanding on the RTA CLE app's success and developing new capabilities, the app would provide one-stop-shop access to trip planning, fare payment, and vehicle arrival times across all mobility providers with transit at the core.

- New technology has given rise to new business models, such as real-time incentives for riders, in which gamification supports transit riders by earning points for trips and redeeming discounts. In times of poor customer service, an app would be able to provide real-time refunds.
- Future evolution of a mobility app reveals the potential for Mobility as a Service (MaaS), a single point of access through a subscription account to public and private mobility services through which users travel across a variety of modes.



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- NOACA
- Private mobility providers



OUTCOMES

Outcomes include:

Short term improvements can improve equity and communications to address findings in Fare Equity Analysis pillar study. A new fare collection system will provide a seamless customer experience that is cloud-based and contactless with open architecture, regional multimodal accounts, stored value, fare capping, and open payments. RTA will be positioned for a changing mobility landscape with an innovative, modern fare system.

IMPROVE PASSENGER SAFETY AND COMFORT



GOALS

- ✓ Access
- ✓ Customer Experience
- ✓ Environmental Sustainability
- ✓ Equity
- ✓ State of Good Repair
- ✓ Technological Innovation

BACKGROUND

During the Strategic Plan and associated pillar studies, stakeholder and public input revealed a desire for better transit vehicles and waiting areas. The riding experience was too often characterized as unclean and uncomfortable, which in turn led to a perception of unsafe. By continuing to improve areas where people access transit as well as the riding experience while in RTA vehicles, customer confidence and comfort will increase.

Transit Stops

Customers access RTA through Rapid stations, bus stops, and associated transit facilities. With over 6,000 bus stops that have approximately 1,100 bus shelters, RTA is challenged with providing access to transit stops while also deploying limited resources appropriately. Public engagement revealed that customers want improved bus stops with more shelters, amenities, real-time information, and lighting.



Rail Cars

RTA's 33-mile rail network is a multibillion dollar infrastructure asset to the community, as highlighted by the Rail Car Evaluation pillar study. RTA's heavy rail vehicles (HRVs) and light rail vehicles (LRVs) have approximately five and ten years of remaining useful life, respectively. As fleets age, in-service failures increase, customer service degrades, service reliability suffers, and maintenance costs increase.

Bus Fleet

The bus fleet represents the workhorses of the agency's service. More than 22 million trips are taken annually on RTA's buses, providing the majority of RTA's rides for customers. RTA has a plan in place to purchase 30-35 new transit vehicles per year and retire old ones over the next five years. RTA's 2020-2024 Capital Improvement Plan continues a planned bus replacement program, begun in 2013, that plans to continue until the entire fleet is replaced.

Safe and comfortable riders during a global pandemic

The transit riding experience, like so many of life's experiences, was thrown into disarray in early 2020 with the COVID-19 global pandemic. Among many impacts, public health and cleanliness became a focal point for transit. Notably, public input before the pandemic revealed that cleanliness was a key topic while discussing the perception of RTA.

According to the Centers for Disease Control and Prevention, the virus that causes COVID-19 is thought to spread mainly from person to person. It may be possible that a person can get COVID-19 by touching a surface that has the virus on it and then touching their own face, but this isn't the main way the virus spreads. Much continues to evolve on the scientific understanding of the virus. In our new normal, RTA is cleaning and disinfecting all vehicles and facilities daily.

IMPLEMENTATION

Implementation of passenger safety and comfort improvements includes transit waiting areas, rail procurement, bus procurement, and COVID-19 response.

Considerations include:

Transit Stops

- Implementation of changes outlined in the redesign pillar study provide an opportune time to review bus stops and amenities.
- Many agencies that have undergone service redesigns have experienced an overall decrease in bus stops across the bus system, while also seeing increased activity at several bus stops.
- These changes provide opportunities to enhance real-time information and lighting at key locations that will serve the most people and improve valuable transfer points.

Rail Cars

- The Rail Car Evaluation pillar study concluded that a \$240 million program of rail car replacement and infrastructure upgrades is a prudent course of

action. The report recommends RTA begin procuring HRVs by 2020 for delivery no later than 2023, followed by procuring LRVs by 2025, for delivery no later than 2028. The recommendation includes associated infrastructure upgrades to the rail maintenance facility, equipment and stations.

- As of early 2020, RTA has been awarded approximately \$61 million, with another \$57 million committed, approximately halfway toward the program goal of \$240 million. Funds include awards and commitments from NOACA, ODOT, Federal Formula Funding as well as the self-funded Rail Car Replacement Fund.

Bus Fleet

- RTA's procurement plan calls for purchase of new CNG vehicles for the foreseeable future. While a variety of vehicles will remain in RTA's fleet throughout the life of this Strategic Plan, RTA should transition toward a pilot program for zero emission vehicles, supported by federal grants.

SUMMARY

- Purchase new rail cars
- Improve transit stops and infrastructure
- Continue to upgrade bus fleet
- Experiment with Zero Emission Vehicles
- Create safe and comfortable customer experience



TIMEFRAME

Short (2020-2022)

- Continue and enhance cleaning procedures to address COVID-19
- Continue to provide service with a focus on essential workers getting to jobs at locations such as medical facilities and grocery stores
- Provide service with a focus on equity - the Priority Corridors of frequent service include neighborhoods with high levels of poverty, joblessness, and vulnerable health populations
- Begin procuring new heavy rail vehicles
- Evaluate and improve stop amenities on Priority Corridors during implementation of Current Funding Concept
- Pilot ten zero emissions vehicles with support from federal grants and with feedback on passenger comfort

Medium (2023-2026)

- Discontinue the practice of purchasing diesel vehicles
- Integrate zero emissions vehicles into bus fleet procurement strategy
- Begin procuring light rail vehicles
- Delivery of heavy rail vehicles and placement into revenue service
- Evaluate and improve stop amenities on Priority Corridors during implementation of Expanded Funding Concept

Long (2027-2030)

- Delivery of light rail vehicles and placement into revenue service
- Move from CNG to zero emission vehicles

- Zero emission vehicle transition implementation includes:
 - » *Research and Planning* - Evaluate fleet and operations to assess power needs and delivery to address how, when, and where fleets will be charged and associated costs.
 - » *Development* - Design for installation of needed equipment and infrastructure.
 - » *Pilot* - Identify realistic and predictable pilot based on planning.
 - » *Implementation* - Operations and Maintenance policy and procedures to transition to zero emissions vehicles.

COVID-19 Response

- Continue to provide service with a focus on essential workers getting to jobs at locations such as medical facilities and grocery stores.
- Provide service with a focus on equity - the Priority Corridors of frequent service include neighborhoods with high levels of poverty, joblessness, and vulnerable health populations.
- Frequent service to job hubs will be essential going forward to maintain social distancing.
- Follow cleaning and disinfecting guidelines as they evolve from the CDC and American Public Transportation Association.



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- City of Cleveland
- NOACA
- Cuyahoga County
- Power utilities
- Municipalities
- Private and nonprofit partners
- Neighborhood groups



OUTCOMES

Outcomes include:

- Increased passenger comfort to resume or continue riding during and after COVID-19 pandemic
- New rail car fleet
- Upgraded bus fleet
- Transition away from purchasing diesel buses to CNG
- Transition from CNG to zero emission vehicle purchases
- Enhanced customer experience as a result of transit stop improvements

ENGAGE WITH EMERGING TECHNOLOGY, DATA, AND NEW MOBILITY

GOALS

- ✓ Access
- ✓ Collaboration
- ✓ Customer Experience
- ✓ Economic Prosperity
- ✓ Environmental Sustainability
- ✓ Equity
- ✓ Technological Innovation
- ✓ Transparency

BACKGROUND

There are fundamental changes for transportation underway and on the horizon. Emerging technologies are coming together at an unprecedented pace in ways that will shift the underlying assumptions about and operation of our transportation network. Data management and analytics, once a slow and static task within many government agencies, is transforming the potential for positive and negative impacts on individuals and transportation systems. New mobility options are beginning to emerge as corporate investment is pairing with technological advancement and new approaches in transportation network analysis and design.

Transportation system optimization connects systems and vehicles with smart technologies to improve safety and operations. Data analysis of travel datasets from public and private mobility providers improves transportation system performance while maintaining security and protecting privacy. Smart parking systems can use parking occupancy sensors to provide information to users and add or remove on-street parking restrictions digitally as needed to



expand or restrict right-of-way uses. Vehicle technology is expanding so that connected vehicles have the capacity to communicate with other vehicles and infrastructure through interoperable networked wireless communications. The future of automation is rapidly expanding with automated driver assistance features, eventually paving the way for advanced versions of driverless vehicles.

Stakeholder and public engagement revealed nuances in the ways people think about emerging technologies and businesses. Partnerships with transportation network companies such as Uber and Lyft were viewed with skepticism at worst and cautious optimism at best. While the potential for better customer experience and travel time savings exists, Strategic Plan input revealed that many people view those companies as competitors that have an overall negative impact on RTA. Partnerships should be clearly negotiated as delineated by limited time (both time of day and length of partnership) as well as by geography and scope in order to fill gaps in the RTA network rather than creating negative impacts.

Both inside and outside RTA, staff and public input stated that a new emphasis on data and the changing nature of transportation were needed. Communication, automation and data are transforming the way transit vehicles interact with infrastructure, employees, and customers. These connections can improve traffic flow, optimize transit, create safer streets and will pave the way for automated vehicles. RTA can build on collaboration with the private sector, community groups, nonprofit organizations, and business leaders to approach a range of effective solutions to the challenges and opportunities presented by emerging mobility technologies. By emphasizing engagement with changing technologies, RTA can improve mobility to enhance quality of life and increase economic vitality across the region.

IMPLEMENTATION

RTA can approach transit through a new lens in which technology is a foremost topic of concern to be harnessed to improve the customer experience.

Considerations include:

Connected Vehicles

- Implement new radio technology acquired by RTA in 2019 and installed in 2020.
- Coordinate with ODOT and partners to accelerate vehicle to infrastructure connectivity.
- Communications and power should be planned for new roadway infrastructure. Key elements include fiber-optic network conduit for dedicated power and backhaul communications.
- Consider Dual-Chipped C-V2X/DSRC for roadside units to operate as either DSRC or as C-V2X equipment.
- Emphasize benefits of early deployments on safety and communicate widely with public regarding new technology efforts.

- Prepare for technology upgrades and interoperability in project development of transportation projects. Develop and recommend standards and best practices for new infrastructure installations of digital or electronic equipment along the roadside to be interoperable and capable of supporting future technologies.

Data Security and Sharing

- Create a commonly shared regional mobility data platform that houses transportation-related data that consolidates archived and real-time data from multiple agencies and private providers into a single data repository.
- Improve performance by developing open data. Promote development of open, well-documented Application Program Interfaces (API).
- Protect privacy by establishing security standards for maintaining privacy and data anonymity and emphasizing that shared data is secure and used for specific, defined purposes.

SUMMARY

- Refocus using technology as way to improve the customer experience & equity
- Experiment with connected vehicles
- Improve infrastructure
- Enhance real-time info
- Invest in data security
- Adopt guidelines for partnerships with new mobility providers



TIMEFRAME

Short (2020-2022)

- Implement sharing of open information pertinent to customers on public-facing online dashboard
- Establish policies with regional partners for data management and common standards for mobility providers on public right-of-way
- Conduct a six-month pilot of an autonomous microshuttle and obtain ongoing community feedback

Medium (2023-2026)

- Incorporate dedicated power and dedicated communications into new infrastructure projects in association with partners
- Integrate mobility-as-a-service in order to deliver optimal travel solution to customers among all available modes
- Collaborate with employees on workforce development and training for new technologies such as V2X
- Vision Zero Implementation

Long (2027-2030)

- Refine policies and practices as driverless technology advances, such as minimizing zero occupancy vehicles on transit corridors
- Continue to lead and leverage technological innovation in service of community goals

- Create policies that will ensure the interoperability of infrastructure, software, and data among regional stakeholders.

Mobility Management

- Adopt policies, standards, and partnership guidelines for new mobility business models.
- With public partners, implement standards for curbside passenger loading and freight delivery and utilize technologies to monitor, enforce, and monetize curbside operations.
- Adopt common standards and guidelines in collaboration with partner agencies for micromobility services that address issues such as ensuring equitable access, data sharing requirements, protection of personal information, and use of the public right-of-way.
- Establish data sharing requirements for private sector roadway users in collaboration with public partners. Establish standard data sharing

agreements that address travel use, privacy, and data security with private sector mobility providers.

Driverless Vehicle Preparation

- Transit should remain the backbone of transportation as autonomous vehicles are integrated into the transportation system.
- Pilot driverless microtransit to increase public exposure to automated vehicle technology. RTA should conduct additional demonstrations of automated microtransit to increase first and last mile connections to Rapid stations and create more opportunities for the general public to experience driverless vehicle technology firsthand.
- Workforce development and training will be necessary to allow employees to evolve into new roles as transportation technologies change.



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- NOACA
- City of Cleveland
- Cuyahoga County
- Utility providers
- Municipalities
- Private and nonprofit partners
- Neighborhood groups



OUTCOMES

Outcomes include:

- Transit remains the backbone of transportation as new modes, technologies, providers, and business models continue to integrate into the transportation system
- Seamless customer experience
- Coordinated system of standards, infrastructure, and data that creates efficient public systems and supports an inviting private sector business environment
- Emerging technologies that aim to improve air quality, lower mobility costs, and reduce travel times
- Equitable distribution of technological benefits
- Workforce development that prioritizes expertise of existing RTA employees and expands knowledge in new technologies

ADDRESS FUNDING CHALLENGES



GOALS

- ✓ Collaboration
- ✓ Customer Experience
- ✓ Economic Prosperity
- ✓ Equity
- ✓ Financial Stability
- ✓ State of Good Repair
- ✓ Transparency

BACKGROUND

The top issue during public input for the Strategic Plan concerned the necessity for additional funding to meet existing and future transit needs. RTA's current funding is not enough to meet the agency's needs, as highlighted by the Financial Analysis and Economic Forecast Pillar Study. According to the Ohio Public Transit Association, Ohio ranks 38th in the nation in per capita funding for transit and the State funds only three percent of public transit expenditures. RTA is a vital backbone for the region that serves more than a transportation purpose - the Economic Impact Pillar Study highlights the deep integration of RTA into the shared success of Cleveland, Cuyahoga County, Northeast Ohio, and the entire state.

RTA has opportunities to reduce some costs, as described by the Financial Analysis and Economic Forecast Pillar Study. RTA's administrative costs appear to be higher than at agencies in similar cities, so eliminating positions and reorganizing job responsibilities could save up to \$13 million per year. The study finds that RTA's paratransit costs are higher than in comparable cities, so opportunities to streamline paratransit costs could



potentially save approximately \$7 million a year. RTA's aging fare equipment is becoming increasingly expensive to maintain and doesn't meet the future needs of RTA. The high cost of maintaining rail infrastructure could potentially be assisted with sources of new funding including a sales tax increase, a new property tax, or a commercial-only property tax.

RTA's efforts to redesign its bus routes and bring ridership in line with peer cities could increase revenue. The System Redesign pillar study's Current Funding Concept will expand frequent service to over 150,000 more people including on key corridors such as Detroit, Lorain, Kinsman, and E. 105th. Fare revenues provided approximately \$42.8 million in 2019, down from \$46.6 million in 2018. By redesigning bus service to meet the needs of customers and increasing ridership, it is possible that a corresponding increase can occur in revenue.

RTA's real estate assets include hundreds of parcels across the region. RTA owns its headquarters, rail stations, rail yards, vehicle storage and maintenance facilities, transit centers, and additional infrastructure and facilities. Many of these assets are vital to the current and future operations of core RTA services. As highlighted in the Financial Analysis and Economic Forecast study, however, there are opportunities to evaluate whether some real estate assets could be sold or leveraged in innovative ways. These real estate assets could be opportunities of untapped revenue. In partnership with public partners and regional leaders, RTA can shift gears from a past of persistent unmet needs to a future of confidence in the funding picture for an agency that drives the economy forward.

IMPLEMENTATION

Past funding sources are not adequate to maintain, operate, and improve the existing transit system, let alone make investments for the future. Pillar studies reveal that RTA's current funding is not enough to meet the agency's needs. *Considerations include:*

Collaborate with partners to consider sources of new funding including a sales tax increase, a new property tax, or a commercial-only property tax

- Public support was strong for the Expanded Funding concept in the System Redesign pillar study, which would require additional operating expenses.
- Funding increases are needed to maintain rail infrastructure and replace rail fleet, as highlighted in the Financial Analysis and Economic Forecast Pillar Study.
- RTA has the ability to levy sales-and-use and property taxes at the county level.

Advocate with public partners to prioritize transit funding and de-emphasize longstanding automobile-focused funding model

- Incrementally transition the priorities for funding traditional roadway capacity projects to prioritizing funding for transit and technology projects so that they receive an increased share of programmed funds.
- Collaborate with partners to think creatively to establish new sources of funds to address the gap between needs and available funds.
- Continue to advocate for adequate dedicated transit funding from State of Ohio.

Assess internal agency costs

- Evaluate administrative staffing per unit costs of service provided.
- Evaluate paratransit costs as highlighted in Financial Analysis and Economic Forecast Pillar Study and RTA's Fare Equity Analysis pillar study.

SUMMARY

- Top issue during public input for the Strategic Plan concerned the necessity for additional funding to meet existing and future transit needs
- Backlog of state of good repair needs



TIMEFRAME

Short (2020-2022)

- Evaluate internal agency costs and assess local tax support
- Continue to apply aggressively for federal grant funds
- Continue to advocate for funding needs and solutions among local, statewide, and federal partners
- Decide if a tax levy will assist with funding challenges

Medium (2023-2026)

- Implement Expanded Funding Concept with more frequent corridors and seven day a week consistency
- Delivery of heavy rail vehicles and placement into revenue service
- Implementation of regional transit improvements in collaboration with community feedback

Long (2027-2030)

- Delivery of light rail vehicles and placement into revenue service
- Continued implementation of regional transit improvements in collaboration with community feedback
- Continued evaluation of transportation funding as emerging technological changes alter traditional funding mechanisms

Evaluate transportation funding as emerging technological changes alter traditional funding mechanisms

- Collaborate with public partners to identify modified and new sources of funding that are tied to deployment of mobility systems in ways that promote equity, maximize public resources, and engage private sector partners.
- Support legislative efforts on potential new user fees, registration fees, or other appropriate revenue streams to prepare the region for the anticipated future expansion of private mobility businesses.

Continue to maximize use of federal grant funding programs. In 2019 alone, RTA successfully competed for and won approximately \$40 million in competitive grants. Potential funding examples include:

- FTA Mobility Sandbox Program - funding to innovate, explore partnerships, develop new business models, integrate transit solutions, and investigate new technical capabilities.

- FTA Low and No Emission Vehicle Program - Provides funding to purchase or lease low- or no-emission transit buses and related equipment, or to lease, construct, or rehabilitate facilities to support low or no emission transit buses.
- FTA Pilot Program for Transit - Oriented Development Planning - Provides funding to integrate land use and transportation planning.
- FTA Zero Emission Research Opportunity - Nonprofit organizations can apply for funding to conduct research, demonstrations, testing, and evaluation of zero emission and related technology for public transportation applications.
- FHWA and FTA Broad Agency Announcements - Applied research funds focused on technology research and development.
- Safety Research and Demonstration Program - Provides technical and financial support for transit agencies to pursue innovative approaches to eliminate or mitigate safety hazards with a focus on demonstration of technologies.



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- FTA
- State of Ohio
- NOACA
- City of Cleveland
- Cuyahoga County
- Municipalities
- Chambers of commerce and associated business groups
- Private and nonprofit partners



OUTCOMES

Outcomes include:

- RTA's capital and operating needs are met through the year 2030
- Bus service can be appropriately deployed to serve the region's needs through implementation of the System Redesign's Expanded Funding Concept with more frequent corridors and seven day a week consistency
- Rail vehicles and infrastructure needs can be met to deliver consistent, fast, and safe service
- Increased attraction and retention of workers in regional job centers
- Transit remains the backbone of transportation that delivers access to opportunity for individuals and the region

PARTNER TO SUPPORT VIBRANT COMMUNITIES AND ACCESS TO JOB CENTERS

COLLABORATION FOR INNOVATIVE SOLUTIONS



GOALS

- ✓ Access
- ✓ Collaboration
- ✓ Customer Experience
- ✓ Economic Prosperity
- ✓ Equity
- ✓ Technological Innovation

BACKGROUND

Community leaders, stakeholders, and the general public agree that one of RTA's most vital roles is to connect people to jobs. Findings from the Strategic Plan engagement process revealed that many people understand that forces outside of RTA's control can negatively impact the agency, such as development patterns that are not supportive of transit. Therefore, partnership and collaboration were repeatedly emphasized as important to carve a successful path forward for the greater community.

The importance of transit has become clearer to many people during the COVID-19 pandemic. Ohio has received more than 1.2 million unemployment claims during the coronavirus crisis in early 2020. In less than three months in Cuyahoga County, thousands of coronavirus cases have been confirmed and the virus has killed hundreds of county residents. Stay-at-home orders to stem the disease have drastically impacted travel from airports to automobile traffic to transit. As spring turns to summer in 2020, economists worry it will take many years to recover the millions of jobs lost in recent months. Historical data reveals that past recessions have had long-lasting negative impacts on northeast Ohio and RTA that have been difficult to reverse.

EMPLOYMENT HUBS



The pandemic has launched the term “essential worker” into mainstream discussion about people who work in medical facilities, grocery stores, food production, cleaning services, and other jobs necessary for meeting the needs of society. Nationwide, the most likely person to hold a designated essential job is a person of color who is female. In many ways, essential workers are similar to many RTA customers.

RTA has always been vital in helping individuals achieve their goals and subsequently driving economic success for the region. RTA data reveals that most RTA customers ride transit to get to jobs, and traditionally a significant portion of riders are unemployed and looking for work. The role in supporting jobs and communities will become even more vital in the years to come as the region emerges out of the current recession. Partnership will be key.

RTA's existing service provides access to over 230,000 jobs, or about a quarter of total regional jobs. RTA provides access to many jobs by concentrating services in areas of high job density in traditional urban areas. RTA also serves four job hubs outside of dense urban areas. There are six main hubs of employment in the five-county region, with all six located within Cuyahoga County. The six hubs are:

- Downtown
- University Circle

- Solon Cochran Corridor
- Chagrin Highlands
- I-77-Rockside
- Hopkins Airport Area

The largest job hub is Downtown Cleveland and University Circle is the second largest. Both areas are urban environments that are served well with rail and fixed route transit and will see improved service through implementation of the System Redesign pillar study.

For regional job hubs that are not in walkable environments, the potential for transit-oriented development is limited. Economic factors, business decisions, and local policies have driven land use that is not dense or walkable, thereby creating a very challenging transit environment. New partnerships and mobility models will be needed to deliver people to jobs. In places like Solon, an abundance of available jobs in low density areas and a lack of adequate public transportation options to get to them is a problem that needs to be solved with multiple players finding creative solutions. Current transit riders working in outlying job hubs experience very long commute times, followed by considerable walking distances between the bus stop and their place of employment.

IMPLEMENTATION

Partnerships with business and community leaders across the region will be necessary to find creative solutions that have buy-in from multiple parties. RTA and employers would benefit from new collaboration to deliver new services to suburban and outlying job centers. Since transit service to sprawling job sites is challenging financially and operationally, partnership is vital. *Considerations include:*

Suburban Job Centers

- **Solon Cochran Corridor:** Solon is the third largest regional job hub in northeast Ohio. It is home to 900 businesses including large corporations, several of which are industrial and manufacturing companies that together employ thousands of people across multiple shifts of production. According to city data, there are over 20,000 daily commuters traveling to Solon from the surrounding region.
- **Chagrin Highlands:** The Chagrin Highlands job hub includes the area of I-271 around Chagrin Boulevard and Harvard Rd interchanges in City of Beachwood and surrounding villages. Over 20,000 daily

commuters commute to Chagrin Highlands from the surrounding region. A majority of workers in Chagrin Highlands make less than \$40,000 annually and one-quarter make under \$15,000 annually.

- **I-77-Rockside:** The I-77 & Rockside area encompasses the area south of I-480 surrounding the interchange of I-77 and Rockside Road located in the City of Independence. Roughly 20,000 workers commute to the area from across the region. Approximately one-third of employees make approximately \$15,000 annually and a majority make less than \$40,000 annually.
- **Hopkins Airport Area:** The area around Hopkins Airport includes many jobs for the federal government and the NASA Glenn Research Center. Ford Motor plant has over 1,500 employees over 1.6 million square feet that manufacture engines. Almost 20,000 commuters travel to the area daily for work. The airport is the largest and busiest airport in Ohio and is a hub for regional economic development.
- Each job center has fixed route transit service, yet

SUMMARY

Urban job hubs

- Downtown and University Circle will experience improved job access through implementation of system redesign improvements and transit-oriented development partnerships.

Suburban job hubs

- Solon Cochran Corridor, Chagrin Highlands, I-77-Rockside, and Hopkins Airport area will experience improved job access through microtransit solutions in partnership with local business leaders and stakeholders.

Transit-Oriented Communities

- Walkable neighborhoods will be supported through partnership along Priority Corridors.



TIMEFRAME

Short (2020-2022)

- Establish stakeholder group around Solon job center to assess needs and feasibility of solutions
- Conduct pilot program centered around Solon job center
- Evaluate before-and-after metrics of employee attraction and retention as well as community perception
- Assess needs and establish stakeholder group around Chagrin Highlands job center

Medium (2023-2026)

- Conduct pilot program centered around Chagrin Highlands job center and other regional job centers as needed
- Conduct feasible studies of transit service for other regional job centers
- Evaluate before-and-after metrics of employee attraction and retention as well as community perception
- If successful, launch regional long-term microtransit program

Long (2027-2030)

- Evaluate ongoing success and community perception
- Transition to widespread autonomous microtransit solutions as technology advances

stakeholders and the public have shown concern that more needs to be done to deliver workers to these job hubs.

Microtransit

- While demand-responsive shuttle services have existed for decades, new innovations are blossoming due to widespread mobile Global Positioning System (GPS) access, internet connectivity, and automated trip-making algorithms.
- Microtransit in modern transit planning refers to adapting the real-time customer innovations from transportation network companies to provide shared rides to the general public. A spectrum of service models, vehicle types, dispatching processes, and other variations exist to suit the needs of a particular geography.

Partnership to deliver success

- Microtransit and associated flexible transit services are inherently expensive. Successful models pool funding from businesses, municipalities, and other sources pertinent to a particular geography.

- RTA should conduct feasible studies with local chambers of commerce and other local leaders in order to identify need, collaborate with human resource departments, survey employees, identify funding match from employers, create 6-month to 12-month pilot projects, and facilitate promotion of services with area stakeholders.
- Success should be redefined from typical transit measures and instead be focused on employers' before-and-after ability to attract and retain employees.
- Beginning with Solon and incorporating leaders from other job hubs over time, the microtransit service can begin as a one-off geographic pilot and expand to a region-wide program.
- Several private companies exist that provide advanced technology solutions to power microtransit. Partnerships with these companies on background technology can be combined with RTA-branded vehicles and RTA operators in order to create an innovative and reliable customer experience.



RESPONSIBILITIES

Champions:

- RTA
- Business leaders representing job hubs

Supporting partners:

- Chambers of Commerce
- Workforce development partners
- NOACA
- Cuyahoga County
- Human resources departments
- Municipalities



OUTCOMES

Outcomes include:

- Reduction of social inequities
- Reduced travel time for workers
- Improved environmental quality and preservation of natural areas
- Increased attraction and retention of workers in regional job centers
- Increased economic output for northeast Ohio





Appendix

Greater Cleveland Regional Transit Authority

Strategic Plan

FRAMEWORK FOR THE FUTURE

October 2020





Appendix A

Background Planning Materials



National Scan of Peer Agencies and Best Practices

Transit agencies are facing similar issues when it comes to developing long-term plans that account for a quickly changing world. Some common trends emerged as the study team reviewed recent plans developed by leading and peer transit agencies around the country. While common topics such as ridership levels and efficiency of routes were mentioned frequently, many agencies specifically expressed the desire to enhance the passenger experience and incorporate emerging technologies to help with several functions of operations. Land use planning and development was also a common theme among

a number of cities in varying economic climates. The following list provides a cursory summary of other transit agency plans that informs the development of RTA's vision and goals update.

BALTIMORE, MD

The Maryland Transit Administration (MTA) is in the process of developing a new Regional Transit plan for central Maryland. While the specific goals of the plan are still under development, seven focus areas have been identified:

- **State of good repair** - identify the level of reinvestment needed to maintain the existing transit services.

- **Funding** - develop funding and financing strategies to support regional mobility services, based on best practices and regional analyses.
- **New mobility** - embrace changes in transport, technology, and mobility that are altering how we move about. Assess the new mobility options available in the region, including bikeshare, scootershare, carshare, rideshare, and microtransit, and identify opportunities and challenges associated with leveraging those services to meet regional mobility needs.
- **Customer experience** - improve the experience of using transit - from planning a trip to reaching a destination - through new technologies, improved amenities, and better customer service.
- **Service quality and integration** - evaluate existing transit services and determine potential improvements to make it easier to travel in the region.
- **Access** - work with local partners to ensure the areas served by transit are safe, comfortable, and convenient for people who use the region's transit options to live, work, and prosper.
- **Corridors of opportunity** - identify existing and potential corridors that could benefit from additional transit investment.²

CHICAGO, IL

Invest in Transit, the Regional Transit Strategic Plan for Chicago and Northeastern Illinois, identifies three main goals:

Deliver value on our investment

This goal focuses on the positive impacts of transit investment and the importance of increased funding.

Build on the strengths of our network

This goal focuses on the service improvements and infrastructure investments that the transit agencies would like to make in key transit markets throughout the region.

Stay competitive

This goal focuses on the vital role that transit plays as part of the region's mobility network and strategies for adapting to the evolving needs of riders.³

COLUMBUS, OH

The Central Ohio Transit Authority (COTA) published a 2016-2040 Long-Range Transit Plan that addressed three main goals aimed at guiding the agency toward a future where the needs of the central Ohio community are better served. The goals established by COTA were:

- **Ridership** - achieve ridership of 25 million passenger trips annually by 2025.
- **Expansion** - plan and invest in a multi-modal, high capacity, mass transit system connecting central Ohio residents to opportunity, economic prosperity, and to each other.
- **Perception** - be recognized in the communities, region, and nationally, as an essential partner in economic development and mobility solutions and as a leader in technological innovation and sustainability.⁴

COTA also recently undertook a transit system redesign that won praise and succeeded in increasing ridership. COTA's vision for the redesign was: "Improve the effectiveness and continued expansion of COTA's bus network, downtown operations, and technologies to meet the needs of growing and changing land uses in the central Ohio region".

DALLAS, TX

DART Vision Statement: "Your preferred choice of transportation for now and in the future."⁵

DART's Strategic Priorities

- Continually improve service and safety experiences and perceptions for customers and the public
- Optimize and preserve the existing transit system
- Optimize DART's influence in regional transportation planning
- Expand DART's transportation system to serve cities inside and outside the current service area
- Pursue excellence through employee engagement, development, and well-being
- Innovate to improve levels of service, business processes, and funding⁶

DENVER, CO

RTD Strategic Plan Strategies are:

- Deliver customer-oriented service
- Foster a safety culture
- Strengthen fiscal resiliency and explore financial innovation
- Improve customer access and support transit-oriented communities
- Optimize service delivery
- Use technology to operate efficiently and improve the customer experience
- Foster a dynamic and sustainable workforce

DETROIT, MI

The Regional Transit Authority of Southeast Michigan is currently working on an updated Master Plan. The draft version of Connect Southeast Michigan highlights the following goals:

- Improve frequency & reliability;
- Modernization & innovation;
- Local input on expanded services; and
- Seamless rider experience.⁷

HOUSTON, TX

The Metropolitan Transit Authority of Harris County (METRO) is in the process of developing a new plan for transit services in the Houston region. The main goals of this program, METRONext, are:

- **Improve mobility** - identify and develop transit improvements that increase speed and reliability.
- **Enhance connectivity** - connect riders to jobs, education, health care, and other destinations by having a transit system that connects people seamlessly from their starting and final destination using METRO's comprehensive infrastructure.
- **Support vibrant communities** - whether citizens are currently using public transportation or not, a seamless and diverse transit system enhances the overall quality of life by providing mobility options, spurring economic development, and improving the environment.
- **Ensure a return on investment** - the

implementation of smart and sustainable transit resources for the evolving region will preserve the desired way of life, ensuring the highest return in the future for today's investment.⁸

LAS VEGAS, NV

The Regional Transportation Commission of Southern Nevada (RTC) oversees transit and transportation planning operations for Southern Nevada. The RTC has these goals:

- Improve the efficiency and effectiveness of the transportation system and air quality by managing congestion;
- Enhance mobility by improving transportation choices and facilitating multi-modal connectivity;
- Increase safety for both motorized and non-motorized users;
- Maintain and improve transportation system infrastructure;
- Support regional planning efforts to improve economic vitality and education and invest in complete communities;
- Secure funding for expansion, operation, and maintenance of systems and routes; and
- Enhance public awareness and support of the regional transportation system.⁹

LOS ANGELES, CA

Goals from Metro Vision 2028 Strategic Plan are:

- Provide high quality mobility options that enable people to spend less time traveling
- Deliver outstanding trip experiences for all users of the transportation system
- Enhance communities and lives through mobility and access to opportunity
- Transform LA County through regional collaboration and national leadership
- Provide responsive, accountable and trustworthy governance within the Metro organization.¹⁰

MINNEAPOLIS, MN

The Transportation Policy Plan developed for the Minneapolis region aims to achieve the regional goals identified in the region's long term guide, Thrive MSP 2040. The six goals that are included in the vision of the transportation policy plan include:

- **Transportation system stewardship** - sustainable investments in the transportation system are protected by strategically preserving, maintaining, and operating system assets.
- **Safety and security** - the regional transportation system is safe and secure for all users.
- **Access to destinations** - a reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond.
- **Competitive economy** - the regional transportation system supports the economic competitiveness, vitality, and prosperity of the region and state.
- **Healthy and equitable communities** - the regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments.
- **Leveraging transportation investments to guide land use** - the region leverages transportation investments to guide land use and development patterns that advance the regional vision of stewardship, prosperity, livability, equity, and sustainability.¹¹

SAN FRANCISCO, CA

The San Francisco Municipal Transportation Agency (SFMTA) goals include:

- Create a safer transportation experience for everyone
- Make transit and other sustainable modes of transportation the most attractive and preferred means of travel
- Improve the quality of life and environment in San Francisco and the region
- Create a workplace that delivers outstanding service¹²

ST. LOUIS, MO

Metro Transit and the East-West Gateway Council of Governments worked together with communities around St. Louis to produce the region's first LRTP, entitled Moving Transit Forward. Throughout the development of the plan, the main values of the community were identified:

- Provide transit access to as many people and places as possible.
- Strengthen transit's role as a vital regional asset.
- Increase mobility options to more of the transit-dependent.
- Provide the best service for as many people as possible.
- Prove cost-effective.
- Encourage economic development and job growth.
- Help reduce traffic congestion

Footnotes

² https://rtp.mta.maryland.gov/focus_areas.php

³ Invest in Transit, Regional Strategic Plan for Chicago and Northeastern Illinois, 2018

⁴ COTA Long Range Transit Plan, 2016

⁵ <https://www.dart.org/about/missionstatement.asp>

⁶ <https://www.dart.org/ShareRoot/debtdocuments/FY19BusinessPlan.pdf?nocache=1>

⁷ <http://www.rtamichigan.org/improving-regional-transit/>

⁸ <https://www.metronext.org/about/>

⁹ <https://www.rtcsv.com/about-the-rtc/vision-goals/>

¹⁰ Metro Vision 2028 Strategic Plan, 2018 (Authority, 2018)

¹¹ Thrive MSP Transportation Policy Plan, 2018

¹² <https://www.sfmta.com/sfmta-strategic-plan>

¹³ Moving Transit Forward, 2016

PREVIOUS RTA REPORTS AND STUDIES

Bus Stop Guidelines, 2018

The purpose of this document is to present RTA's guidelines for the placement and design of bus stops. These bus stop design guidelines provide an ideal framework for bus stops in order to establish a safe and comfortable transit service. RTA operates in multiple jurisdictions throughout Northeast Ohio on roads maintained by various agencies including the Ohio Department of Transportation, Cuyahoga County Department of Public Works, and 59 different municipalities. In an effort to communicate on behalf of customers, RTA published these bus stop design guidelines so that each jurisdiction can understand what is needed to best serve passengers and operators. It also provides general guidance on ideal conditions that will benefit both pedestrians and automobile operators to create a safe, shared space for all users of the public right-of-way. The document addresses bus stop design, location, stopping zones, curb configurations, shelters, construction projects, and related topics.

Healthline Economic Investment, 2018

The Healthline bus rapid transit (BRT) line along Euclid Avenue in Cleveland was constructed in 2008 for approximately \$200 million. The corridor connects Cleveland's largest economic and cultural hubs, Downtown and University Circle. This report assessed the amount and types of investments along the Healthline between 2008 and 2018. It found that the total investment of all projects was \$9.24 billion, including 23.5 million square feet of development, 8,000 dwelling units, and 2,600 hotel rooms. Downtown (Public Square to E. 17th St.) saw the most investment, followed by University Circle (Stokes Blvd. to Lakeview Rd.), Fairfax (E. 79th St. to Stokes Blvd.), Campus District (E. 17th St. to Innerbelt Hwy.), Midtown (Innerbelt Hwy. to E. 79th St.), and East Cleveland (Lakeview Rd. to Windermere). The largest single stakeholder was Cleveland Clinic, which invested almost \$2 billion since 2007. Other development was varied by type and size, including healthcare, cultural institutions, market-rate housing, accessible housing, senior housing, student housing, condominiums, and public infrastructure.

First Last Mile Strategic Plan - Cycle Transit Guidelines, 2017

The purpose of this document is to advance sustainable transportation through coordinating multimodal options and encouraging bicycle ridership to and from transit. The goals of the plan are: Expand the reach of transit through infrastructure and policy improvements; maximize multi-modal benefits & efficiencies; and build on existing regional sustainable policies and planning initiatives. It notes that 3% of RTA riders biked to transit in 2013, with a goal to increase to 10% by the year 2023. Recommendations include increasing wayfinding signage to connect people on bicycles to transit services, supporting new bike facilities, and partnering to increase bike-transit connections.

Priority Corridors Analysis, 2015

The purpose of this report was to examine the underlying conditions of RTA's priority corridors and assess trends as they relate to demand for transit service. The analysis reviewed population and employment; social-economic characteristics; future funded and unfunded development projects, and travel patterns. In addition to the existing Red, Green, Blue, Waterfront rail lines, and the HealthLine and Cleveland State BRT services, RTA has selected nine priority corridors that could potentially provide a higher quality of service with improved transit amenities. These corridors were considered priorities due to their location, ridership levels, and connectivity to other rapid and bus services. Many of these corridors are also located along the historic streetcar network, which provides right-of-way that is needed for many transit and pedestrian enhancements. The report concludes that St. Clair Avenue, Broadway Avenue, and Lorain Avenue are the top three corridors with the greatest potential to develop transit enhancements and improve adjacent neighborhoods.

W25 Transit Development Strategy, 2015

This planning study aimed to define a strategy that improves livability and commerce along the West 25th Street/Pearl Road corridor by connecting regional assets, serving major employers, and addressing the needs of residents, current and future. The West 25th Street/Pearl Road Corridor is described as the

region's most indispensable North/South connection. Four City neighborhoods (Ohio City, Tremont, Stockyards/Clark Fulton, and Old Brooklyn), and several civic organizations and residents participated. Through a community engagement process, the stakeholders concluded that a "BRT Lite" approach that features dedicated lanes for bus and bicycle traffic, consolidated stops with enhanced waiting environments, branded bus routes, and transit signal priority is recommended for the corridor from State Road to Detroit Avenue. The recommended approach was modeled after the Cleveland State Line improvements on Clifton Boulevard. The branded MetroHealth Line launched two years later in 2017 with new buses, shelters, and signage along the corridor.

E. 34th Street Campus/E. 79th Stations Transit Services Alternatives Analysis, 2015

This report addressed the future of stations in need of repair. The project recommendation for the E. 34th-Campus Station was to proceed with the design and construction of the station, which was completed in 2017. The project recommendation for the E. 79th Red Line Station is to proceed with the design of the station, to be constructed in 2020. The planning process noted that it identified a high level of community support for the stations, among members of the public, public officials, and station area institutions and organizations. The process elicited promises of a high level of future cooperation and collaboration among RTA and community institutions, to encourage development in station areas that is more intensive, dense, and oriented in a way that supports transit ridership. Opportunity Corridor could potentially drive such development near E. 79th Street stations.

ADDITIONAL PREVIOUS REPORTS AND STUDIES

Aim Forward 2040, 2017

The Northeast Ohio Areawide Coordinating Agency (NOACA) is the Metropolitan Planning Organization (MPO) serving the counties of and municipalities and townships within Cuyahoga, Geauga, Lake, Lorain and Medina. NOACA's Long-Range Transportation Plan for the region was approved in 2017. AIM Forward 2040 is the framework for directing investment for all forms of transportation in Northeast Ohio, including

motor vehicle, bridge, transit, bicycle, walking and the movement of freight. The plan offers a vision of the region's transportation system through the year 2040 and identifies \$15.8 billion in transportation investments that address accessibility, safety and mobility for people who live and work in Northeast Ohio. The plan identifies investments to address the needs of the region. It notes that almost 7 million trips are taken daily in the NOACA region; 82% of the region's population commutes to work alone; and 62% of the region's population is within a half-mile of a transit station. The plan discusses transit services provided by the Greater Cleveland Regional Transit Authority (RTA), Laketran (Lake County's regional public transportation authority), Lorain County Transit (LCT), Medina County Public Transit (MCPT), and Geauga County Transit. The plan notes that RTA is the largest transit system operating in the region and accounts for more than 94% percent of the region's operating and capital needs. The plan calls for enhancing and investing in transit across the region.

Age-Friendly Cleveland Action Plan, 2017

City of Cleveland Department of Aging and Age-Friendly Cleveland created this plan to enhance age friendliness and livability. The key impact areas are: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services. The planning process included engagement of over 1,000 older adults. The plan notes that Cleveland is home to over 70,000 residents age 60 and older. Transportation topics include affordability, reliability and frequency, travel destinations, age-friendly vehicles, specialized services, priority seating, safety and comfort, transport stops and stations, information, community transport, taxis, roads, driving competence, and parking. The report states, "Impressions of the availability of public transportation were overwhelmingly positive by those who report regularly using Greater Cleveland Regional Transit Authority." The report recommends transit-oriented development for aging in place.

Regional Transit-Oriented Development Scorecard and Implementation Plan, 2016

This report highlights four ingredients to successful walkable development near transit: development that

is compact and dense relative to surrounding area; mix of land uses; safe, inviting, interconnected public realm; and a new approach to parking with fewer cars, shared facilities, and district design standards. This report assessed all rail stations on the Red Line; all stations on the Blue, Green, and Waterfront Lines, either individually or in clusters of closely spaced stations; HealthLine BRT service, in clusters of closely spaced stops; ten Priority Bus Corridors designated by RTA, including the Cleveland State Line BRT service; and a sampling of suburban town centers and bus transit centers. Considerations included place typology, connectivity, market strength, land availability, and government support.

NOACA Strategic Plan, 2015

This regional plan addresses the demographic and economic trends that will shape the region over the next 20 to 30 years. The plan defines the agency's vision and goals, and identifies strategies for how to allocate resources—money, staffing, and Board and stakeholder activities—in pursuit of the agency's goals. The document highlights several challenges related to growth, development and economic sustainability. For example, between 1970 and 2010, the population of NOACA's region shrank from 2.32 million to 2.07 million residents, a 10% reduction in population during a period when the Ohio and U.S. population grew. At the same time, the geographic expansion of the region continued outward. The plan outlines NOACA's vision and the following goals: Strengthen Regional Cohesion; Preserve Existing Infrastructure; Build a Sustainable Multimodal Transportation System; Support Economic Development; Enhance Quality of Life.

NOACA Transportation for Livable Community Initiative (TLCI) Reports

Irishtown Bend Vision Plan, 2018

The study focused on a hillside in Cleveland adjacent to the Cuyahoga River and bounded generally by W 25th Street, Detroit Avenue, Lorain Avenue, and the RTA Red Line. The site is at a critical juncture for the Cleveland region's bicycle trails, and has the potential to connect the Redline Greenway, Shoreway, and Lake Link Trails. In addition to bicycle infrastructure, the plan outlines the creation of a public park along the river, and a number of intersection improvements

adjacent to the site. A focus of the intersection improvements is the incorporation of a dedicated cycle track, buffer areas, queue boxes, cycle crossings, and mid-block cycle crossings.

Chagrin Valley Connections TLCI Study, 2018

For the Chagrin Valley Connectors Transportation for Livable Communities Initiative (TLCI) Study, the villages of Gates Mills, Hunting Valley, and Moreland Hills partnered together to explore potential on and off-road multi-modal connections between the Cleveland Metroparks North and South Chagrin Reservations. The goals of the study were to look at ways to connect one of the final missing pieces of Cleveland's Emerald Necklace, a series of parks and greenways encircling the city, as well as investigating potential multi-modal safety and experience improvements, and exploring additional connections in and out of the Chagrin River Valley to neighboring communities. At this time, final recommendations are limited to the installation of sharrow pavement treatments along Chagrin River Road, in tandem with additional bike signage to alert cyclists and motorists to the presence of a shared-use roadway.

Mayfield Road Multimodal Corridor Study, 2018

The Study Area runs the length of Mayfield Road within the cities of Cleveland Heights, South Euclid, Lyndhurst, and Mayfield Heights, beginning at 126th Street on the western edge and ending at SOM Center Road to the east. This portion of Mayfield Road within the Study Area is approximately 8 miles long. The plan addresses land use and transportation improvements throughout the corridor, addressing issues such as pedestrian connectivity, cycling routes, vehicular movement, transit service, street design, and the interaction between different modes. The study explores the transit service in the area and how bus stops and enclosures are incorporated into the streetscape and traffic designs.

Cleveland's Midway Cycle Track Plan, 2018

The purpose of the plan is to identify potential Midway Cycle Track corridors based on the design standards that were developed as part of the planning process for the project. The intent is to integrate Midway Cycle Track facilities into Cleveland's Bikeway Master Plan as an alternative type of bicycle

infrastructure that provides an interconnected system with a variety of bicycle facility types in conjunction with of the overall network.

Cleveland's Multimodal Transportation facility, 2016

This planning effort included City of Cleveland, Cleveland City Planning Commission, NOACA, Greyhound, RTA, Amtrak, Bike Cleveland, and other stakeholders. The plan created schematic site and architectural renderings of a multimodal transit hub that would connect rail, bus, and other forms of ground transportation. The project construction estimate is approximately \$46.6 million.

East 79th Street Corridor Study, 2016

The Opportunity Corridor is a planned roadway to better connect Central Cleveland with the neighborhoods to the east. The planned alignment for the corridor runs between the RTA's blue/green and the red line at East 79th Street. The intent of the plan is to provide a vision for public and private investment and to spur transit oriented development around the two existing RTA stations. The project study area is centered on the East 79th Street corridor and is defined by Woodland Avenue to the north and Garden Valley Road to the south, with a particular focus on the areas in close proximity to the transit stations. It is approximately .95 miles in length. The plan focuses on guiding the density, orientation, and function of development in key areas, and describes how parking and transportation investments should be oriented to support that development.

East 185th Street Corridor Plan, 2016

This corridor study focuses on land use, streetscape, and roadway improvements along the East 185th Street Corridor, a 1.43 mile road between Cleveland and Euclid, bounded by I-90 to the south and Lake Erie to the north. The plan recommends targeted development sites along the corridor, parking considerations for larger institutional users such as the Cleveland Clinic, and streetscape improvements along the length of the corridor.

Clark Avenue Corridor Plan, 2015

The study is intended to guide public and private investment along the Clark Avenue corridor, in the 2.5 mile segment stretching from W. 65th Street



to Quigley Avenue in Cleveland. The study covers various components of the corridor, including land use and development, pedestrian access, public transit, cycling, utilities, and streetscape. Additionally, a traffic analysis was completed for intersections along the corridor to better understand traffic and truck operations and inform concepts for lane configurations. The recommendations were based on a complete streets approach, and include concepts increasing pedestrian connectivity, bicycle infrastructure, and transit accessibility. Related to transit, public participants requested: direct service to downtown and bus access to Clark fields; wayfinding on Transit Waiting Environment (TWE) shelters recommended; consolidating TWE's into locations on 41st, 31st, and Fulton for both eastbound and westbound routes.

Detroit Road Traffic, Parking analysis and Marion Ramp Feasibility Study, 2015

The project study area is within western Lakewood and eastern Rocky River in Cuyahoga County, Ohio. The limits extend along Lake Road from West Clifton Boulevard to Wagar Road and along Detroit Road between Wooster Road and Wagar Road for assessing traffic while the main study area for improvements to pedestrian, bicycle, and parking issues is focused along Detroit Road, between Lakeview Avenue and Old Detroit Road. There are traffic congestion and deficiencies in parking, pedestrian, and bicycle facilities within the residential and commercial district surrounding Detroit Road. The purpose of this study was to assess existing conditions and determine improvements that can be made to better facilitate vehicular, pedestrian, and bicycle movements/connections within the study area as well as identify opportunities for improved parking facilities. Additionally, the study assessed the feasibility of removing or repurposing the Marion Ramps from the study area and the resulting impacts of this change in traffic pattern within the study area, specifically along West Clifton Boulevard, Sloane Avenue, Linda Street, and nearby residential streets.

Lakefront Greenway and Downtown Connector Study, 2015

This study addressed the St Clair Superior District, Campus District, and Warehouse District. The study lays the groundwork for pedestrian and cycle paths to connect areas along Cleveland's lakefront from the Cuyahoga River to the west, to Martin Luther King Jr. Drive to the east. Additional connectivity from the lakefront greenway corridor to other districts and cycling infrastructure are outlined.

Moving Greater University Circle - Transportation and Mobility Plan, 2015

The plan outlines a series of strategies or interventions for addressing specific goals, such as prioritizing walking, providing accessible transit, and smart parking. Those strategies are then applied to specific places within University Circle with the intent of improving the intersection, roadway, or overall mobility of the place. Relating to transit, the plan offers strategies to expand the pedestrian and cycle network to transit stops, improve stop amenities, and provide bus bulbs in key areas. Four intersections were prioritized in the process for immediate

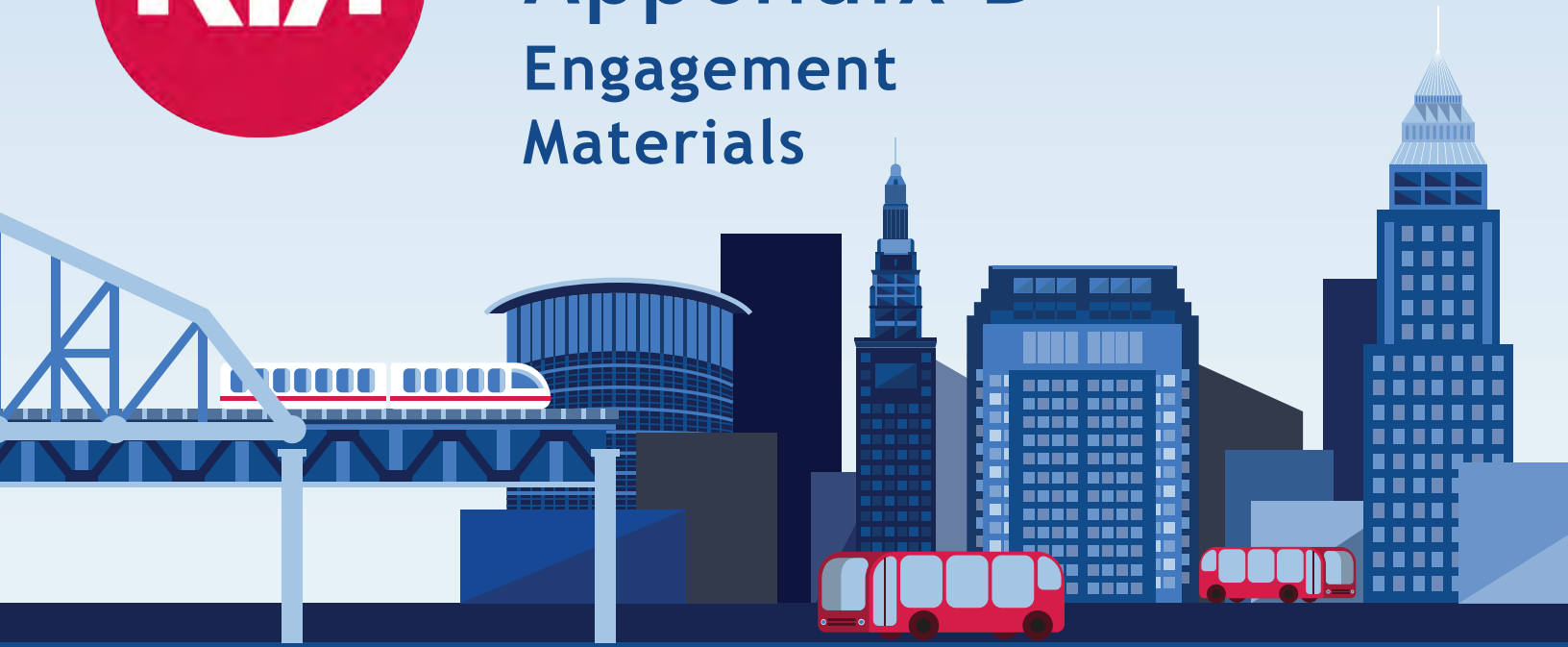


implementation to reduce conflicts between drivers, walkers, cyclists, and transit riders: Martin Luther King Jr. Drive at Carnegie Avenue; Euclid Avenue at Ford Drive/Mayfield Road; Euclid Avenue at E. 115th Street; and Euclid Heights Boulevard at Cedar Road.



Appendix B

Engagement Materials



2019 Public Meetings

Facility Name	Facility Address	Date	Time
Cleveland Public Library, Main Auditorium	525 Superior Ave., Cleveland, OH 44114	Monday, May 6	11:00 a.m.
Cleveland Public Library, Main Auditorium	525 Superior Ave., Cleveland, OH 44114	Monday, May 6	5:30 p.m.
Cedar Extension Hi-Rise (CMHA)	2320 E. 30th St., Cleveland, OH 44115	Tuesday, May 7	10:00 a.m.
Murtis Taylor Multi-Services Center	13422 Kinsman Rd., Cleveland, OH 44120	Tuesday, May 7	3:00 p.m., 5:30 p.m.
Gunning Rec Center	16700 Puritas Ave., Cleveland, OH 44135	Wednesday, May 8	4:00 p.m., 6:00 p.m.



2019 Public Meetings

Facility Name	Facility Address	Date	Time
Cleveland Public Library, Main Auditorium	525 Superior Ave., Cleveland, OH 44114	Monday, May 6	11:00 a.m.
Cleveland Public Library, Main Auditorium	525 Superior Ave., Cleveland, OH 44114	Monday, May 6	5:30 p.m.
Cedar Extension Hi-Rise (CMHA)	2320 E. 30th St., Cleveland, OH 44115	Tuesday, May 7	10:00 a.m.
Murtis Taylor Multi-Services Center	13422 Kinsman Rd., Cleveland, OH 44120	Tuesday, May 7	3:00 p.m., 5:30 p.m.
Gunning Rec Center	16700 Puritas Ave., Cleveland, OH 44135	Wednesday, May 8	4:00 p.m., 6:00 p.m.
Maple Heights Library	5225 Library Ln., Maple Hts., OH 44137	Thursday, May 9	5:30 p.m.
Lakeview Towers (CMHA)	2700 Washington Ave., Cleveland, OH 44113	Monday, May 13	10:00 a.m.
Collinwood Rec Center	16300 Lakeshore Blvd., Cleveland, OH 44110	Monday, May 13	5:30 p.m.
Cleveland Public Library, South Branch	3096 Scranton Rd., Cleveland, OH 44113	Tuesday, May 14	10:00 a.m.
Cleveland Heights Community Center	1 Monticello Blvd., Cleveland Hts., OH 44118	Tuesday, May 14	5:30 p.m.
La Sagrada Familia	7719 Detroit Ave., Cleveland, OH 44102	Weds., May 15	5:30 p.m.
Bellaire Gardens (CMHA)	12555 Bellaire Rd., Cleveland, OH 44135	Monday, May 20	10:00 a.m.
Parma Library	6996 Powers Blvd., Parma, OH 44129	Monday, May 20	5:30 p.m.
Rocky River Don Umerely Civic Center, Memorial Hall	21012 Hilliard Blvd., Rocky River, OH 44116	Weds., May 22	5:30 p.m.
Independence Library	6361 Selig Dr., Independence, OH 44131	Tuesday, May 28	5:30 p.m.
Cleveland Public Library, Main, Learning Commons	525 Superior Ave., Cleveland, OH 44114	Tuesday, Sept. 24	11:00 a.m.
Cleveland State University, BH134	2121 Euclid Ave., Cleveland, OH 44115	Tuesday, Sept. 24	5:30 p.m.

2019 Public Meetings

Facility Name	Facility Address	Date	Time
RTA Main Office Board Room	1240 W. 6th St., Cleveland, OH 44113	Weds., Sept. 25	10:00 a.m.
RTA Main Office Board Room	1240 W. 6th St., Cleveland, OH 44113	Weds., Sept. 25	3:00 p.m.
Independence Library	6361 Selig Dr., Independence, OH 44131	Thursday, Sept. 26	5:30 p.m.
Cedar Extension Hi-Rise (CMHA)	2320 E. 30th St., Cleveland, OH 44115	Monday, Sept. 30	10:00 a.m.
Parma Library	6996 Powers Blvd., Parma, OH 44129	Monday, Sept. 30	5:30 p.m.
Cuyahoga Community College- Eastern Campus	4250 Richmond Rd., Highland Hills, OH 44122	Tuesday, Oct. 1	11:30 a.m.
Cuyahoga Community College- Eastern Campus	4250 Richmond Rd., Highland Hills, OH 44122	Tuesday, Oct. 1	2:00 p.m.
Beachwood Library	25501 Shaker Blvd., Beachwood, OH 44122	Weds., Oct. 2	5:30 p.m.
Windermere Rapid Station	14232 Euclid Ave., East Cleveland, OH 44112	Thursday, Oct. 3	10:00 a.m.
Cuyahoga Community College- Western Campus	11000 W. Pleasant Valley Rd., Parma, OH 44130	Thursday, Oct. 3	3:00 p.m.
Cuyahoga Community College- Western Campus	11000 W. Pleasant Valley Rd., Parma, OH 44130	Thursday, Oct. 3	5:30 p.m.
Tower City Rapid Station	50 Public Square, Cleveland, OH 44113	Monday, Oct. 7	2:00 p.m.
Maple Heights Library	5225 Library Ln., Maple Hts., OH 44137	Monday, Oct. 7	6:00 p.m.
Collinwood Rec Center	16300 Lakeshore Blvd., Cleveland, OH 44110	Tuesday, Oct. 8	5:00 p.m.
Gunning Rec Center	16700 Puritas Ave., Cleveland, OH 44135	Weds., Oct. 9	5:30 p.m.
Michael J. Zone Rec Center	6301 Lorain Ave., Cleveland, OH 44102	Saturday, Oct. 12	10:30 a.m.
Southgate Transit Center	5491 Warrensville Center Rd., Maple Hts., OH 44137	Weds., Oct. 16	10:00 a.m.



2019 Public Meetings

Facility Name	Facility Address	Date	Time
Rocky River Don Umerely Civic Center, Memorial Hall	21012 Hilliard Blvd., Rocky River, OH 44116	Weds., Oct. 16	5:30 p.m.
Cleveland Heights Community Center	1 Monticello Blvd., Cleveland Hts., OH 44118	Monday, Oct. 21	5:30 p.m.
Cleveland Public Library- South Brooklyn Branch	4303 Pearl Rd., Cleveland, OH 44109	Tuesday, Oct. 22	5:00 p.m.
Lakewood Library- Madison Branch	13229 Madison Ave., Lakewood, OH 44107	Weds., Oct. 23	5:30 p.m.
Alpha Education Center	2820 E. 116th St., Cleveland, OH 44120	Thursday, Oct. 24	5:30 p.m.



Internal Stakeholder Group



Name	Title	Department	Division
Amy Snell	Planning Team Leader	Planning and Programming	Engineering and Project Management
Brian Temming	Quality Assurance Manager	Project Support	Engineering and Project Management
Heather Valentino	Program Manager	Project Support	Engineering and Project Management
Jim Rusnov	Real Estate Manager	Planning and Programming	Engineering and Project Management
Mandy Metcalf	Planning Team Leader	Planning and Programming	Engineering and Project Management
Maribeth Feke	Director	Planning and Programming	Engineering and Project Management
Eric Johnson	Government Relations	Executive	Executive
Jose Feliciano	External Affairs Manager	Executive	Executive
Floun'say Caver	Chief Operating Officer	Executive	Executive
Carolyn Young	Senior Budget Analyst	Office of Management and Budget	Finance and Administration
Eric Vulkmanic	Budget Analyst	Office of Management and Budget	Finance and Administration
Rajan Gautam	DGM	Executive	Finance and Administration
Chris Orlando	Manager	Infrastructure	Information Technology
Pete Anderson	CIO	Executive	Information Technology
Kim Gillan-Shafron	Marketing Manager	Marketing	Marketing
Bryan Moore	Acting District Director	Triskett	Operations
Dan Detrich	Manager	Fleet Management	Operations
Jacob Kabelen	Supervisor - Power and Way	Rail	Operations
John Palaghi	Acting Director	Service Management	Operations
Mike Lively	Manager	Intelligent Information Systems	Operations
Nick Biggar	District Director	Hayden	Operations
Vaneshia Houston	Transportation Asst Mngr	Paratransit	Operations
Theres Muti		FM	Operations
Sie'ra Williams			Operations
Dro Sohrabian	MDP	Rail	Operations



External Stakeholder Group



Entity	Department	Name
Cuyahoga County Planning Commission		Jim Sonnhalter
Cuyahoga County Planning Commission		Michael Mears
Northeast Ohio Areawide Coordinating Agency		Kelley Britt
Northeast Ohio Areawide Coordinating Agency		Kathy Sarli
Ohio Department of Transportation		Melinda Bartizal
Cuyahoga County Planning Commission	Public Works	Nichole English
City of Cleveland	Planning	Calley Mersmann
Cleveland Neighborhood Progress		Wayne Mortensen
Fund for the Economic Future	Mobility	Dominic Mathew
University Circle Inc.	Mobility	Annie Pease
Organization	Department	Name
Bike Cleveland	Executive Director	Jacob Van Sickle
Burton Bell Carr	Executive Director	Tim Tramble
City of Cleveland	City Planning Commission	Freddy Collier
City of Cleveland Office of Sustainability	Office of Sustainability	Matt Gray
City of East Cleveland	Community Development	Melran Leach
City of Lakewood	Director of Planning	Bryce Sylvester
City of Shaker Heights	Planning	Joyce Braverman
CMHA	Modernization and Development	Michael Shea
Cuyahoga Community College	Chief Innovation Officer	Gerard Hourigan
Cuyahoga County Board of Health	Safe Routes to School	Megan Conklin
Cuyahoga County Office of Sustainability	Office of Sustainability	Mike Foley
Detroit Shoreway	Assistant Director	Jenny Spencer
Downtown Cleveland Alliance	Business Development	Michael Deemer
First Suburbs	Director	Jenifer Kuzma
Greater Partnership Cleveland		Chris Urban
Hispanic Business Alliance	Executive Director	Jenice Contreras
Lakewood Alive	Executive Director	Ian Andrews
Metro West	Executive Director	Ricardo Leon
MetroHealth		Greg Zucca
Metroparks		Kelly Coffman
Ohio City Inc.	Executive Director	Tom McNair
Policy Matters		Amanda Woodrum
Urban Land Insitute	Executive Director	Adrian Burn
Fairfax Development Corporation	Assistant Director	Catrondra Noye



Greater Cleveland Regional Transit Authority Strategic Plan



FRAMEWORK FOR THE FUTURE

i

BACKGROUND

The Greater Cleveland Regional Transit Authority (RTA) is partnering with the community to develop a new Strategic Plan that will shape the “Framework for the Future” and guide the agency to year 2030. RTA’s customer focus is demonstrated by continual infrastructure upgrades and several ongoing planning initiatives. However, several challenges create uncertainty on the path ahead: decreasing ridership in line with national trends; limited and reduced funding; aging infrastructure; and emerging technology and mobility disruptions.

✓

STRATEGIC PLAN OVERVIEW

The Strategic Plan will reflect RTA’s internal strategic vision, changing conditions, and community input. The Plan will include analyses of existing conditions, priority corridors, capital projects, infrastructure repair, transit technology, and new mobility. A transit needs assessment will highlight strengths, weaknesses, trends, opportunities, and other key issues. The planning team will also create prioritized strategies to achieve key recommended objectives. These will include considerations of equity, sustainability, funding scenarios, infrastructure needs, public-private partnerships, transit network, fare policies, and costs.

💬

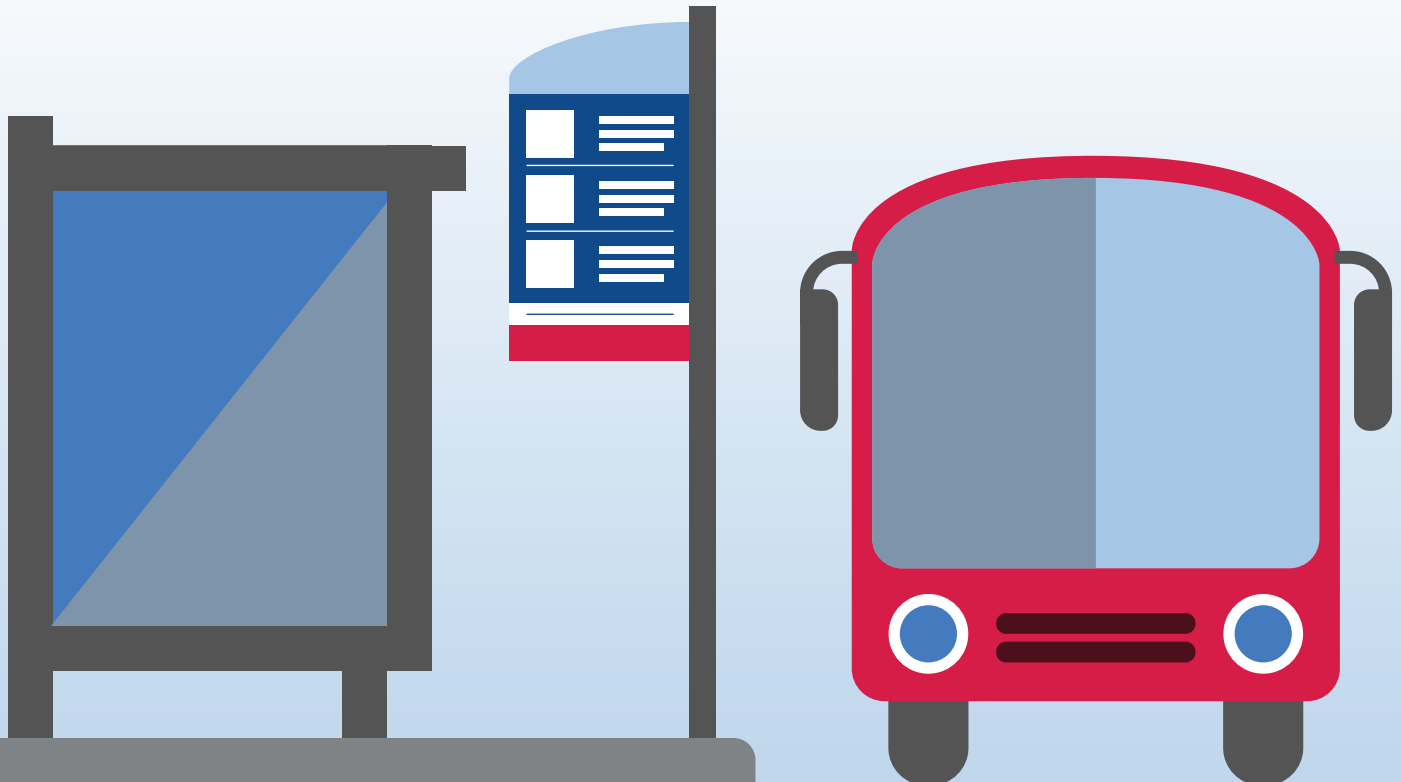
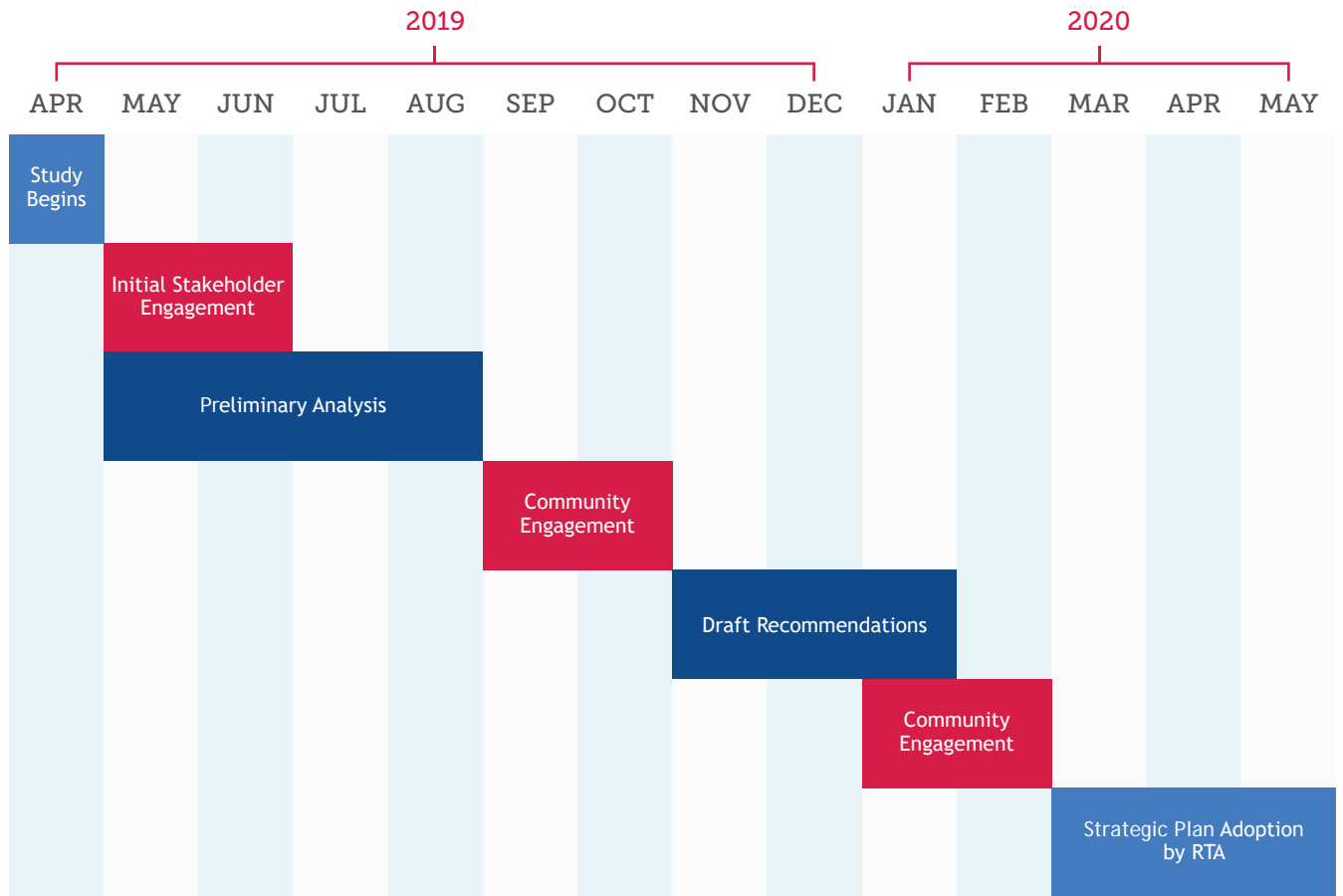
STAKEHOLDER ENGAGEMENT

While there are many technical aspects to this project, this effort relies on successful communication and collaboration among stakeholders to collectively identify the appropriate path forward. Stakeholder and public engagement includes multifaceted outreach and input among diverse constituencies at the beginning, middle, and end of the study.

A final Strategic Plan will outline RTA’s key strategies to the year 2030. The “Framework for the Future” will guide RTA’s community impact and innovative plan for the years ahead.



SCHEDULE



Agenda

Project: Strategic Plan Update

Subject: RTA and City of Cleveland Stakeholder Meeting

Date: Tuesday, May 21, 2019

Time: 2:00-3:30 pm EST

Location: Dept of Community Development, Room 320 – Administrative Services Conference Room

Attendees:

Name	Organization
Mandy Metcalf	GCRTA
Josh Sikich	HDR
Jason Sudy	HDR
Amy Snell	GCRTA
Maribeth Feke	GCRTA
Tania Menesse	City of Cleveland - Community Development
Freddy Collier	City of Cleveland - Planning
Adam Davenport	City of Cleveland - Planning
Sharonda Whatley	City of Cleveland - Planning
Nickol Calhoun	City of Cleveland - Planning
Anthony Santora	City of Cleveland - Planning
Robin Brown	City of Cleveland - Econ Dev
Matt Gray	City of Cleveland - Sustainability
Trudy Andrzejewski	City of Cleveland - Mayor's Office

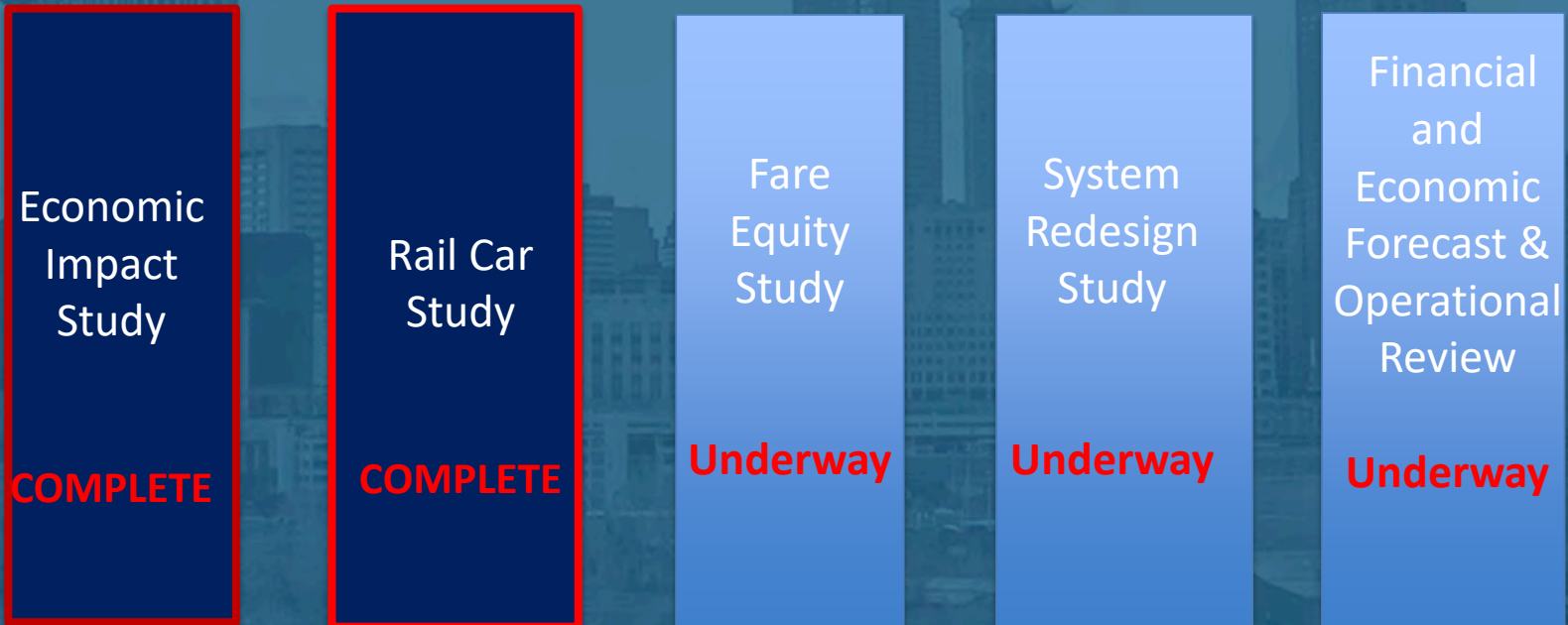
1. Introductions (5 min)
2. RTA Updates (10 min)
3. Strategic Plan Process (10 min)
4. Discussion (30 min)
 - a. Overall Vision
 - b. Planning
 - c. Economic Development
 - d. Sustainability
 - e. Related Transportation Issues
5. Other Items and/or Wrap Up (15 min)
 - a. Data and background information
 - b. Communication and outreach
6. Action Items (5 min)

RTA Strategic Plan Kick off

External Affairs & Advocacy Committee
June 4, 2019

RTA Strategy Development

Strategic Plan: Foundations for the Future





Strategic Plan

Greater Cleveland Regional Transit Authority



Strategic Plan

- February 2019: Board Approved Contract with HDR
- April 2019: Contract Executed
- June 2019: RTA Board Committee Presentation
- January 2020: Board Presentation
- April 2020: Board Adoption of Plan

Strategic Plan Process Overview

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

May 21, 2019



Project Goals

- Deliver a 10-year Strategic Plan
 - Create understanding and build consensus; pull “Pillar Studies” together into a cohesive plan

Strategic Plan: Foundations for the Future

Economic
Impact
Study

Fare Study

Rail Car
Study

Efficiency
Study &
Operational
Review

System
Redesign
Study





Update Vision & Goals

TASK 1

- Review RTA's completed and ongoing studies
- Combine with initial stakeholder input
- Create understanding and build consensus
- Encourage comments from stakeholders
- Revise and refine vision and goals

Assess Transit Needs

TASK 2

- Existing conditions
- Review priority corridors
- Evaluate capital projects
- State of Good Repair
- Transit technology
- New mobility, multi-mobility, first / last mile
- Preliminary findings of transit needs assessment



Identify Priority Strategies

TASK 3

- Actions, programs, and projects based on potential funding scenarios
- Equity
- Sustainability
- Draft 10-year Strategic Plan



Strategies will be prioritized across a variety of issues to highlight RTA priorities.



- Strategy outcomes tied to goal-related performance metrics
- Costs, funding mechanisms, benefits
- Key Considerations:
 - Achieving State of Good Repair
 - State-of-the-Art Infrastructure
 - Developing High Frequency Core Network and Priority Corridors
 - Address Fares and Fare Collection
 - Deliver Modest Service Expansion
 - Opportunities for Public-Private Partnerships
 - Definition of Recommended Improvements for Priority Corridors
 - Opportunity Routes Network
 - Influencing Development to Support Transit Ridership
 - Prioritization of Recommendations of Bus System Review

Stakeholder and Public Engagement

TASK 4

Proactive Meetings to Actively Engage Stakeholders



BOARD OF TRUSTEES



EXECUTIVE MANAGEMENT



INTERNAL STEERING COMMITTEE



EXTERNAL STAKEHOLDER ADVISORY COMMITTEE



COMMUNITY ADVISORY COMMITTEE, CLEVELANDERS FOR PUBLIC TRANSIT

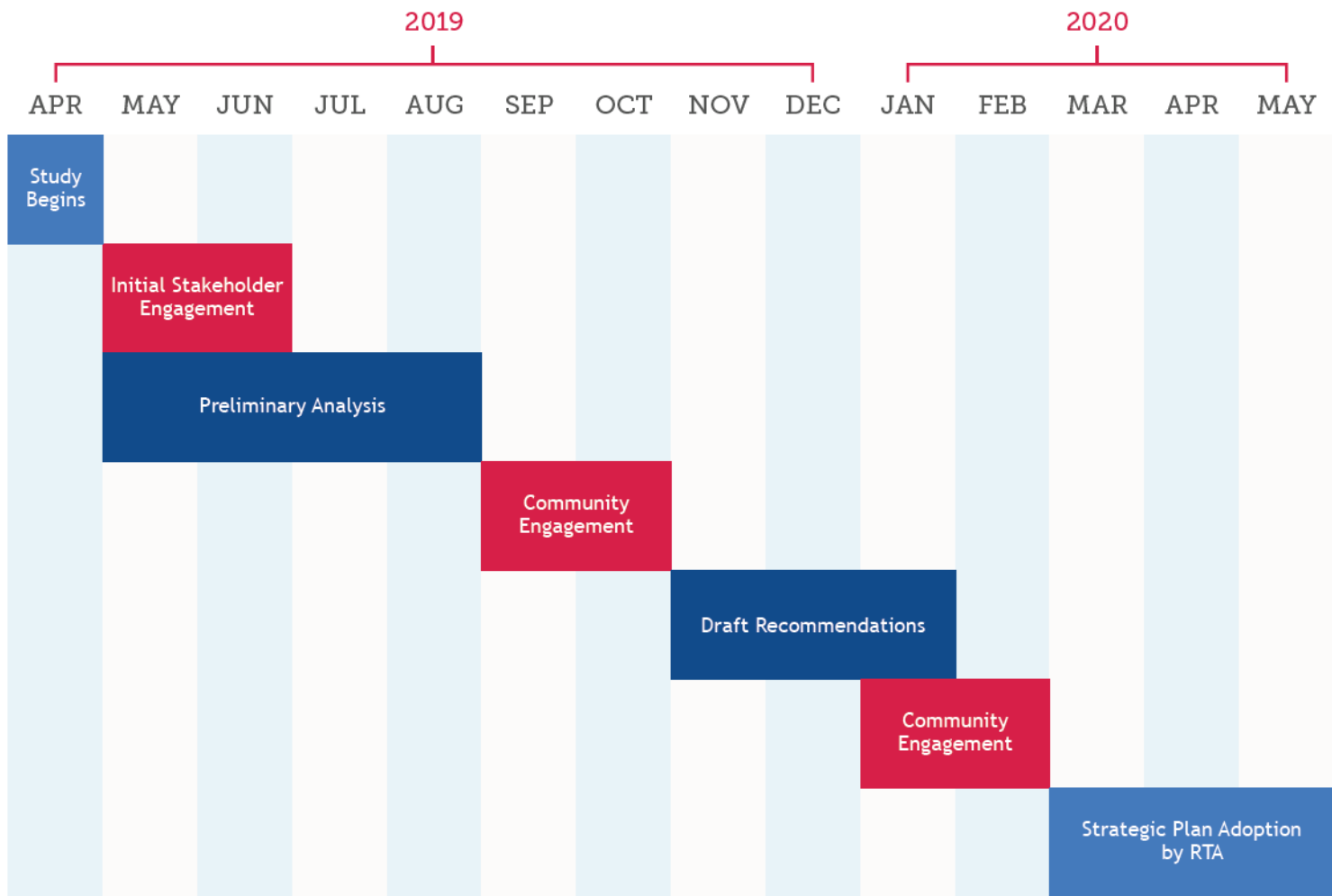


CITY OF CLEVELAND, NOACA, CUYAHOGA COUNTY, COMMUNITY LEADERS

Final Plan & Project Management

TASK 5 & TASK 6

- Compile key highlights and technical memos
- Deliver a final 10-year Strategic Plan
- Submit a project management plan showing proposed work plan and schedule
- Follow QA/QC process
- Monthly project meetings
- Status report and invoicing



Potential Key Themes

SHARED VISION

- Public Trust
- Collaboration

TRANSIT EVOLUTION

- Mobility Integration
- Future-proof

FUNDING

- Financial Stability
- Transportation as Economic Driver

VALUES

- Customer Service
- Environmental Sustainability
- Equity





What is your vision?



Meeting Agenda

Project: Greater Cleveland Regional Transit Authority - Strategic Plan Update

Subject: External Stakeholder Committee Meeting

Date: Tuesday, June 04, 2019

Time: 1:00 – 2:00 pm EST

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Attendees:

Name	Organization
Greg Bieler	Metro Health
Jim Sonnhalter	County Planning
Jerry Hourigan	Tri-C
Tom McNair	Ohio City Inc.
Calley Mersmann	City Planning Commission
Mackenzie Makepeace	ULI (RMS)
Tony Toth	ODOT – D12
Mandy Metcalf	GCRTA
Annie Pease	University Circle Inc.
Dominic Mathew	Fund for Our Economic Future
José Feliciano	GCRTA
Emily Thompson	Burton Bell Carr
Mike Foley	Cuyahoga County Office of Sustainability
Ursula McVey	Cuyahoga County
Wayne Mortensen	Cleveland Neighborhood Progress
Josh Sikich	HDR
Jason Sudy	HDR
Amy Snell	GCRTA
Maribeth Feke	GCRTA

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to Project and Purpose of Meeting	Maribeth Feke
2	Overview of Strategic Planning Process	Josh Sikich
3	Stakeholder Input and Feedback	Jason Sudy

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholder Committee Meeting

Date: Wednesday, June 05, 2019

Time: 11:00– 12:00 EST

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Brian Temming	GCRTA
Sieara Williams	GCRTA
Eric Vukmanic	GCRTA
Nick Biggar	GCRTA
Jacob Kabelan	GCRTA
Jarrett Davis	GCRTA
Dro Sohrabian	GCRTA
D’Von Qay	GCRTA
Mandy Metcalf	GCRTA
Eric Johnson	GCRTA
Josh Sikich	HDR
Jason Sudy	HDR
Amy Snell	GCRTA
Maribeth Feke	GCRTA

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Overview of Strategic Planning process	Josh Sikich
3	Discussion with internal stakeholders	Jason Sudy

Agenda

Project: Strategic Plan Update

Subject: RTA and NOACA Meeting

Date: Tuesday, June 04, 2019

Time: 4:00-5:00 pm EST

Location: NOACA - 1299 Superior Ave., Cleveland OH 44114

Attendees:

Name	Organization
Mandy Metcalf	GCRTA
Josh Sikich	HDR
Jason Sudy	HDR
Amy Snell	GCRTA
Maribeth Feke	GCRTA
Leila Bouabdellaoui	HDR
Kathy Sarli	NOACA
Kelley Britt	NOACA
Grace Galluci (by phone)	NOACA

1. Introductions (5 min)
2. RTA Updates (10 min)
3. Strategic Plan Process (10 min)
4. Coordination with NOACA Transit Needs Assessment (10 min)
5. Communication with NOACA councils and committees (10 min)
6. Data and background information (5 min)
7. Action Items (5 min)

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholders – IT Update

Date: Wednesday, July 17, 2019

Time: 1:00– 2:00PM EDT

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Pete Anderson	GCRTA
Wes Goodwin	GCRTA
Chris Orlando	GCRTA
Maribeth Feke	GCRTA
Amy Snell	GCRTA
Mandy Metcalf	GCRTA
Courtney	GCRTA
Ben Pierce	HDR
Jason Sudy	HDR

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Update on IT initiatives	Pete Anderson and Chris Orlando
3	Discussion with internal stakeholders	Jason Sudy

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholders – LTK Fare Study Update

Date: Wednesday, July 17, 2019

Time: 3:00– 4:00PM EDT

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Joel	GCRTA
Maribeth Feke	GCRTA
Amy Snell	GCRTA
Mandy Metcalf	GCRTA
Jose	GCRTA
Courtney	GCRTA
Rick Halvorsen (on phone)	LTK
Ben Pierce	HDR
Jason Sudy	HDR

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Update on LTK study	Joel and Rick
3	Discussion with internal stakeholders	Jason Sudy

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholders – Radio System Update

Date: Wednesday, July 17, 2019

Time: 11:00AM-12:00PM EDT

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Mike Lively	GCRTA
Mike Schipper	GCRTA
Maribeth Feke	GCRTA
Amy Snell	GCRTA
Mandy Metcalf	GCRTA
Courtney	GCRTA
Ben Pierce	HDR
Jason Sudy	HDR

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Update on Radio System initiatives	Mike Lively and Mike Schipper
3	Discussion with internal stakeholders	Jason Sudy

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholders – Sustainability

Date: Wednesday, July 17, 2019

Time: 10:00AM-11:00AM EDT

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Heather Valentine	GCRTA
Maribeth Feke	GCRTA
Amy Snell	GCRTA
Mandy Metcalf	GCRTA
Courtney	GCRTA
Ben Pierce	HDR
Jason Sudy	HDR

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Update on Sustainability Initiatives	Heather Valentino
3	Discussion with internal stakeholders	Jason Sudy

Meeting Agenda

Project: GCRTA Strategic Plan Update

Subject: Internal Stakeholders – Vehicle Technology

Date: Wednesday, July 17, 2019

Time: 9:00AM-10:00AM EDT

Location: GCRTA - 1240 West 6th Street Cleveland, Ohio 44113

Name	Organization
Dan Dietrich	GCRTA
Dan	GCRTA
Jeffrey Adams	GCRTA
Maribeth Feke	GCRTA
Amy Snell	GCRTA
Mandy Metcalf	GCRTA
Courtney	GCRTA
Ben Pierce	HDR
Jason Sudy	HDR

	<i>Topic</i>	<i>Facilitator</i>
1	Introduction to project and purpose of meeting	Maribeth Feke
2	Update on Vehicle Technology	Dan Dietrich
3	Discussion with internal stakeholders	Jason Sudy



RTA Strategic Plan Stakeholder Meeting



October 23, 2019 | 10:30 A.M. - 12:00 P.M.

i

RTA Strategic Plan Stakeholders,

In June, RTA invited you to participate in the Strategic Planning process as a RTA Stakeholder and Advisor to our Study Team. The plan will set the course for RTA from 2020-2030 and will incorporate all of the other planning studies that are underway.

This is the second meeting of our group. At this meeting, a summary of the Strategic Planning Process results to date and a schedule for completion will be highlighted. RTA seeks your feedback on the strategic initiatives that will drive this plan.

As you know, participation is vital to the adoption of a successful transportation plan for RTA. Transportation is facing critical changes requiring new vision to create a transportation system that meets the changing needs of the public.

I hope you will join us at the RTA Main Office Boardroom located at 1240 W.Sixth Street for this important meeting.

Please RSVP your attendance to me prior to the meeting (mfeke@gcrta.org) and also feel free to contact me if you have any questions. I look forward to seeing you on October 23rd.

Maribeth Feke

Director of Programming and Planning



Agenda



Project: Strategic Plan: Framework for the Future

Subject: External Stakeholder Meeting

Date/Time: Oct. 23, 2019 10:30-12:00

Location: GCRTA 1240 W 6th Street, Cleveland, OH 44113

1. Introductions (10 min)
2. Overview (5 minutes)
3. Strategic Plan Process and Initial Input (15 min)
4. Planning Exercise and Discussion
 - a. Issues and Outcomes (20 min)
 - b. Prioritization (20 min)
5. Wrap-up and next steps (10 min)



Agenda



Project: Strategic Plan: Framework for the Future

Subject: Internal Stakeholder Meeting

Date/Time: Oct. 23, 2019 1:30-3:00

Location: GCRTA 1240 W 6th Street, Cleveland, OH 44113

1. Introductions (10 min)
2. Overview (5 minutes)
3. Strategic Plan Process and Initial Input (15 min)
4. Planning Exercise and Discussion
 - a. Issues and Outcomes (20 min)
 - b. Prioritization (20 min)
5. Wrap-up and next steps (10 min)



RTA Strategic Plan



PLEASE SPEND FIVE MINUTES TO TELL US
WHAT YOU THINK! REFRESHMENTS PROVIDED!

i

The Greater Cleveland Regional Transit Authority (RTA) is developing a Strategic Plan to the year 2030. Through input from a variety of stakeholders, employees, and the public, this planning process will help guide RTA in navigating the upcoming decade.

Please stop by at these times to help shape the future of RTA!

Tuesday, January 28, 2020: CBM 11:30 am-1:30 pm

Tuesday, January 28, 2020: Rail 2:30-4:30 pm

Wednesday, January 29, 2020: Hayden 5:30-7:30 am

Wednesday, January 29, 2020: Triskett 2:00-4:00 pm

Wednesday, January 29, 2020: Paratransit 3:30-5:30 pm

Your participation is vital to the creation of a successful transportation plan for RTA. Transportation is facing critical changes requiring new vision to create a transportation system that meets the changing needs of the public.

Can't make it? No problem! A quick survey will be available for you to fill out at these locations until February 12, 2020.



Strategic Plan Your Ideas

The Greater Cleveland Regional Transit Authority (RTA) is developing a Strategic Plan to the year 2030. This planning process will help guide RTA in navigating the upcoming decade. Thank you for your feedback!

1. Ten potential goals for RTA are listed below. **PLEASE CHECK THE TOP THREE** that are most important:

- CUSTOMER EXPERIENCE:** Dependable, clean, fast, and seamless transportation.
- FINANCIAL STABILITY:** Responsible steward of public funds.
- STATE OF GOOD REPAIR:** Enhancement, preservation and maintenance of infrastructure and assets.
- TECHNOLOGICAL INNOVATION:** Integration of new technologies and evolving mobility options.
- ECONOMIC PROSPERITY:** Enabling economically sustainable land use and investment in strategic employment and population centers.
- ACCESS:** Increased access to jobs, education, and civic life.
- COLLABORATION:** Creative solutions to mobility challenges and opportunities for transit oriented development.
- EQUITY:** Provide equitable transit services that benefit disadvantaged individuals and communities.
- ENVIRONMENTAL SUSTAINABILITY:** Clean transportation and shifting travelers away from single occupancy vehicles.
- TRANSPARENCY:** Instill public confidence as an accountable, well-run institution.

2. What do you do for RTA? _____ 3. What district do you work at? _____

4. How many years have you worked at RTA? _____

5. What is your top recommendation(s) for improving the RTA *employee* experience?

6. What is your top recommendation(s) for improving the RTA *customer* experience?

Please use this page for any additional thoughts. Thank you for your time.

Thank you for your feedback!





Community Meetings: Strategic Plan

RTA is planning for the future and needs your help! We are creating a strategic plan for capital improvements and enhancing the customer experience through the year 2030. Your ideas will help shape RTA for years to come.



i

Thursday, February 20, 2020

12:00 p.m. - 1:00 p.m.

RTA Main Office Building

Board Room

1240 W. 6th St., Cleveland, OH 44113

Monday, February 24, 2020

6:00 p.m. - 8:00 p.m.

Hofbrauhaus Cleveland

Festaal Room, 2nd Floor Hermit Club

1550 Chester Ave., Cleveland, OH 44114

Tuesday, February 25, 2020

12:30 p.m. - 2:30 p.m.

CornUcopia Place

7201 Kinsman Rd., Cleveland, OH 44104

Tuesday, February 25, 2020

5:00 p.m. - 7:00 p.m.

Collinwood Rec Center

Meeting Room

16300 Lakeshore Blvd., Cleveland, OH 44110

Wednesday, February 26, 2020

11:00 a.m. - 1:00 p.m.

Cleveland Public Library

Learning Commons (2nd Floor)

525 Superior Ave., Cleveland, OH 44114

Wednesday, February 26, 2020

5:30 p.m. - 7:30 p.m.

Parma Branch - Cuyahoga County Public Library

Conference Room A

6996 Powers Blvd., Parma, OH 44130

Monday, March 9, 2020

6:00 p.m. - 8:00 p.m.

Lakewood Woman's Club Pavilion

14532 Lake Ave., Lakewood, OH 44107

Tuesday, March 10, 2020

6:30 p.m. - 8:00 p.m.

Cleveland Hts. Community Center

Room 1A/1B

1 Monticello Blvd., Cleveland Hts., OH 44118

Wednesday, March 11, 2020

5:30 p.m. - 7:30 p.m.

Gemini Center - Fairview Park Recreation

Oak Room

21225 Lorain Rd., Fairview Park, OH 44126

Meetings are open houses that allow you to come when it fits your schedule. A presentation will also be given 15 minutes after the meeting start time and repeated one hour later. Enjoy light refreshments and children's activities!



Visit riderta.com/strategicplan for additional information and updates.

Strategic Plan Community Meetings

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

Spring 2020



Strategic Plan Project Goals

Deliver a 10-year Strategic Plan

- ✓ Create understanding and build consensus; pull “Pillar Studies” together into a cohesive plan

Strategic Plan: Framework for the Future

Economic
Impact
Study

Fare Study

Rail Car
Study

Efficiency
Study &
Operational
Review

System
Redesign
Study



Strategic Planning Process

- Update Vision & Goals
- Preliminary Findings: Assess Transit Needs
- Identify Priority Strategies
- Stakeholder and Public Engagement
- Spring 2019 to Spring 2020

riderta.com/strategicplan



Stakeholder and Public Engagement

Proactive Meetings to Actively Engage Stakeholders



BOARD OF TRUSTEES



EXECUTIVE MANAGEMENT



RTA INTERNAL STEERING COMMITTEE



EXTERNAL STAKEHOLDER ADVISORY COMMITTEE



COMMUNITY ADVISORY COMMITTEE



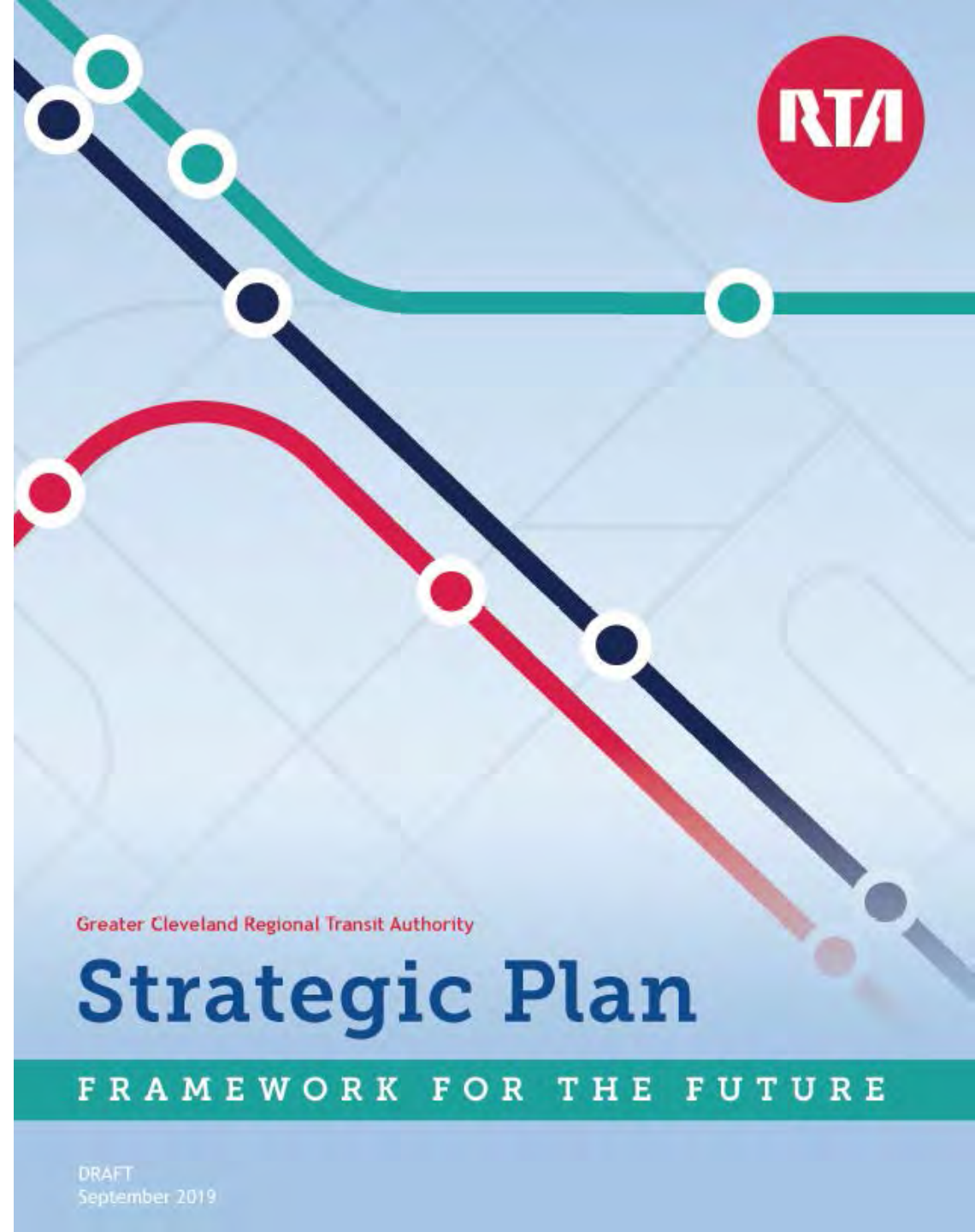
PUBLIC INPUT



Final Plan

- ✓ Compile key highlights and technical information
- ✓ Deliver 10-year capital planning and customer enhancement Strategic Plan

riderta.com/strategicplan



Preliminary Goals



Preliminary Goals

1

CUSTOMER EXPERIENCE

RTA will provide dependable, clean, fast, and seamless transportation that creates a positive experience for RTA customers.

2

FINANCIAL STABILITY

RTA will be a responsible steward of public funds by providing exceptional services cost-effectively.

3

STATE OF GOOD REPAIR

RTA will enhance, preserve and maintain its infrastructure and assets.

4

TECHNOLOGICAL INNOVATION

RTA will lead in its integration of new technologies and evolving mobility options to enhance the transportation experience for customers, RTA employees, businesses and visitors.

5

ECONOMIC PROSPERITY

RTA will be the transportation backbone that moves the economy forward and improves the quality of life of county residents by enabling economically sustainable regional land use and development and reinforcing investment in strategic employment and population centers.

Preliminary Goals

6

ACCESS

RTA will facilitate increased access to jobs, education, and civic life.

7

COLLABORATION

RTA will work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for transit oriented development.

8

EQUITY

RTA will continue to provide equitable transit services that benefit disadvantaged individuals and communities.

9

ENVIRONMENTAL SUSTAINABILITY

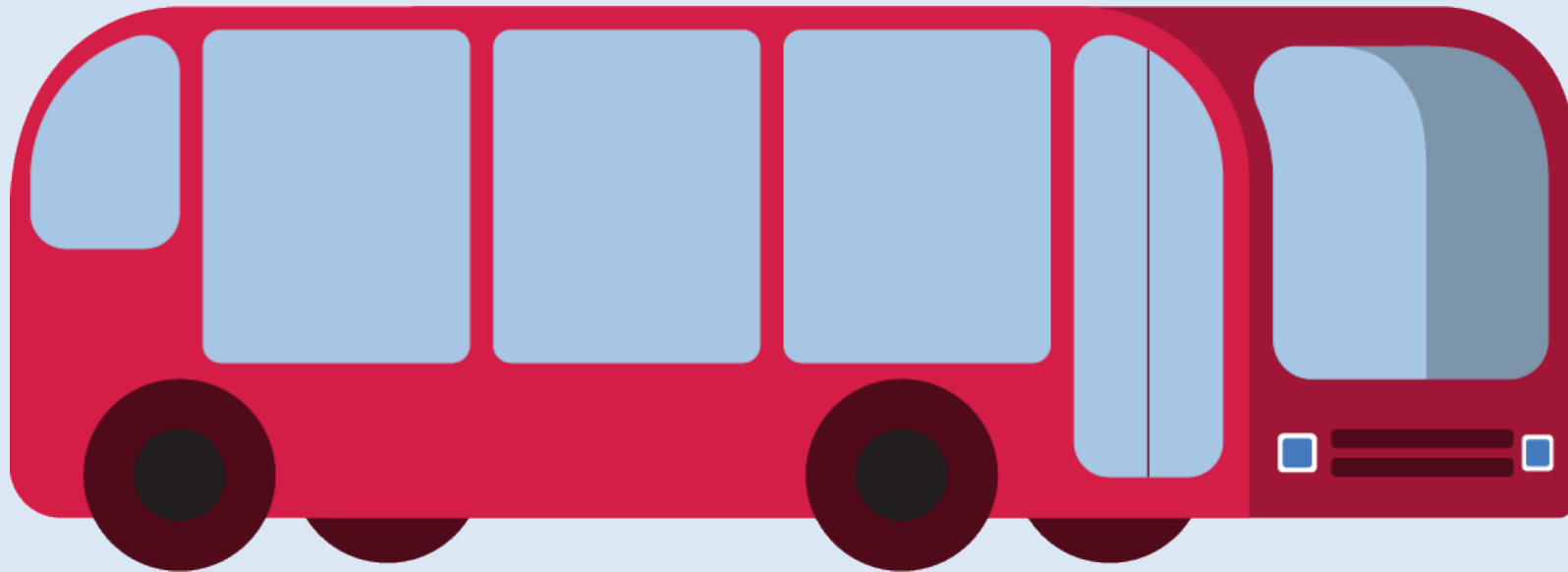
RTA will reduce greenhouse gas emissions in the region by providing clean transportation and shifting travelers away from single occupancy vehicles.

10

TRANSPARENCY

RTA will instill public confidence as a well-run institution that is accountable to its customers, employees, and taxpayers.

Preliminary Findings

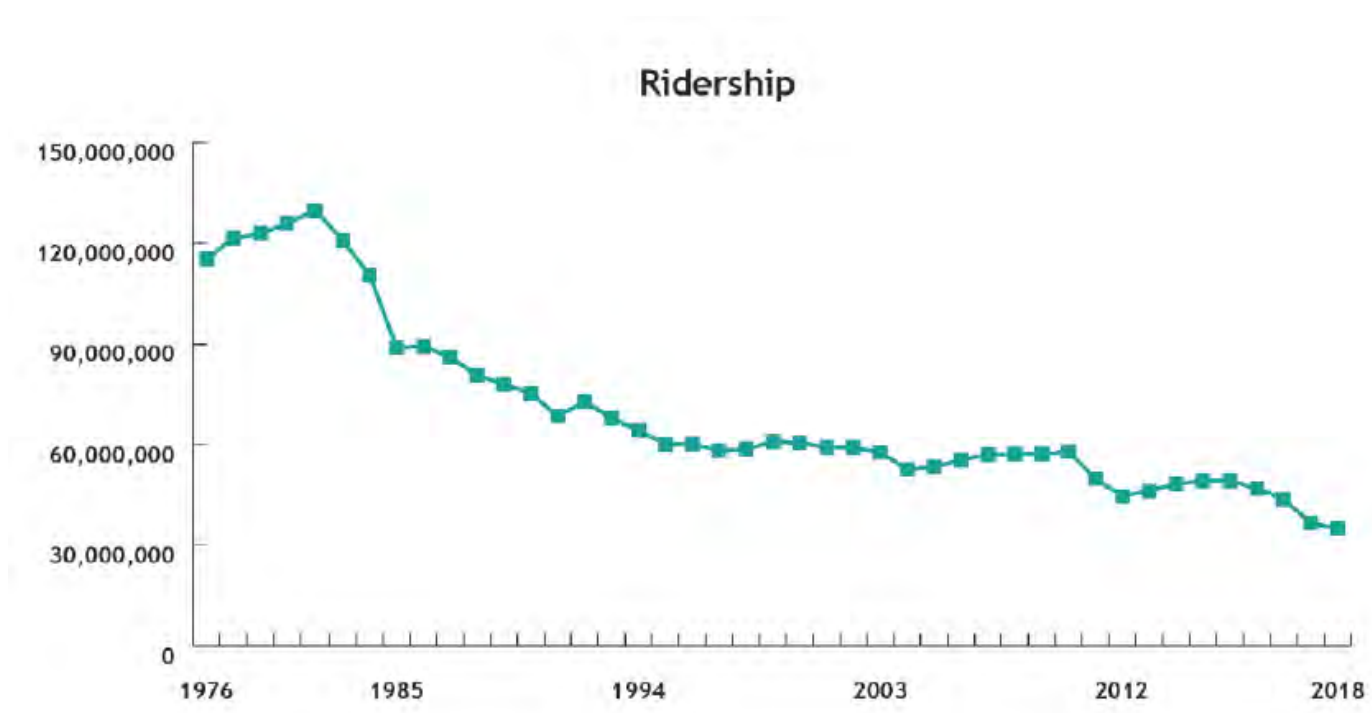


RTA Economic Impact

- ✓ Critical to the economic success of region and to the well being of people who live and work here
- ✓ RTA's impact on local employment totals \$485.8 million, measured in annual earnings brought home by those who depend on RTA transit services to get to work
- ✓ Impact on Cuyahoga County property values is \$2.2 billion
- ✓ Annual savings to passengers who choose to ride RTA rather than use their own transportation is \$51.8 million

Decreasing Ridership

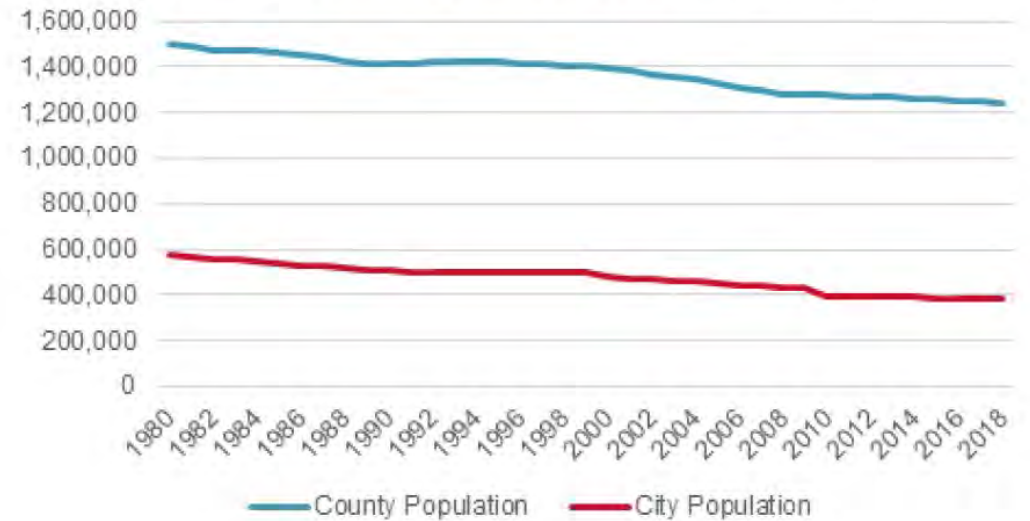
Fewer people are riding RTA than ever before



External Factors: Examples

- Cuyahoga County lost tens of thousands of residents and jobs in the past decade
- Jobs locations shifting outward
- Aging population

Cuyahoga County and Cleveland Population

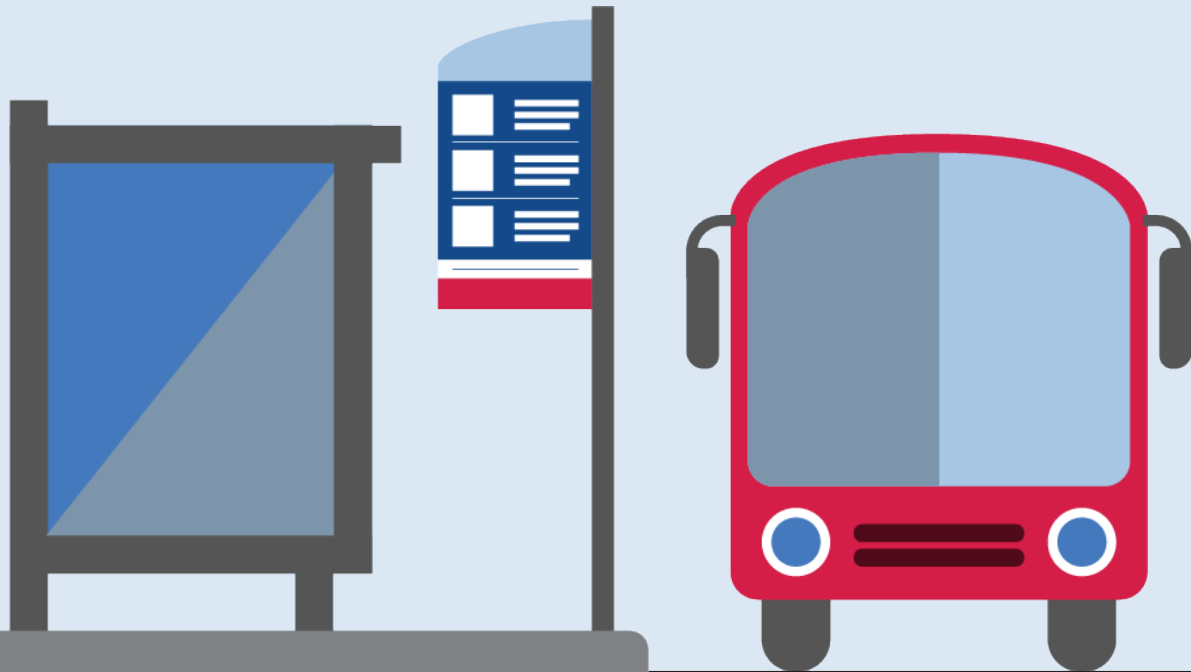


Internal Factors: Examples

- Level of transit service decreased
- Factors under control of RTA influence ridership, such as fares, customer communication, on-time performance

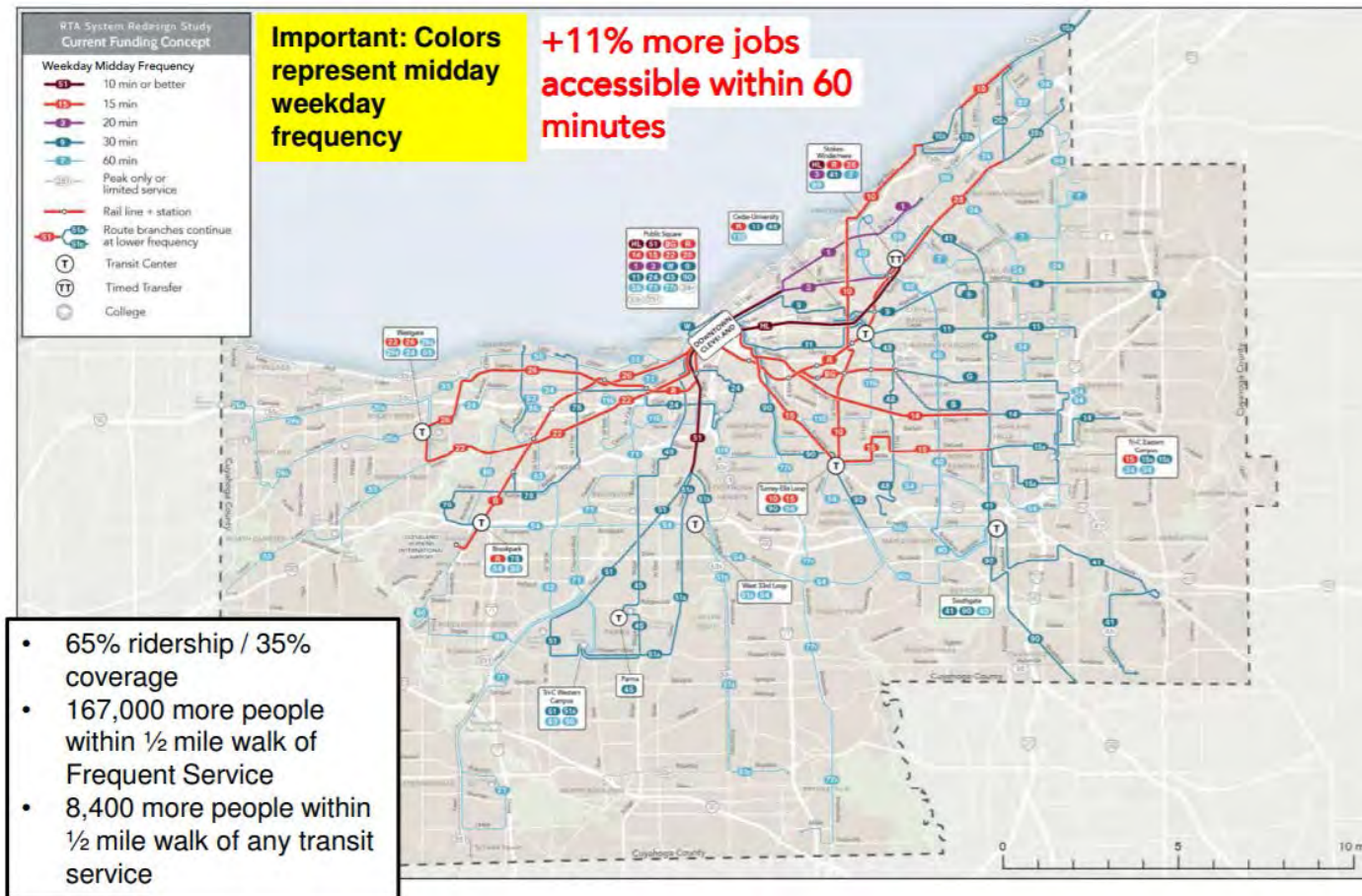


Potential Ideas for Improvements



Access: System Redesign

- As recommended in Dec. 2019, RTA should shift to the Current Funding Concept
- Expanded Funding Concept provides basis for future potential



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X				X	X		X		



Collaboration: Corridor Improvements for Faster Buses

- New federal guidance recently approved for red pavement bus-only lanes
- Transit Signal Priority
- Queue jumps



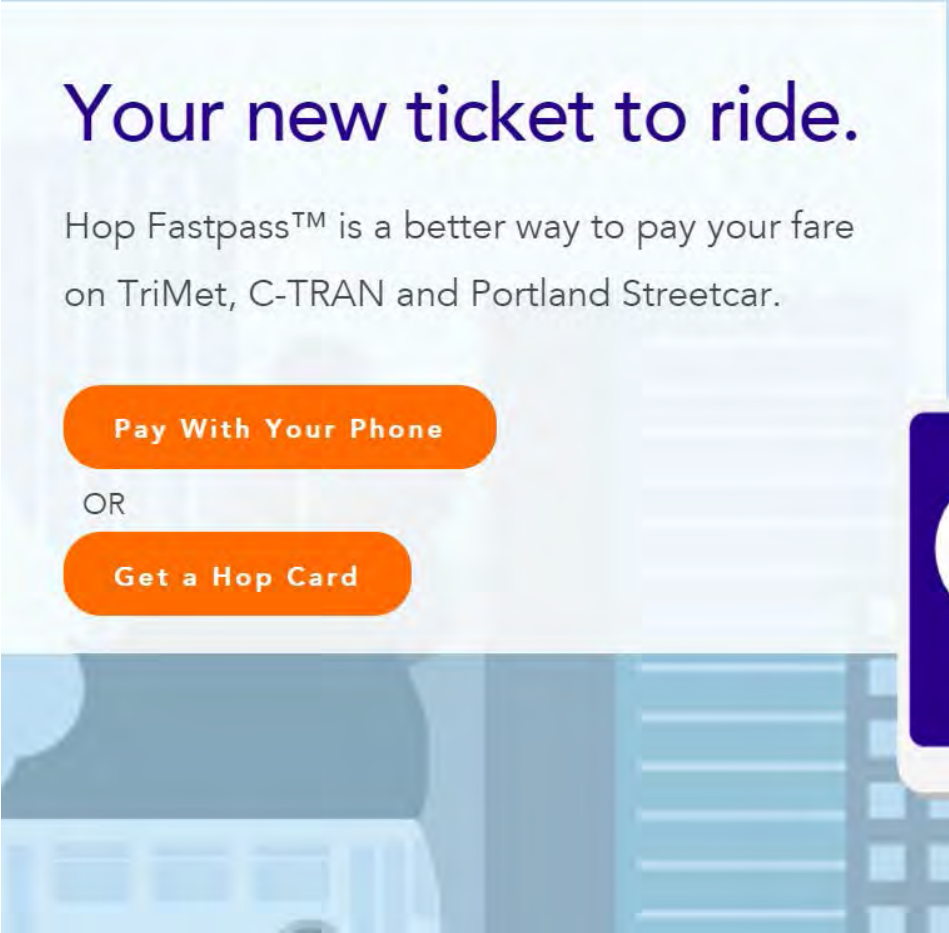
Source: streetsblog.org



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X	X	X	X		X	X	X		

Customer Experience: Fare Payment Improvements

- Account based, contactless
- Stored Value
- Fare capping
- Open architecture
- Open payments
- Seamless to customer



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X			X	X	X		X		

State of Good Repair: Rail car replacement

- Heavy-rail fleet replaced within 5 years
- Light-rail fleet replaced within 10 years



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X	X	X	X	X					

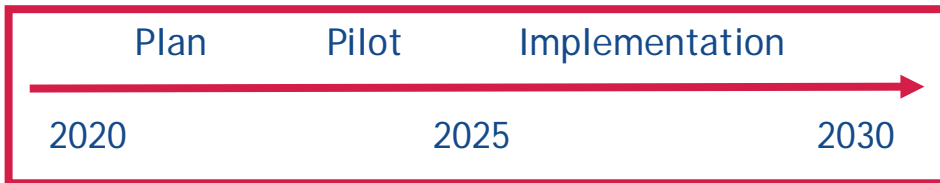


Environmental Sustainability: Electric Buses

- Quiet, comfortable
- Lower global warming emissions than diesel and compressed natural gas
- Zero tailpipe emissions for healthier neighborhoods



Source: proterra.com



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X		X	X				X	X	



Equity:

Vulnerable Populations

- Increase transit frequency and capacity for those who need it most
- Address needs of women and aging population
- Policy and safety improvements



Source: inquirer.com

Planning and Implementation

2020

2025

2030

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X				X	X	X	X		



Technology: Autonomous Shuttles

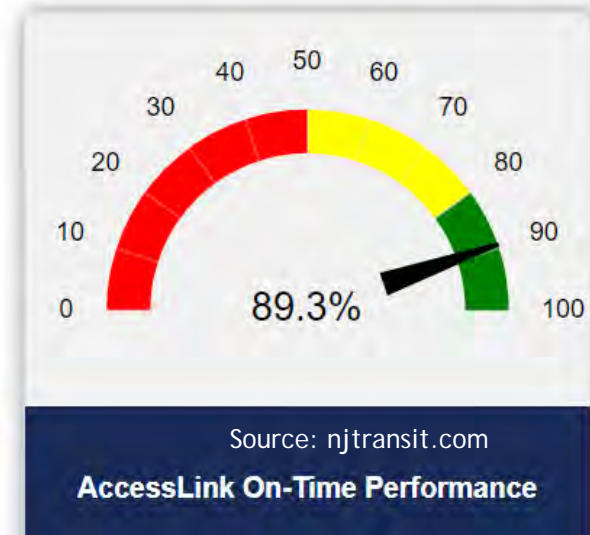
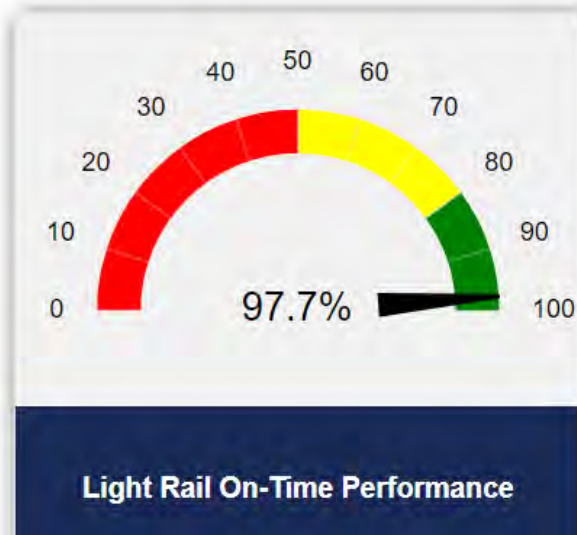
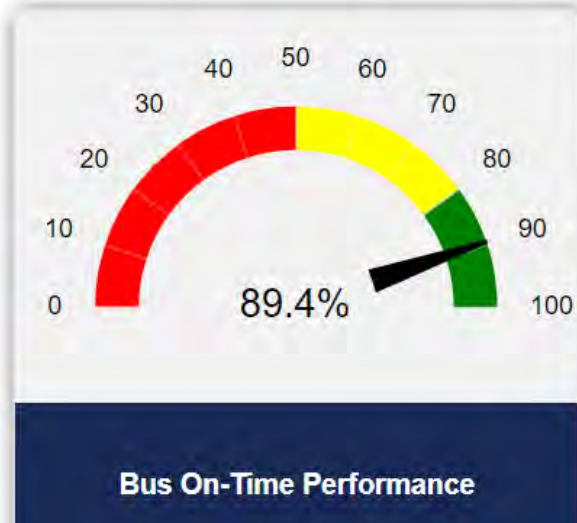
- First/last mile option
- Testing in Ohio, U.S., and worldwide
- Pilot program to understand opportunities and constraints
- New RTA radio system



Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X			X	X	X	X	X	X	

Transparency: Public Online Dashboard

- Improve transparency and accountability
- Display metrics that impact customer confidence
- Build public trust

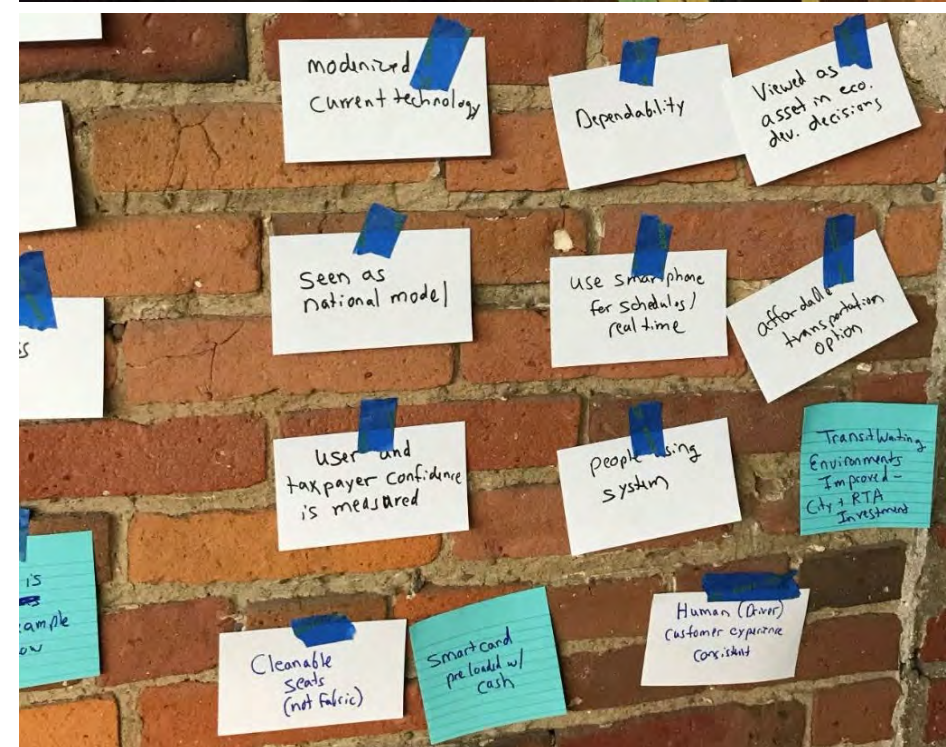


Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X			X						X



Your Ideas!

- Lighting near bus stops
- Better transfer connections
- Cleaner buses
- Reliable, on-time service
- More service to destinations that matter to you
- Better real-time arrival info
- Extend train lines to more places
- Quicker boarding to move transit faster
- And more. Help us plan the future!





Join the conversation on **Mentimeter**
using your smart phone.

Strategic Plan

riderta.com/strategicplan



Meeting Agenda

Project: Greater Cleveland Regional Transit Authority - Strategic Plan Update

Subject: NOACA Stakeholder Meeting

Date: Monday, March 30, 2020

Time: 3:00 – 4:00 pm EST

Location: Remote Meeting using Webex

Attendees:

Name	Organization
Mandy Metcalf	GCRTA
Josh Sikich	HDR
Jason Sudy	HDR
Amy Snell	GCRTA
Maribeth Feke	GCRTA
Kelley Britt	NOACA
Peter Voorhees	AECOM
Scott Baker	AECOM
Stephanie Amoaning-Yankson	AECOM
Ken Sislak	AECOM
Tim Rosenberger	WSP

1. Introductions
2. GCRTA Strategic Plan presentation
3. NOACA Regional Plan presentation
4. Discussion



Project: Strategic Plan: Framework for the Future

Subject: Stakeholder Meeting

Date/Time: July 16, 2020 1:30-3:00 PM

Location: Webex Digital Meeting

- <https://meethdr.webex.com/meethdr/j.php?MTID=mb9feb0e2b1867bde9b87bf0681183509>
- If needed: Meeting number (access code): 146 120 3115; Meeting password: nAbXwimZ578

1. Introductions
2. Recap
 - a. Planning Process
 - b. Considerations of Recent Events
 - c. Preliminary Findings
3. Stakeholder & Public Engagement
 - a. Engagement Process
 - b. Strategy Identification & Prioritization
4. Recommendations
 - a. Geographic Focus
 - b. Key Initiatives
5. Discussion

Attendees:

- Josh Sikich
- Mandy Metcalf
- Eric Vukmanic
- Greg Zucca
- Heather Valentino
- Jarrett Davis
- Monica Busam
- Dominic Matthew
- GCRTA Engineering
- Kristie Cox
- Krystal Sierra
- Maribeth Feke
- Mike Foley
- Mike Cermak
- Matthew Moss
- Flounsay Caver
- Matt Schmidt
- Dro Sohrabian
- Chris Urban
- Calley Mersmann
- Annie Pease
- Jim Sonnhalter
- Jason Sudy
- Ricardo Leon
- Joyce B.
- Planning Commission
- Ian Andrews
- Jose Feliciano
- Audrey Gerlach
- Eric Johnson
- Michael Mears
- Sara Meier
- Mel Leach
- Kelley Britt
- Marka Fields
- Mackenzie Makepeace
- John P



Agenda



Project: Strategic Plan: Framework for the Future

Subject: RTA and City of Cleveland Stakeholder Meeting

Date/Time: August 31, 2020 2:00-3:30 PM

Location: Digital Meeting

Attendees:

Tania Menesse	City of Cleveland - Community Development
Freddy Collier	City of Cleveland - Planning
Adam Davenport	City of Cleveland - Planning
Sharonda Whatley	City of Cleveland - Planning
Nickol Calhoun	City of Cleveland - Planning
Anthony Santora	City of Cleveland - Planning
Robin Brown	City of Cleveland - Economic Development
Matt Gray	City of Cleveland - Sustainability
Trudy Andrzejewski	City of Cleveland - Mayor's Office
Robert Kennedy	Director, Cleveland Airport System
David Ebersole	Director of Economic Development
Edward Rybka	Chief of Regional Development
Josh Sikich	HDR
Jason Sudy	HDR
Maribeth Feke	GCRTA
Amy Snell	GCRTA

1. Introductions
2. Recap
 - a. Planning Process
 - b. Considerations of Recent Events
 - c. Preliminary Findings
3. Stakeholder & Public Engagement
 - a. Engagement Process
 - b. Strategy Identification & Prioritization
4. City of Cleveland collaboration
5. Recommendations

- a. Geographic Focus
 - b. Key Initiatives
6. Discussion

RTA Strategic Plan: Framework for the Future
Customer Focused, Community Engaged

Strategic Plan

Presentation to GCRTA Board of Trustees

External & Stakeholder Relations & Advocacy Committee

GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

October 6, 2020



Project Leaders Presenting Today



Josh Sikich, AICP
Project Manager



Jason Sudy
Engagement Lead



Strategic Plan Process

Deliver a 10-year Strategic Plan

- ✓ Create understanding and build consensus; pull “Pillar Studies” together into a cohesive plan

Strategic Plan: Framework for the Future

Economic
Impact
Study

Fare Equity
Analysis

Rail Car
Study

Efficiency
Study &
Operational
Review

System
Redesign
Study



Strategic Planning Process

- Update Vision & Goals
- Preliminary Findings: Assess Transit Needs
- Identify Priority Strategies
- Stakeholder and Public Engagement



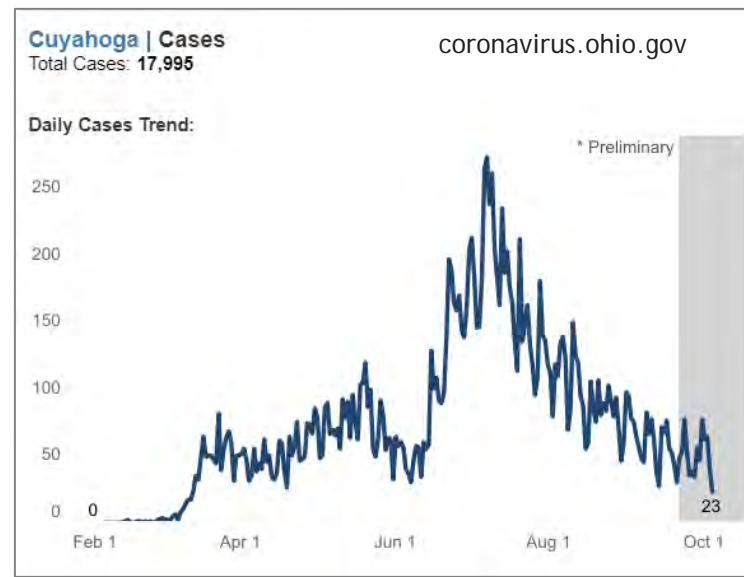
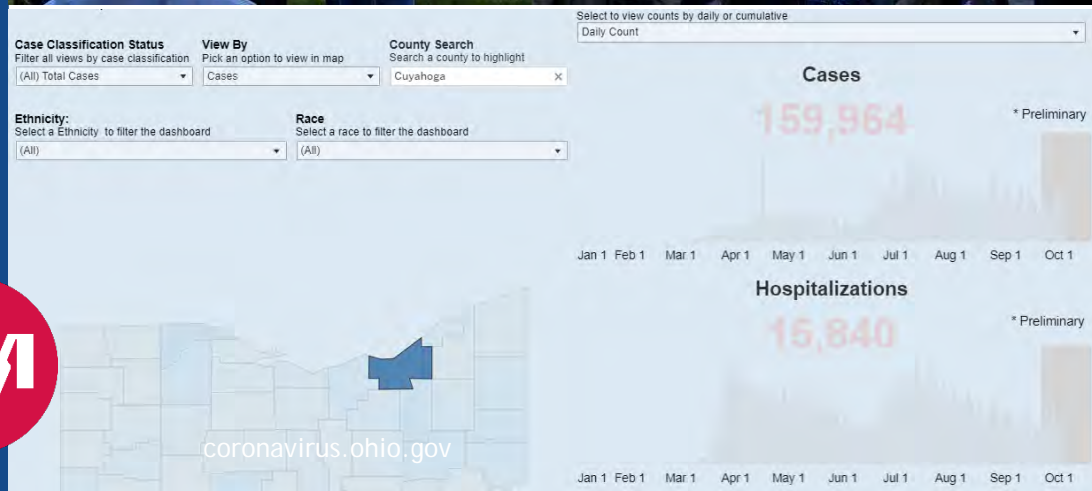
riderta.com/strategicplan





Considerations of Recent Events

- COVID-19 Pandemic
- Economic Downturn
- Calls to Action for Social Justice



COVID-19

RTA actions are national best practices. Examples include:

- Enhanced cleaning and disinfecting of vehicles and facilities
- Barriers and separators for operators and staff
- Personal protective equipment
- Collaboration with Health departments and Centers for Disease Control

Recent American Public Transportation Association research:

- No direct correlation has been found between use of urban public transit and transmission of COVID-19
- Public transit ridership in multiple cities shows no correlation with the rise or fall of local COVID-19 cases
- Mask wearing has been shown to be effective at reducing person-to-person transmission

*Strategic Plan:
Framework for the Future*

*Customer Focused
Community Engaged*



Customer Focused & Community Engaged



CUSTOMER EXPERIENCE

RTA will provide dependable, clean, fast, and seamless transportation that creates a positive experience for RTA customers.

EQUITY

RTA will continue to provide equitable transit services that benefit disadvantaged individuals and communities.

ACCESS

RTA will facilitate increased access to jobs, education, and civic life.

STATE OF GOOD REPAIR

RTA will enhance, preserve and maintain its infrastructure and assets.

FINANCIAL STABILITY

RTA will be a responsible steward of public funds by providing exceptional services cost-effectively.

Customer Focused & Community Engaged



COLLABORATION

RTA will work with stakeholders to foster creative solutions to mobility challenges and drive opportunities for transit oriented development.

TECHNOLOGICAL INNOVATION

RTA will lead in its integration of new technologies and evolving mobility options to enhance the transportation experience for customers, RTA employees, businesses and visitors.

ECONOMIC PROSPERITY

RTA will be the transportation backbone that moves the economy forward and improves the quality of life of county residents by enabling economically sustainable regional land use and development and reinforcing investment in strategic employment and population centers.

TRANSPARENCY

RTA will instill public confidence as a well-run institution that is accountable to its customers, employees, and taxpayers.

ENVIRONMENTAL SUSTAINABILITY

RTA will reduce greenhouse gas emissions in the region by providing clean transportation and shifting travelers away from single occupancy vehicles.

Preliminary Findings



RTA Existing Conditions



RTA economic impact - \$485M on local employment & \$2.2 billion on Cuyahoga County property values



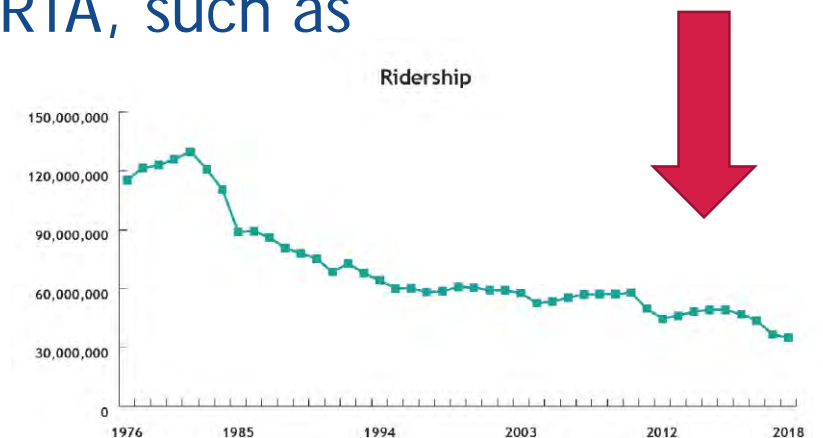
Decreasing ridership



External factors influence RTA such as population/job loss & shifting job locations outward



Internal factors are those under control of RTA, such as fares, customer communication, on-time performance



SWOT Analysis

Before COVID-19

STRENGTHS

- As a legacy transit system with robust history, local residents and businesses are aware of what RTA is. The brand recognition is high.
- Staff members have deep institutional knowledge.
- Rail lines and BRT services provide a backbone for additional system improvements.
- Past investments provide value to customers
- New leadership paves the way for innovative changes.

WEAKNESSES

- Passenger experience is degraded by unreliability and a poor image.
- Infrastructure needs are not being met as highlighted by the breakdown of the Red Line in summer 2019.
- Ridership has decreased for several years.
- Technology adoption is slow compared with peers.

SWOT Analysis

Before COVID-19

OPPORTUNITIES

- Job hubs drive transit ridership and the largest hub remains downtown where transit service is greatest.
- Partnership is increasing among public and private agencies on transportation issues.
- Disruptive technologies and business models can be harnessed to advance RTA goals.

THREATS

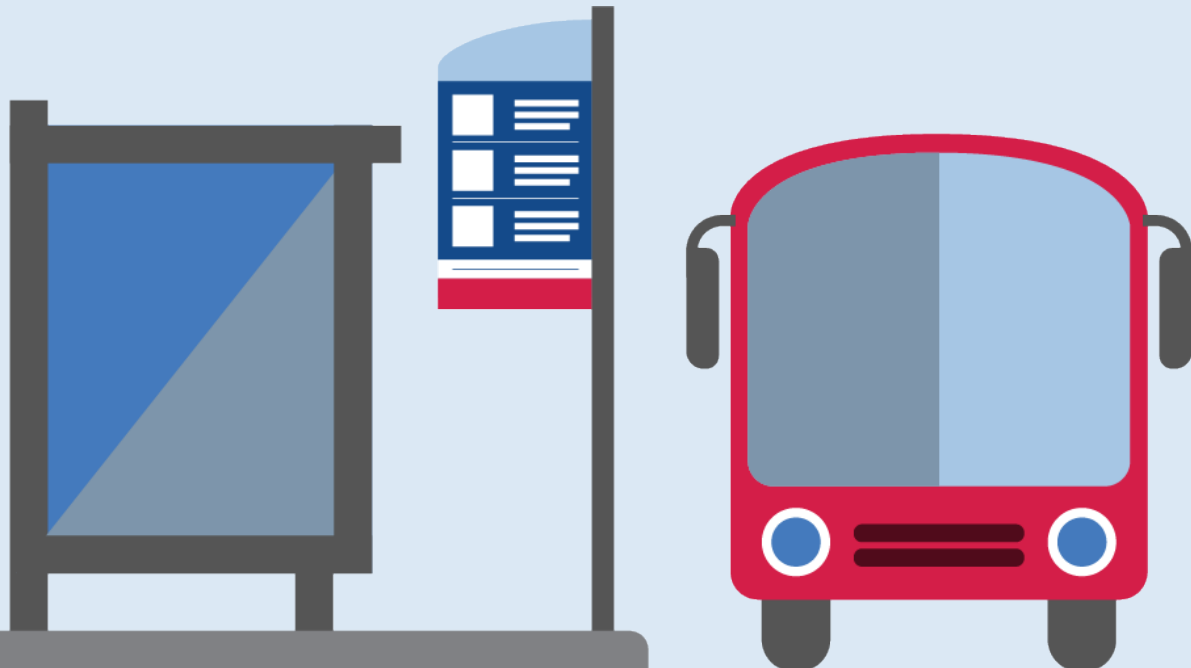
- The region is losing population and jobs.
- Competition for travel service in urban areas is increasing with new options providing door-to-door service for relatively cheap costs to customers.
- Job locations are spreading across Cuyahoga County and the region.

SWOT Analysis

After COVID-19 – Additional Issues

- *Uncertain travel demand for all modes*
- *Health concerns*
- *Work from home*
- *Economic decline*
- *Social issues can be catalyst for change*
- *Increased realization of importance of transit for essential services and workers*
- Temporary versus Long-Term Impacts
 - Thinking ten years ahead, virus will likely be overcome in time
 - However, past economic recessions have had long-term effects on Northeast Ohio
 - Transit remains backbone of economic opportunity for those who need it most

Stakeholder & Public Engagement



Engagement

- Three stakeholder input periods
 - *External Stakeholders*
 - *Internal Stakeholders*
- Pillar Study Engagement
 - *Three surveys, over 6,250 responses*
 - *Approximately 40 public meetings attended by over 300 people*
- Bus Operators, Vehicle Maintenance, and Other Staff
- Public Engagement - Meetings, Website, Surveys



WE WANT TO HEAR FROM YOU

Please fill out an online survey to help plan ideas for RTA's future.

COMMUNITY MEETINGS

RTA is planning for the future and needs your help! We are creating a strategic plan for capital improvements and enhancing the customer experience through the year 2030. Your ideas will help shape RTA for years to come.

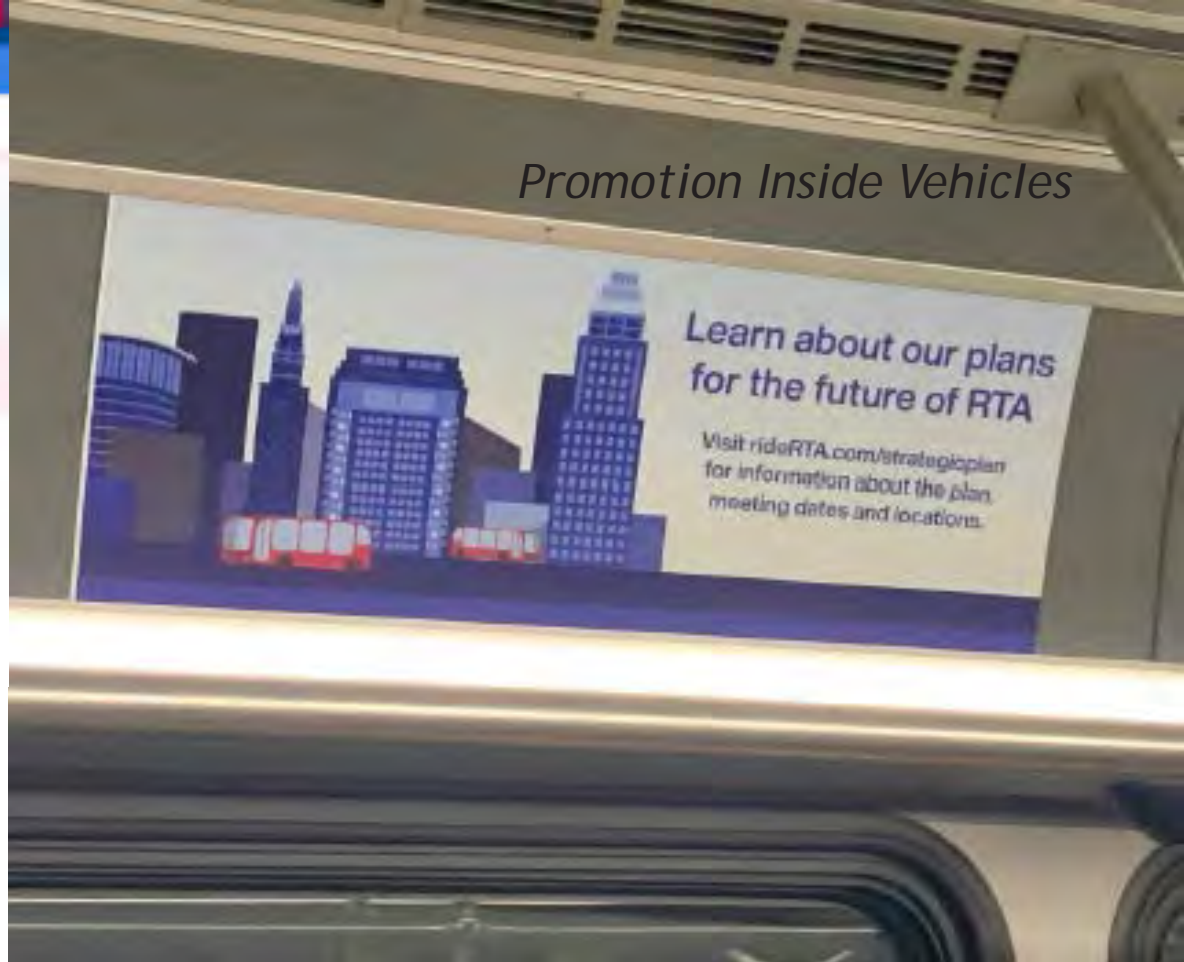
To view the presentation from the meeting, please [click here](#).

Thursday, February 20, 2020 -
 12:00pm to 1:00pm
 RTA Main Office

Monday, February 24, 2020 -
 6:00pm to 8:00pm
 Hofbrauhaus Cleveland

- **Nine Public Meetings:**
Feb. 20 - Mar. 11, 2020
- **Online & In-Person Engagement Yielded Thousands of Responses from Participants**

Promotion Inside Vehicles



ACTIVITIES



Top 3 Goals



Rank Strategies



Map Out Your Day



Big Idea



Arts & Crafts

Engagement - Top Strategies

FORTY-NINE STRATEGIES IDENTIFIED

TOP 3 STRATEGIES FOR ALL PUBLIC RESPONDENTS

- Increase frequency of bus service on existing key routes, while maintaining existing coverage
- Identify additional funding to meet existing and future transit needs
- Better link people to jobs



Engagement - Top Strategies

Top ten strategies were similar among online surveys and public meeting participants

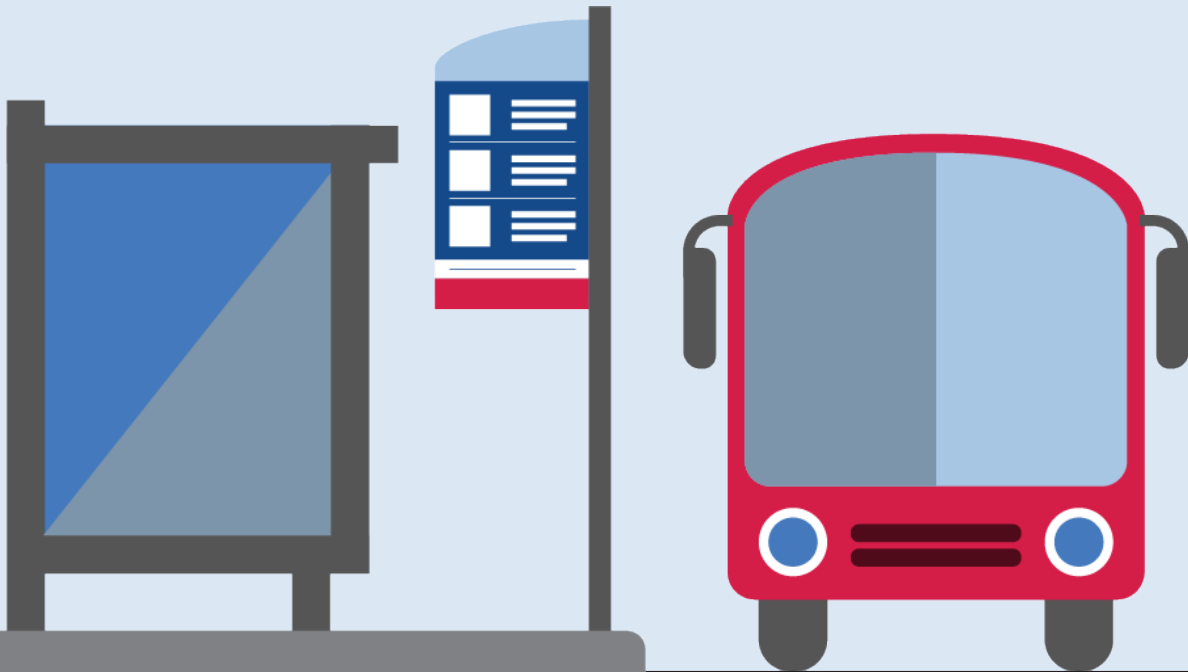
TOP 10 STRATEGIES FROM THE ONLINE SURVEY

1. Increase frequency of bus service on existing key routes, while maintaining existing coverage
2. Identify additional funding to meet existing and future transit needs
3. Better link people to jobs

TOP 10 STRATEGIES FROM THE PUBLIC MEETINGS

1. Identify additional funding to meet existing and future transit needs
2. Better link people to jobs
3. Increase frequency of bus service on existing key routes, while maintaining existing coverage

Recommendations: Geographic Focus



Priority Corridor Update

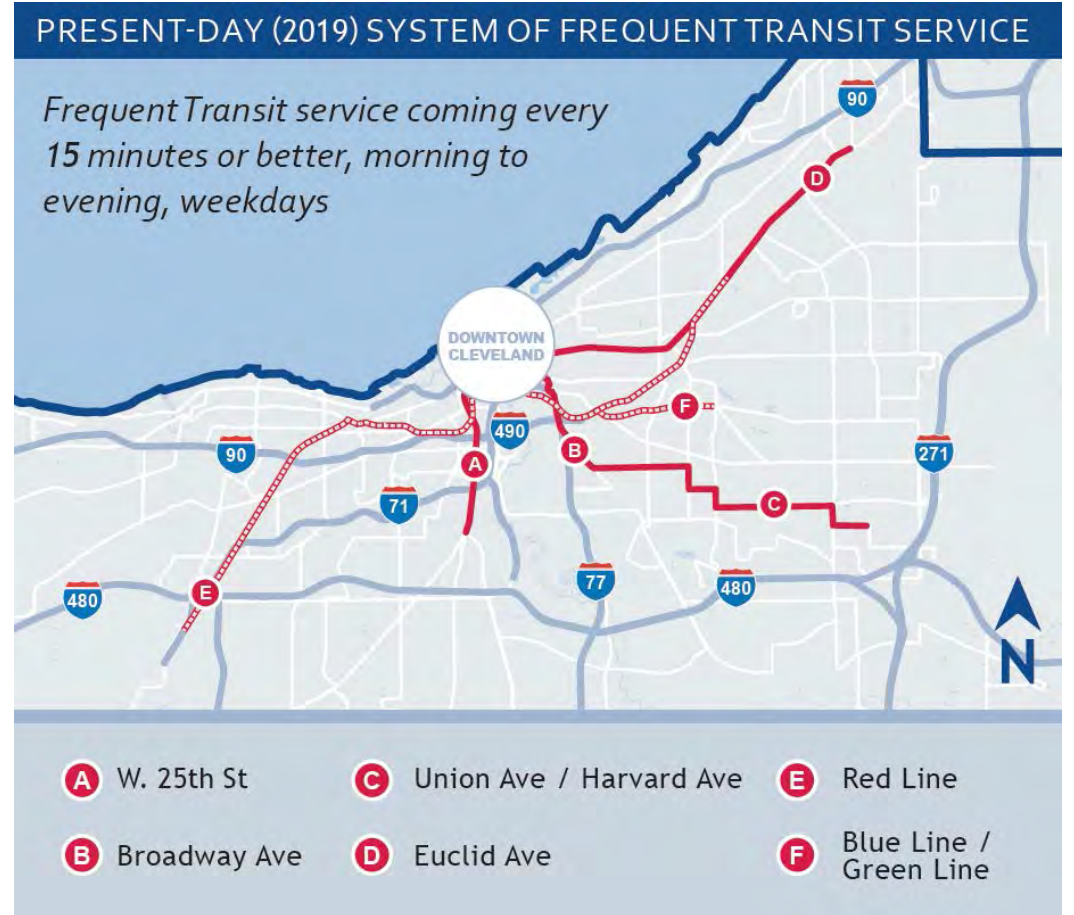
Update Priority Corridors from Previous Strategic Plan

- Previous RTA Strategic Plan identified several Priority Corridors that were recommended for investment
- Priority Corridors brought focus to locations where transit-oriented development could be emphasized in partnership with local stakeholders



Priority Corridor Update

- Need to increase cohesion between infrastructure development & service frequency



Priority Corridor Update

Network of urban corridors with frequent service

- Increase cohesion between infrastructure development & service frequency
- Emphasize connections among corridors to create network
- New corridors offer new opportunities
- Enhance consistency among pillar studies
- Several priority corridors remain unchanged



Priority Corridor Update

Network of urban corridors with frequent service

- Focus on transit need of populations with lower incomes, lower educational attainment, & higher unemployment
- Focus on places where transit works best and can help provide a leg up to those who need it most
- Multiple connections provide seamless transfers and shorter travel times
- Partnership for transit-oriented development

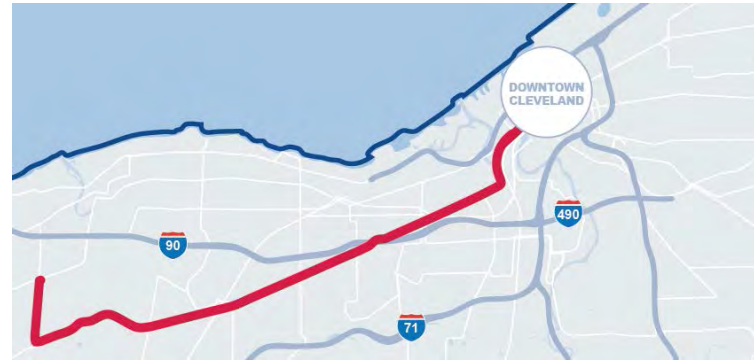


Priority Corridor Update

Data Driven to Deliver Equitable Service

Lorain Avenue Example

- Levels of income
- Educational attainment
- Unemployment rate



LAND USE	
Land Use	Percent Area
RESIDENTIAL	54%
RETAIL	16%
APARTMENT	7%
TRANSPORTATION	6%
PASSIVE GREEN SPACE	6%
Other (<5% Each)	12%

KEY CONNECTIONS	
Lorain Ave	High Frequency Intersection
Lorain Ave & W 25th St	W 25th St Priority Corridor And Red Line at W 25th - Ohio City
To Lorain Ave & W 65th St	Red Line at W 65th - Loraine
To Lorain Ave & W 117th St	W 117th St Priority Corridor
To Lorain Ave & W 140th St	Red Line at West Park
To Lorain Ave & W 210th St	N/A
To W 210th St & Centre Ridge Rd	Detroit Ave Priority Corridor

INCOME

\$37,211
Median Household Income

\$23,151
Per Capita Income

\$17,213
Median Net Worth

BUSINESS

1,227
Total Businesses

14,097
Total Employees

KEY FACTS

31,456
Population

37.2
Median Age

13,495
Households

7.6%
Unemployment Rate

EDUCATION

18%
No High School Diploma

24.37%
High School Diploma

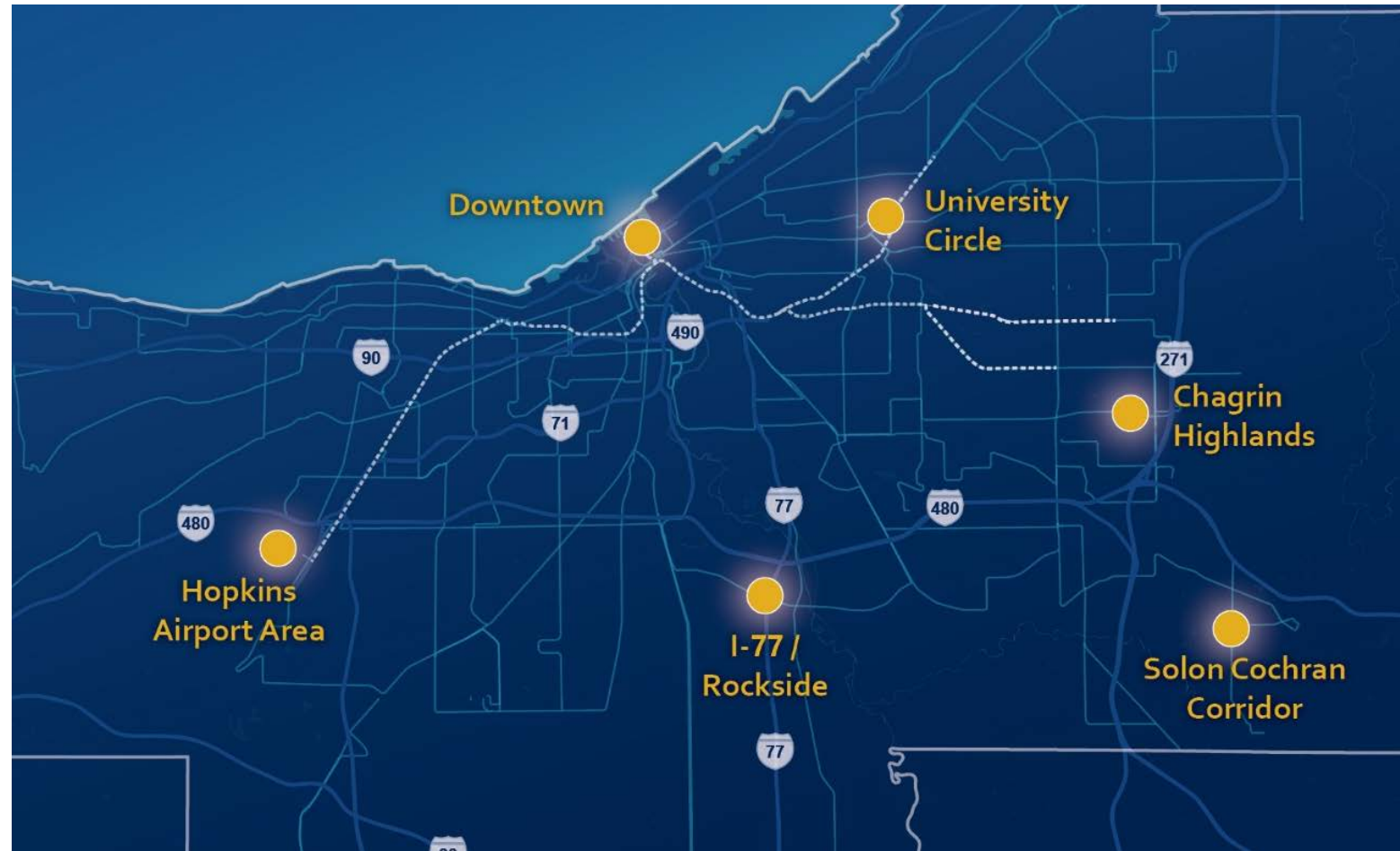
29%
Some College

23%
Bachelor's/Grad/Prof Degree

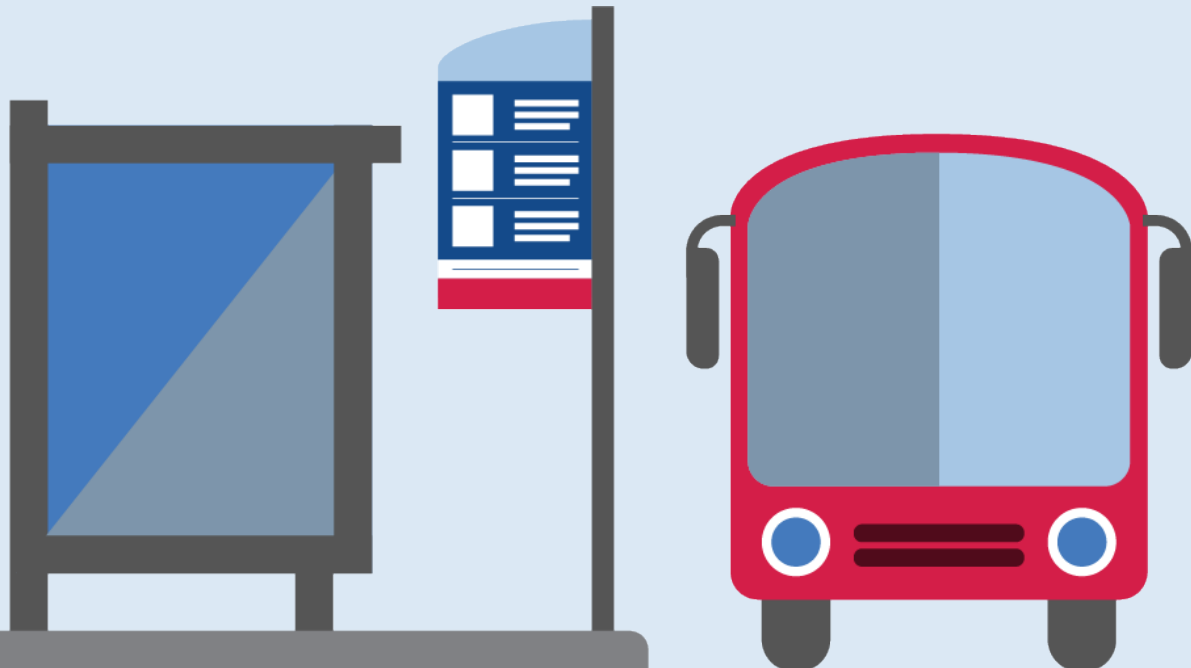


Outlying Job Hubs

- Focus on need of workers with lower incomes, lower educational attainment, & higher unemployment compared to County average
- Challenging transit environments require shared funding with job providers to be determined through collaboration
- Opportunities for pilot projects to improve equitable access
- Requires definition of success that measures job access and retention, not high ridership



Recommendations: Key Initiatives for the Future



Key Initiatives: Create Framework for the Future

- Highlight prioritized recommendations of study based upon data gathered from:
 - *10 Goals*
 - *Preliminary Findings Analysis*
 - *Identification of 49 Strategies*
 - *Pillar Studies*
 - *Stakeholder Input*
 - *Public Engagement*
- Provide a guide for enhancing the customer experience and pursuing capital improvements to create a framework for the future

Key Initiatives

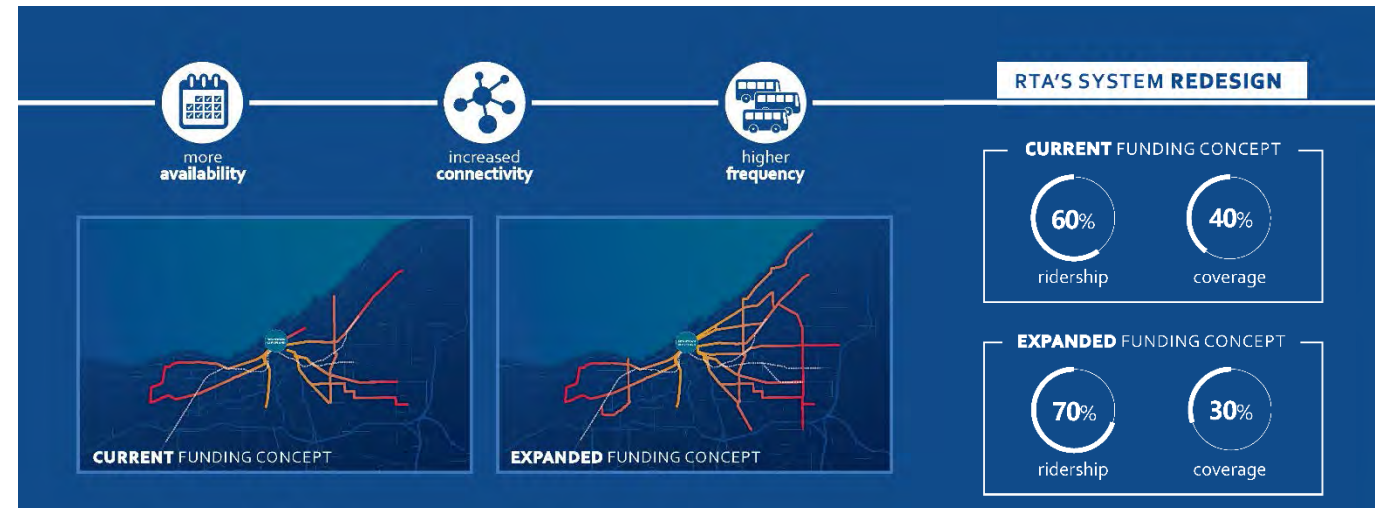
- ✓ Improve Where and When Buses Travel
- ✓ Improve How Streets Function
- ✓ Improve How Customers Pay
- ✓ Improve Passenger Safety and Comfort
- ✓ Engage with Emerging Technology, Data, and New Mobility
- ✓ Address Funding Challenges
- ✓ Partner to Support Vibrant Communities and Access to Job Centers

Improve Where and When Buses Travel

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X				X	X		X		

- Implement System Redesign
- Shift to the Current Funding Concept
- Expanded Funding Concept provides basis for future potential

Pandemic Impact: Focus on urban corridors with frequent service improves safe & equitable access to opportunity



TIMEFRAME

Short (2020-2022)

- Make small improvements along the way prior to a large system change
- Implement early wins that improve service while minimizing negative impacts
- Implement Current Funding Concept

Medium (2023-2026)

- Monitor redesign over time - system changes will potentially take three years to mature and establish consistent passenger levels
- Implement Expanded Funding Concept with more frequent corridors and seven day a week consistency

Long (2027-2030)

- Refine routes and schedules to maintain ridership/coverage goals while meeting current needs and addressing feedback

RESPONSIBILITIES

Champion: RTA - Planning and Implementation

Infrastructure and community relations support:

- City of Cleveland
- NOACA
- Cuyahoga County
- ODOT
- Municipalities
- Private and nonprofit partners

OUTCOMES

Current Funding Concept

For the average resident in Cuyahoga County:

- Current Funding Concept will link people to 17% more jobs in under 45 minutes and 11% more jobs in under 60 minutes than the present-day network.

Expanded Funding Concept

For the average resident in Cuyahoga County:

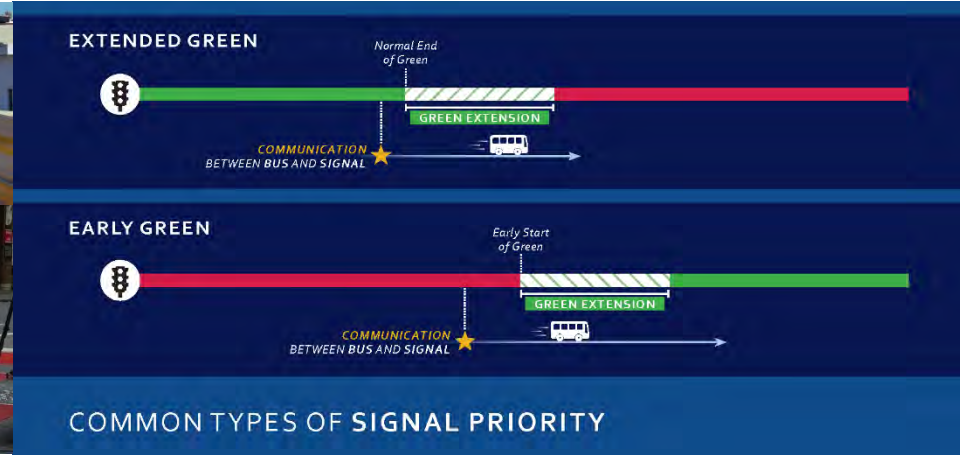
- Expanded Funding Concept will link people to 42% more jobs in under 45 minutes and 38% more jobs within 60 minutes compared to the present-day network.



Improve How Streets Function

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X	X	X	X		X	X	X		

- Prioritize Transit in Street Design
- Allocate appropriate space for buses to travel
- Work with cities to enhance signal systems
- Priority Corridors
- Increase fast and reliable service



Pandemic Impact:
 Opportunities to rethink street operations & transit access are prevalent, as made clear during shutdown



<p>TIMEFRAME</p> <p>Short (2020-2022)</p> <ul style="list-style-type: none"> • Implement and promote early spot improvements that improve service while minimizing negative impacts • Plan four corridors and ten intersections for infrastructure enhancements <p>Medium (2023-2026)</p> <ul style="list-style-type: none"> • Implement four transit corridor enhancement projects • Monitor before and after impacts and obtain ongoing community feedback • Plan four corridors and ten intersections for infrastructure enhancements <p>Long (2027-2030)</p> <ul style="list-style-type: none"> • Implement four more transit corridor enhancement projects • Monitor before and after impacts and obtain ongoing community feedback • Plan four corridors and ten intersections for infrastructure enhancements • Emphasize ongoing corridor planning in conjunction with emergence of driverless vehicles and associated impacts 	<p>RESPONSIBILITIES</p> <p>Planning Champion: RTA</p> <p>Implementation Champion: City of Cleveland</p> <p>Supporting partners:</p> <ul style="list-style-type: none"> • NOACA • Cuyahoga County • ODOT • Municipalities • Private and nonprofit partners • Neighborhood groups 	<p>OUTCOMES</p> <p>Outcomes include:</p> <p>Travel times will be reduced on Priority Corridors. Customer satisfaction will increase, reliability will increase, and agency operating expenses will decrease. Shorter travel times will allow RTA to run the same bus frequency with fewer vehicles. Improving travel time reliability allows RTA to reduce extra time in the schedule, further improving speed, and improving the customer experience.</p>
---	---	--

Improve How Customers Pay

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X		X	X	X	X		X		

- Implement recommendations from Fare Equity Analysis pillar study
- Change RTA fare collection to improve customer experience and better reflect best practices
- Seamless, equitable

Pandemic Impact: Current policies & technology unfortunately have largest negative impact on people with low incomes



TIMEFRAME

Short (2020-2022)

- Improve communications about fare products and how to buy them
- Make 5-Trip Farecards available at more locations, and revise 5-Trip farecards to be fewer trips at the same price per trip
- Adjust Paratransit fares and passes
- Planning, policy development, and procurement for new fare collection system
- Reduce All-Day passes to equal 2 ride fare cost

Medium (2023-2026)

- Launch new fare collection system that is cloud-based and contactless with open architecture, regional multimodal accounts, stored value, fare capping, and open payments
- Launch coordinated mobility app
- Launch public education campaign to create a seamless transition and promote benefits

Long (2027-2030)

- Launch mobility as a service that is nimble and flexible to new modes and business models as autonomous vehicle fleets begin to go into service
- Maintain transit's role as backbone of Priority Corridors in midst of increasing transportation change



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- NOACA
- Private mobility providers



OUTCOMES

Outcomes include:

Short term improvements can improve equity and communications to address findings in Fare Analysis pillar study. A new fare collection system will provide a seamless customer experience that is cloud-based and contactless with open architecture, regional multimodal accounts, stored value, fare capping, and open payments. RTA will be positioned for a changing mobility landscape with an innovative, modern fare system.



Improve Passenger Safety and Comfort

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X		X	X		X		X	X	

- Purchase new rail cars
- Improve transit stops
- Continue to upgrade bus fleet
- Experiment with Zero Emission Vehicles
- Enhance safe and comfortable riding experience



Pandemic Impact:
Increase sanitation & social distancing.



<p>TIMEFRAME</p> <p>Short (2020-2022)</p> <ul style="list-style-type: none"> • Continue and enhance cleaning procedures to address COVID-19 • Continue to provide service with a focus on essential workers getting to jobs at locations such as medical facilities and grocery stores • Provide service with a focus on equity - the Priority Corridors of frequent service include neighborhoods with high levels of poverty, joblessness, and vulnerable health populations • Begin procuring new heavy rail vehicles • Evaluate and improve stop amenities on Priority Corridors during implementation of Current Funding Concept • Pilot ten zero emissions vehicles with support from federal grants and with feedback on passenger comfort <p>Medium (2023-2026)</p> <ul style="list-style-type: none"> • Discontinue the practice of purchasing diesel vehicles • Integrate zero emissions vehicles into bus fleet procurement strategy • Begin procuring light rail vehicles • Delivery of heavy rail vehicles and placement into revenue service • Evaluate and improve stop amenities on Priority Corridors during implementation of Expanded Funding Concept <p>Long (2027-2030)</p> <ul style="list-style-type: none"> • Delivery of light rail vehicles and placement into revenue service • Move from CNG to zero emission vehicles 	<p>RESPONSIBILITIES</p> <p>Champion: RTA</p> <p>Supporting partners:</p> <ul style="list-style-type: none"> • City of Cleveland • NOACA • Cuyahoga County • Power utilities • Municipalities • Private and nonprofit partners • Neighborhood groups 	<p>OUTCOMES</p> <p>Outcomes include:</p> <ul style="list-style-type: none"> • Increased passenger comfort to resume or continue riding during and after COVID-19 pandemic • New rail car fleet • Upgraded bus fleet • Transition away from purchasing diesel buses • Transition to zero emission vehicle purchases • Enhanced customer experience as a result of transit stop improvements
---	---	--

Engage with Emerging Technology, Data, and New Mobility

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X			X	X	X	X	X	X	X

- Refocus using technology as way to improve the customer experience & equity
- Experiment with connected vehicles
- Improve infrastructure
- Enhance real-time info
- Invest in data security & sharing
- Pilot mobility management

Pandemic Impact: Tech is helping transit agencies navigate new challenges



TIMEFRAME

Short (2020-2022)

- Implement sharing of open information pertinent to customers on public-facing online dashboard
- Establish policies with regional partners for data management and common standards for mobility providers on public right-of-way
- Conduct a six-month pilot of an autonomous microshuttle and obtain ongoing community feedback

Medium (2023-2026)

- Incorporate dedicated power and dedicated communications into new infrastructure projects in association with partners
- Integrate mobility-as-a-service in order to deliver optimal travel solution to customers among all available modes
- Collaborate with employees on workforce development and training for new technologies
- Vision Zero Implementation

Long (2027-2030)

- Refine policies and practices as driverless technology advances, such as minimizing zero occupancy vehicles on transit corridors
- Continue to lead and leverage technological innovation in service of community goals



RESPONSIBILITIES

Champion: RTA

Supporting partners:

- NOACA
- City of Cleveland
- Cuyahoga County
- Utility providers
- Municipalities
- Private and nonprofit partners
- Neighborhood groups



OUTCOMES

Outcomes include:

- Transit remains the backbone of transportation as new modes, technologies, providers, and business models continue to integrate into the transportation system
- Seamless customer experience
- Coordinated system of standards, infrastructure, and data that creates efficient public systems and supports an inviting private sector business environment
- Emerging technologies that aim to improve air quality, lower mobility costs, and reduce travel times
- Equitable distribution of technological benefits
- Workforce development that prioritizes expertise of existing RTA employees and expands knowledge in new technologies

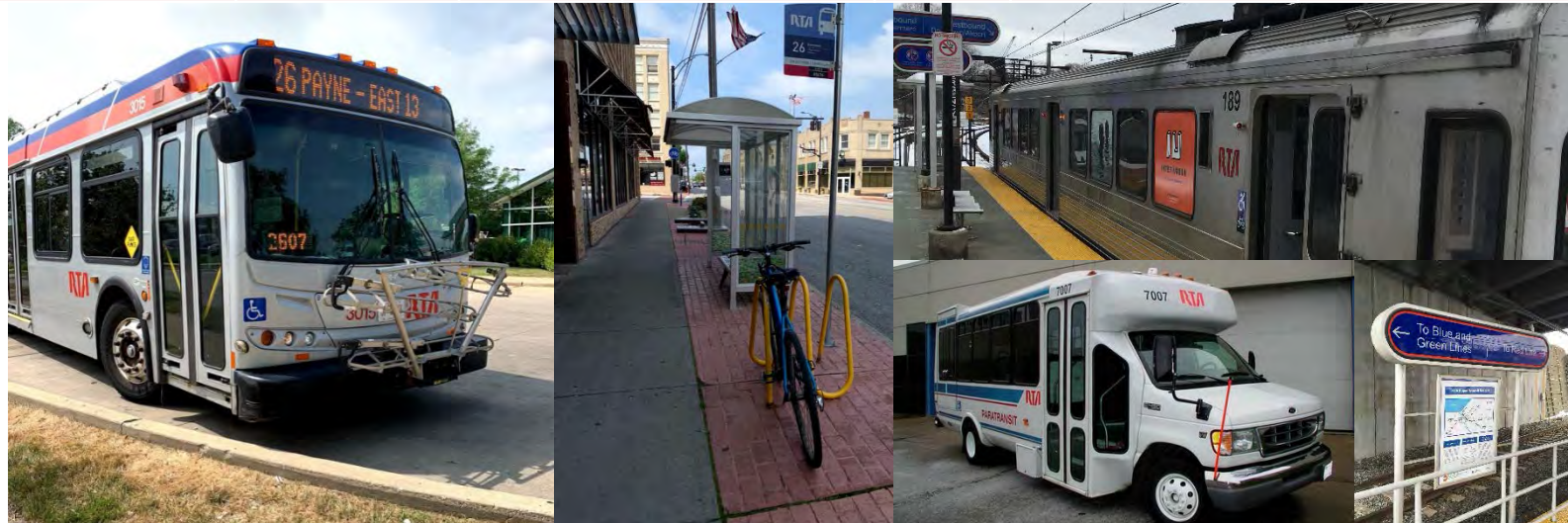


Address Funding Challenges

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X	X	X				X	X	X	X

- Top issue during public input for the Strategic Plan concerned the necessity for additional funding to meet existing and future transit needs
- Backlog of state of good repair needs
- Multiple options requiring difficult decisions balancing raising new funds, SOGR, & growth projects

Pandemic Impact: Transit funding nationwide is existential issue being prioritized by collective advocacy for continued federal support



TIMEFRAME

Short (2020-2022)

- Evaluate internal agency costs
- Continue to apply aggressively for federal grant funds
- Continue to advocate for funding needs and solutions among local, statewide, and federal partners
- Decide if a tax levy will assist with funding challenges

Medium (2023-2026)

- Implement Expanded Funding Concept with more frequent corridors and seven day a week consistency
- Delivery of heavy rail vehicles and placement into revenue service
- Implementation of regional transit improvements in collaboration with community feedback

Long (2027-2030)

- Delivery of light rail vehicles and placement into revenue service
- Continued implementation of regional transit improvements in collaboration with community feedback
- Continued evaluation of transportation funding as emerging technological changes alter traditional funding mechanisms

RESPONSIBILITIES

Champion: RTA

Supporting partners:

- FTA
- State of Ohio
- NOACA
- City of Cleveland
- Cuyahoga County
- Municipalities
- Chambers of commerce and associated business groups
- Private and nonprofit partners

OUTCOMES

Outcomes include:

- RTA's capital and operating needs are met through the year 2030
- Bus service can be appropriately deployed to serve the region's needs through implementation of the System Redesign's Expanded Funding Concept with more frequent corridors and seven day a week consistency
- Rail vehicles and Infrastructure needs can be met to deliver consistent, fast, and safe service
- Increased attraction and retention of workers in regional job centers
- Transit remains the backbone of transportation that delivers access to opportunity for individuals and the region



Partner to Support Vibrant Communities and Access to Job Centers

Customer Experience	Financial Stability	State of Good Repair	Technological Innovation	Economic Prosperity	Access	Collaboration	Equity	Environmental Sustainability	Transparency
X			X	X	X	X	X		



Pandemic Impact: Shared funding with employers is essential to keeping the economy moving

Priority Corridors

- *Downtown*
- *University Circle*

Outlying Hubs

- *Solon Corridor*
- *Chagrin Highlands*
- *I-77-Rockside*
- *Hopkins Airport Area*

TIMEFRAME

Short (2020-2022)

- Establish stakeholder group around Solon job center to assess needs and feasibility of solutions
- Conduct pilot program centered around Solon job center
- Evaluate before-and-after metrics of employee attraction and retention as well as community perception
- Assess needs and establish stakeholder group around Chagrin Highlands job center

Medium (2023-2026)

- Conduct pilot program centered around Chagrin Highlands job center and other regional job centers as needed
- Conduct feasible studies of transit service for other regional job centers
- Evaluate before-and-after metrics of employee attraction and retention as well as community perception
- If successful, launch regional long-term microtransit program

Long (2027-2030)

- Evaluate ongoing success and community perception
- Transition to widespread autonomous microtransit solutions as technology advances

RESPONSIBILITIES

Champions:

- RTA
- Business leaders representing job hubs

Supporting partners:

- Chambers of Commerce
- Workforce development partners
- NOACA
- Cuyahoga County
- Human resources departments
- Municipalities

OUTCOMES

Outcomes include:

- Reduction of social inequities
- Reduced travel time for workers
- Increased attraction and retention of workers in regional job centers
- Increased economic output for northeast Ohio



Key Initiatives Recap

- ✓ Improve Where and When Buses Travel
- ✓ Improve How Streets Function
- ✓ Improve How Customers Pay
- ✓ Improve Passenger Safety and Comfort
- ✓ Engage with Emerging Technology, Data, and New Mobility
- ✓ Address Funding Challenges
- ✓ Partner to Support Vibrant Communities and Access to Job Centers

*Strategic Plan:
Framework for the Future*

*Customer Focused
Community Engaged*





Staff Recommendation

External & Stakeholders Relations & Advocacy
Committee Approves the Framework for the
Future, GCRTA Strategic Plan 2020-2030 for
Action to the GCRTA Board of Trustees





Appendix C

Previous Priority Corridors



This section presents information on the populations, ridership, on-time performance, roadway widths, existing and proposed bike facilities, land use, and Place Typology of each of GCRTA's 9 Priority Corridors.

The 2016 NOACA Regional TOD Scorecard and Implementation Plan identified Place Typology categories for segments of some of the current GCRTA Priority Corridors. The categories were defined by the following:

- **Metropolitan Core:** highest density of development and most diverse mix of uses
- **Town Center:** center of a municipality; mixed-use developments
- **Neighborhood Center:** core of a residential area; some commercial use
- **Main Street:** linear corridor of mixed uses; similar to neighborhood center but elongated

- **Neighborhood Residential:** primarily single- or multi-family housing
- **Industrial/Transitional:** extensive area of existing or former industrial use
- **Special Destination:** a single or predominant use

The segments that were not previously defined to a Place Typology category were assigned using the logic introduced in the report.

BROADWAY AVENUE

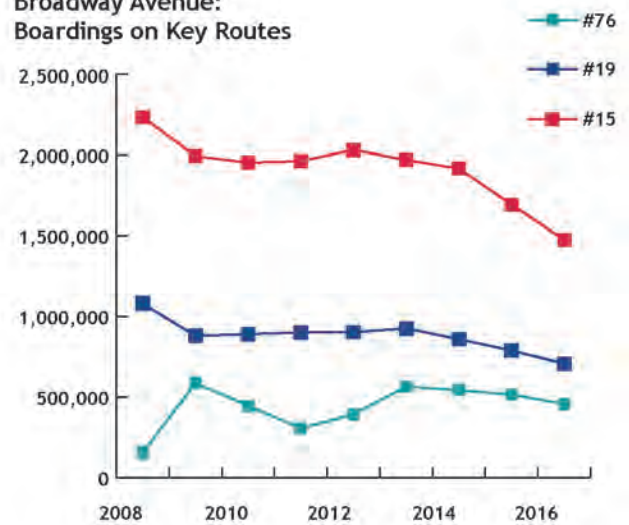


Broadway Avenue is an urban corridor that extends between E. 9th Street near downtown and areas to the southeast. Buses travel along the corridor on **#15** between E. 30th Street near Cuyahoga Community College in the Campus District and Union Avenue near the Slavic Village neighborhood, a length of approximately two miles. Buses travel 7 days a week and 24 hours a day on the corridor on **#19** between downtown and Miles Avenue near the South Broadway and Union-Miles Park neighborhoods, a length of approximately 4 miles. Bus route **#76** travels a similar length on Broadway. Additional bus routes operate along limited sections of Broadway.

The boarding statistics and average on-time performance rate are shown to the right.

The majority of the roadway is four lanes, with two lanes in each direction. Land use is predominately developed with 1-3 story buildings, limited curb cuts, and varied options for temporary on-street parking. Broadway Avenue is State Route (SR) 43 and SR 14 along the Priority Corridor area, and is a vital transportation connection between downtown and the southeast.

Broadway Avenue: Boardings on Key Routes

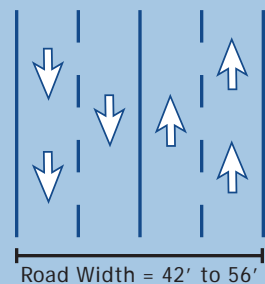


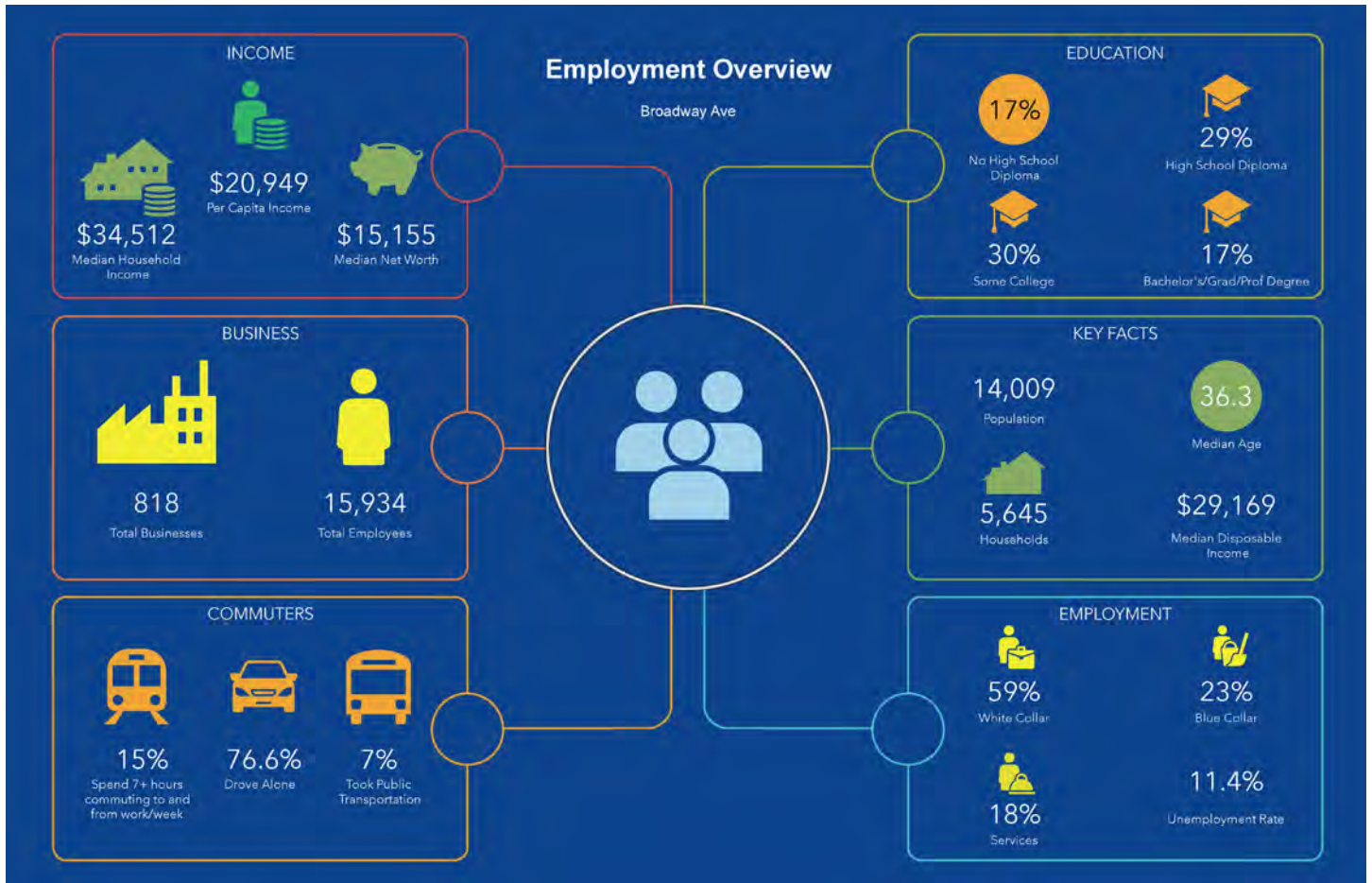
ON-TIME PERFORMANCE AVERAGE

% on time

76.74%

4 Lanes





LAND USE	PERCENT AREA
Residential	38%
Industry	15%
Transportation	14%
Retail	11%
Other (<5% Each)	22%



The map to the left displays the Broadway Ave corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table below.

CROSS STREETS	TYOLOGY
Progressive Field to Broadway Ave & McBride Ave	Industrial/Transitional
to Broadway Ave & Fleet Ave/Osage Ave	Neighborhood Center
To Broadway Ave & Miles Ave	Industrial/Transitional
to Turney Rd & Sladden Ave/Grand Division Ave	Neighborhood Residential
to Turney Rd & Dorothy Ave	Main Street
to Turney Rd & McCracken Road	Town Center
to Turney Rd & Granger Ave	Neighborhood Residential

CEDAR ROAD

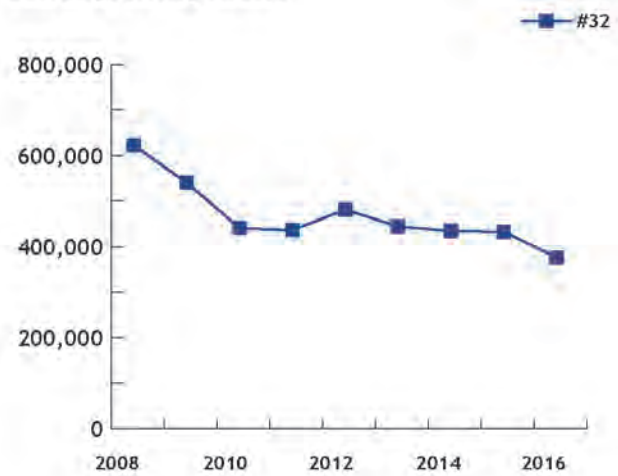


Cedar Road Priority Corridor is an urban roadway that extends east-west between University Circle and the I-271 Outerbelt. Bus route #32 connects the Cleveland Clinic on Euclid Avenue to the Cedar-University Rapid station, then travels to points east including Cleveland Heights, University Heights, South Euclid and Beachwood, a length of approximately 7 miles. Route #32 travels 7 days a week from early morning to late night.

The boarding statistics and average on-time performance rate are shown to the right.

The roadway is predominantly 4-5 lanes, with two lanes in each direction, and a center turn lane in spot locations. The corridor is developed with stretches of urban single family homes with driveways fronting onto Cedar Road. At key select intersections, the roadway widens to six lanes and adjacent development get much larger, with big box stores and regional destinations.

Cedar Road: Boardings on Key Routes

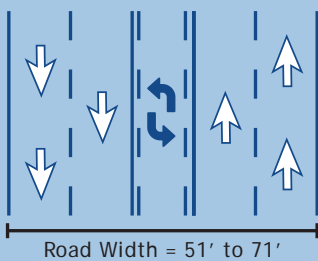


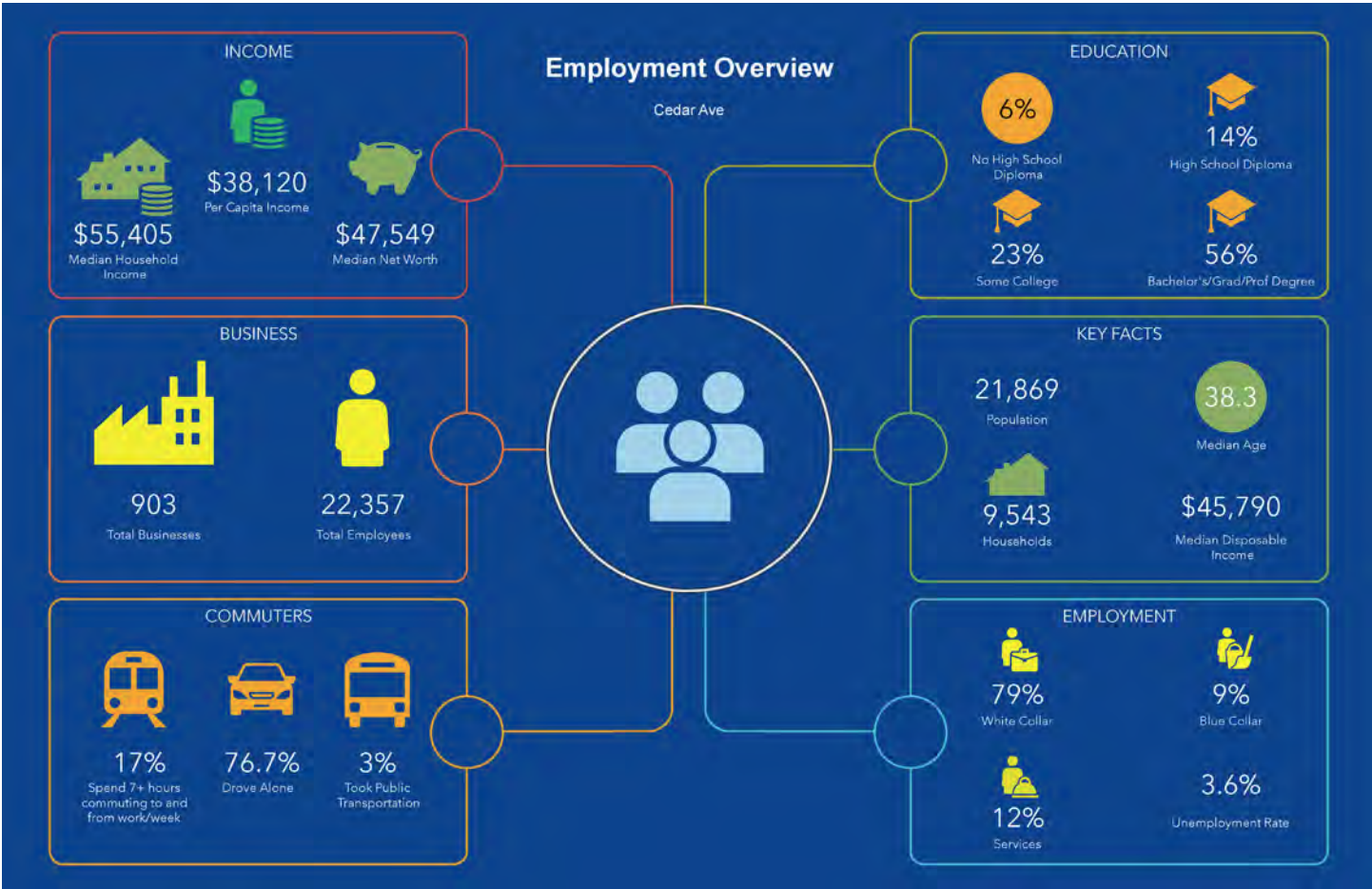
ON-TIME PERFORMANCE AVERAGE

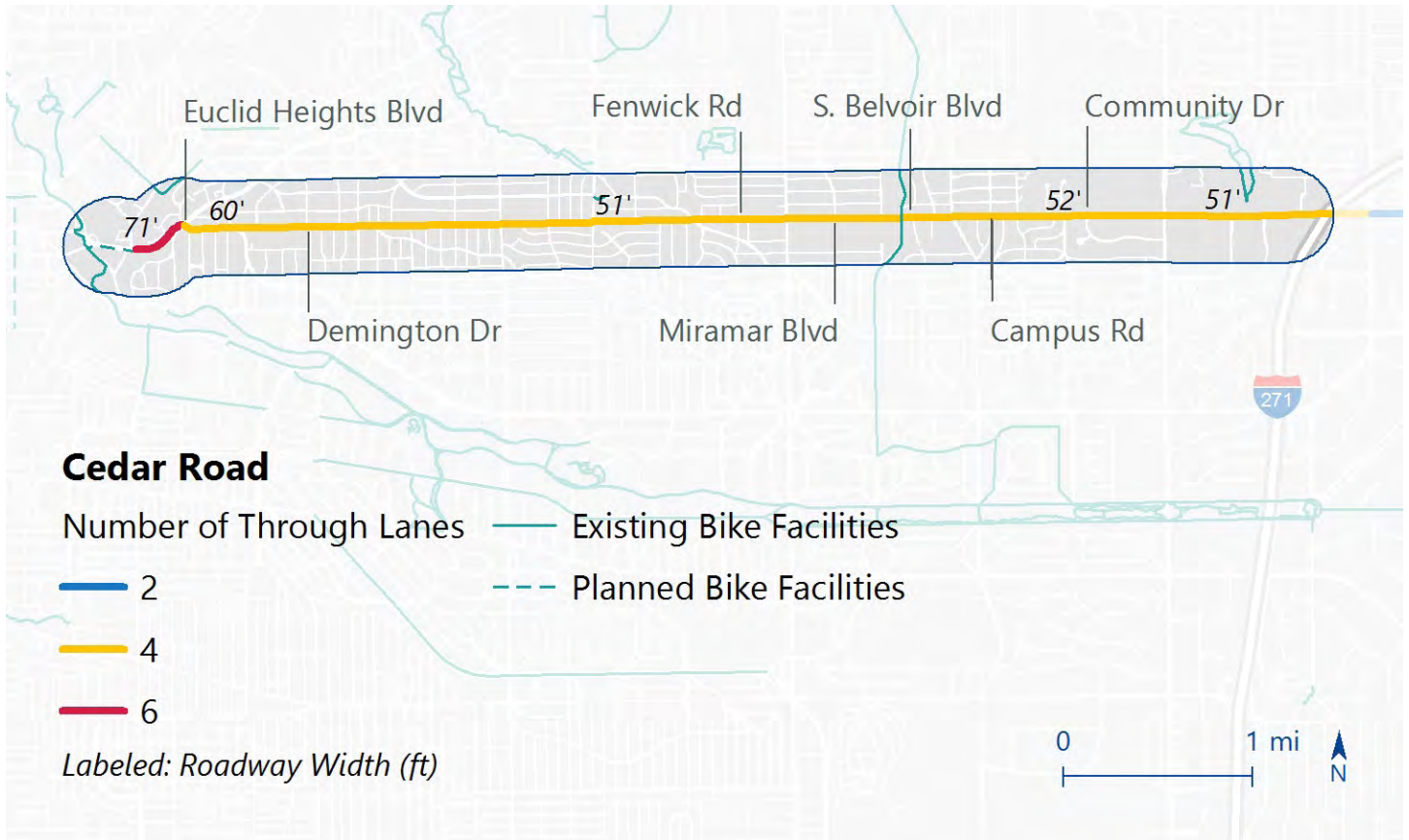
% on time

87.53%

4-5 Lanes & Center Lane







The map above displays the Cedar Ave corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.

LAND USE	PERCENT AREA
Residential	61%
Retail	14%
Apartment	10%
Passive Green Space	5%
Other (<5% Each)	11%

CROSS STREETS	TYOLOGY
Start to Cedar Rd & Euclid Heights Blvd	Metropolitan Core
to Cedar Rd & Demington Dr	Neighborhood Center
to Cedar Rd & Fenwick Rd	Neighborhood Residential
to Cedar Rd & Miramar Blvd	Town Center
to Cedar Rd & S Belvoir Rd	Neighborhood Residential
to Cedar Rd & Campus Rd	Neighborhood Center
to Cedar Rd & Community Dr	Neighborhood Residential
to End of Corridor	Town Center

DETROIT AVENUE

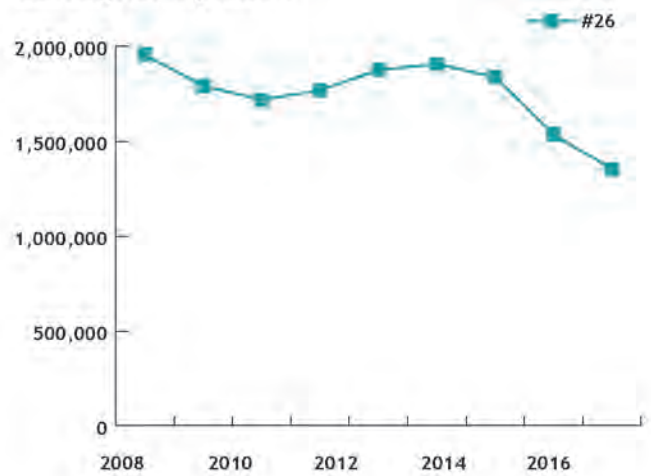


Detroit Avenue is an urban corridor that extends between downtown and Wooster Road, a length of approximately 7.5 miles. Bus route #26 travels 7 days a week and 24 hours a day on Detroit Avenue through Cleveland’s West Side to Lakewood and Rocky River.

The boarding statistics and average on-time performance rate are shown to the right.

The majority of the roadway has one through lane in each direction, with the addition of a center turn lane and on-street parking mixed along the corridor. Outside of downtown, land use is consistently developed with 1-3 story commercial and mixed use buildings.

Detroit Avenue: Boardings on Key Routes

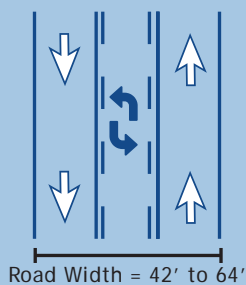


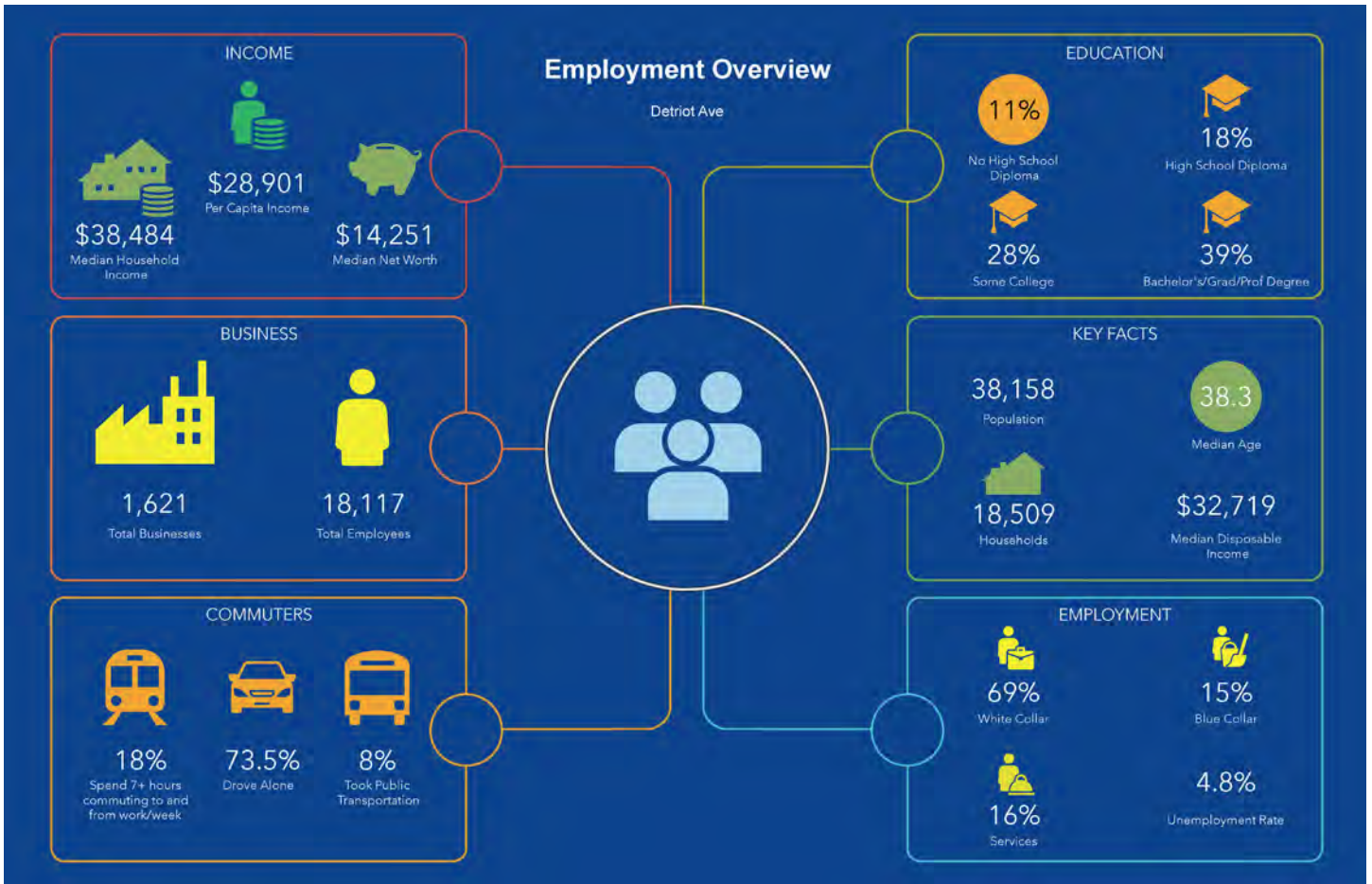
ON-TIME PERFORMANCE AVERAGE

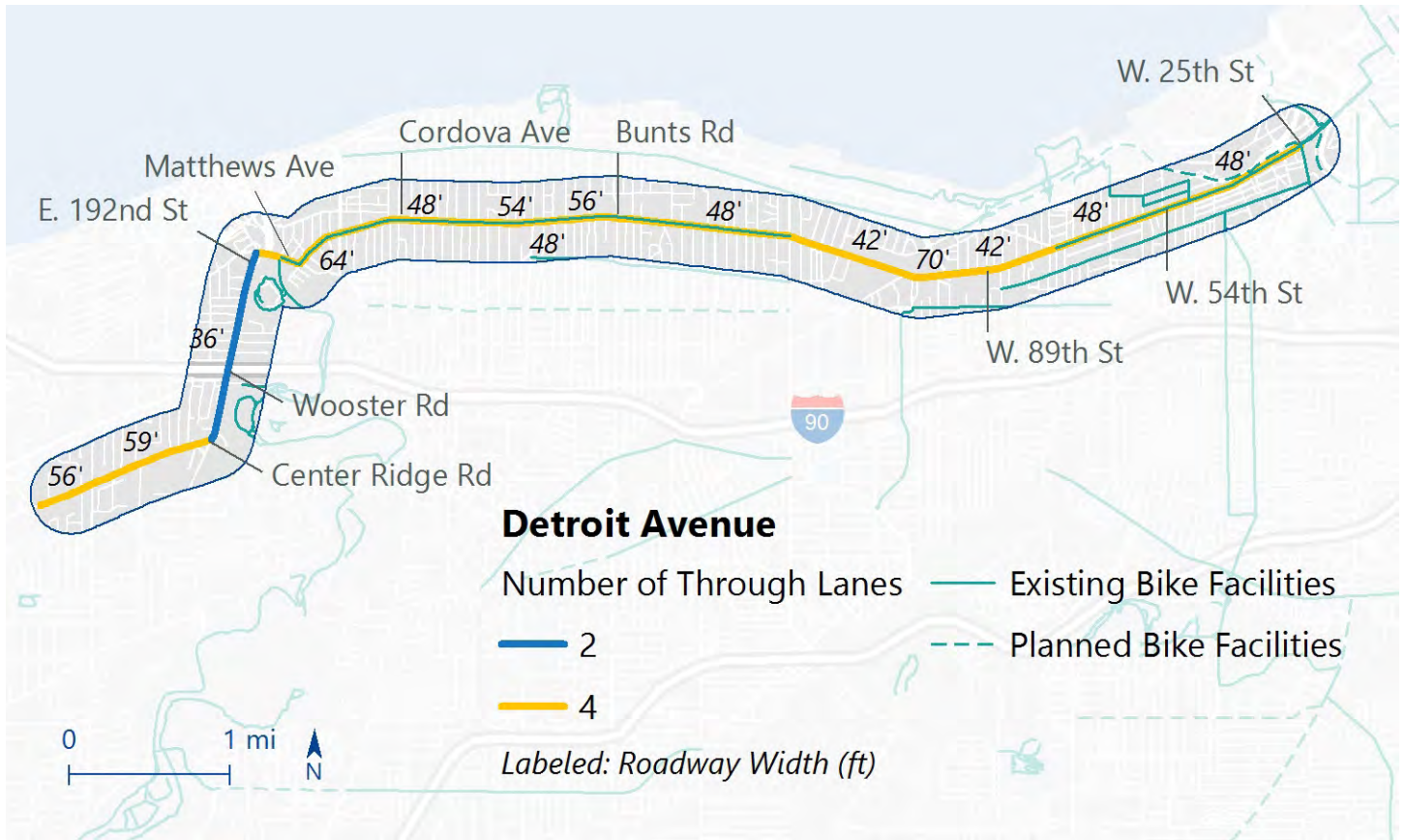
% on time

70.17%

2 Lanes & Center Lane







The map above displays the Detroit Ave corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.

LAND USE	PERCENT AREA
Residential	47%
Retail	15%
Apartment	10%
Passive Green Space	5%
Other (<5% Each)	23%

CROSS STREETS	TYOLOGY
From W 25th to W 54th	Main Street
to W 89th	Neighborhood Residential
to Bunts Rd	Neighborhood Center
to Cordova Rd	Town Center
to Matthews Ave	Main Street
to Wooster & W 192nd St	Industrial/Transition
to Wooster & Center Ridge Rd	Neighborhood Residential
To End of corridor	Main Street

E. 105/TURNEY AVENUE

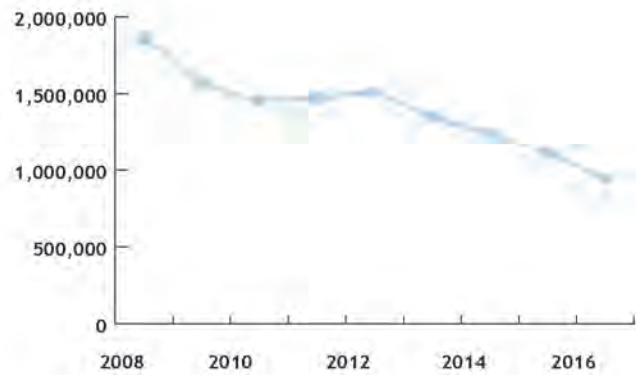


E. 105th Street is a north-south corridor on the east side of Cleveland. Bus route #10 operates 24 hours a day and 7 days per week and connects to University Circle and the E. 105th-Quincy Rapid station before traveling to points to the south. The route turns onto E 93rd St and ends at Turney Loop.

The boarding statistics and average on-time performance rate are shown to the right.

The roadway varies between two lanes and four lanes, and in some locations expands to include five lanes with a center turn lane. On-street parking varies across the corridor. Development ranges from 1-3 story residential and commercial buildings for long stretches to large institutional land uses in University Circle.

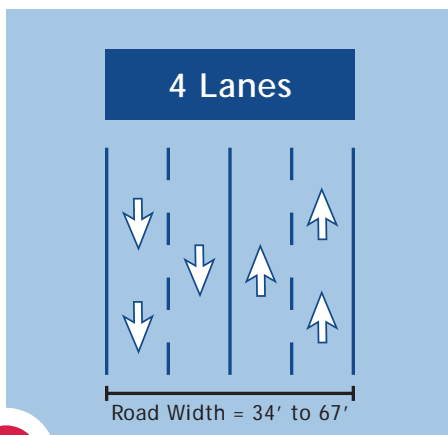
E. 105th Street/Turney: Boardings on #10

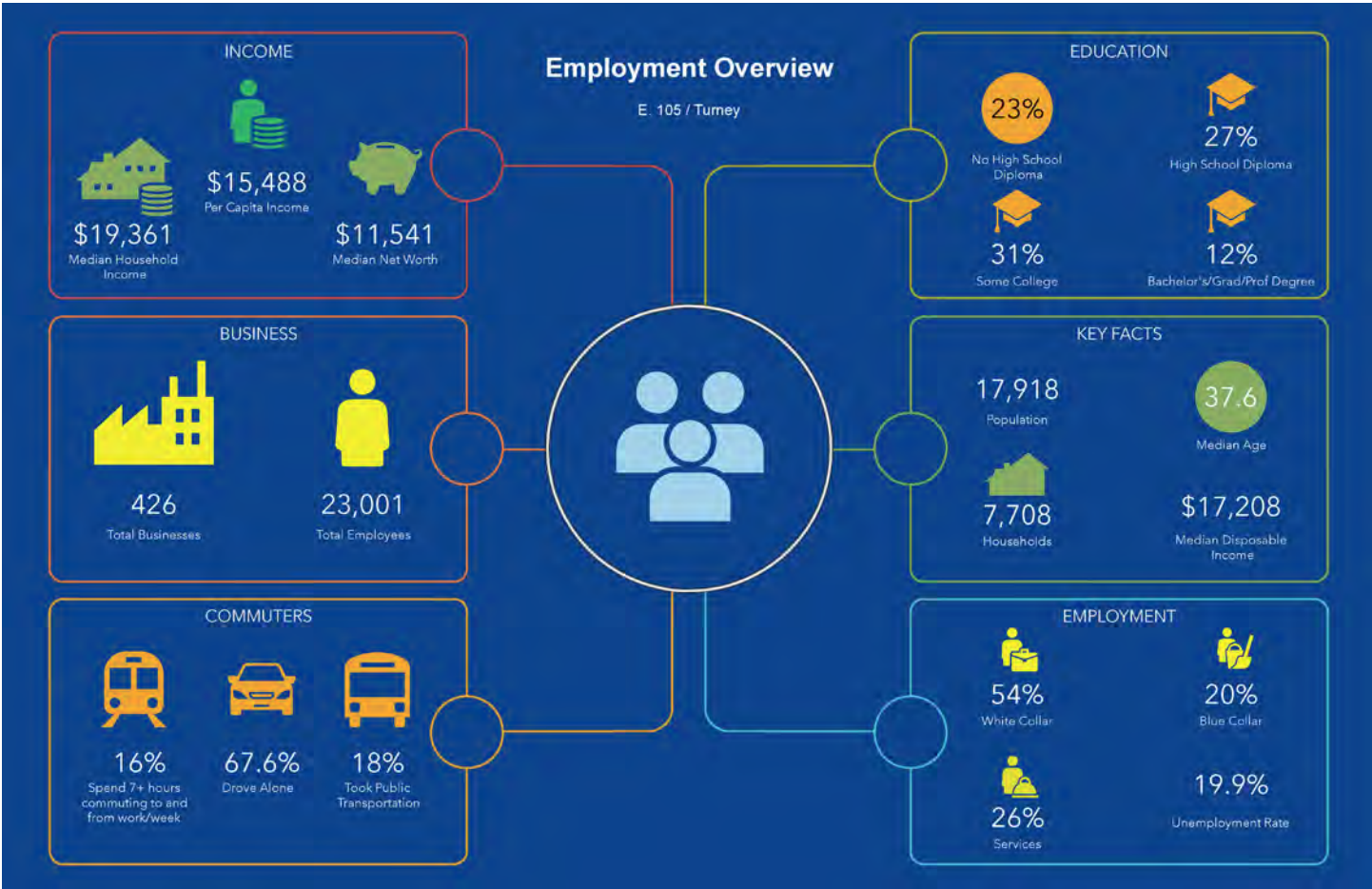


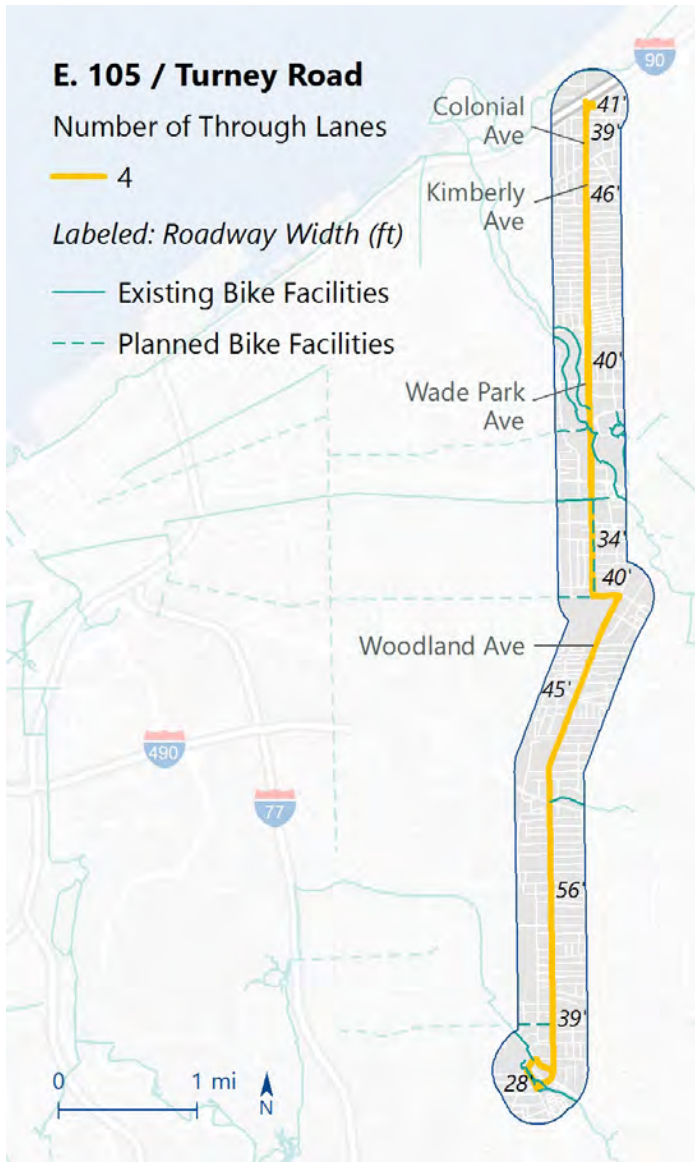
ON-TIME PERFORMANCE AVERAGE

% on time

78.79%







The map above displays the E 105/Turney corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.

LAND USE	PERCENT AREA
Residential	43%
Retail	9%
Industry	8%
Transportation	7%
Active Green Space	7%
Apartment	7%
Light Industry	5%
Office	5%
Other (<5% Each)	9%

CROSS STREETS	TYOLOGY
From W 25th to W 54th	Main Street
to W 89th	Neighborhood Residential
to Bunts Rd	Neighborhood Center
to Cordova Rd	Town Center
to Matthews Ave	Main Street
to Wooster & W 192nd St	Industrial/Transition
to Wooster & Center Ridge Rd	Neighborhood Residential
To End of corridor	Main Street

KINSMAN ROAD

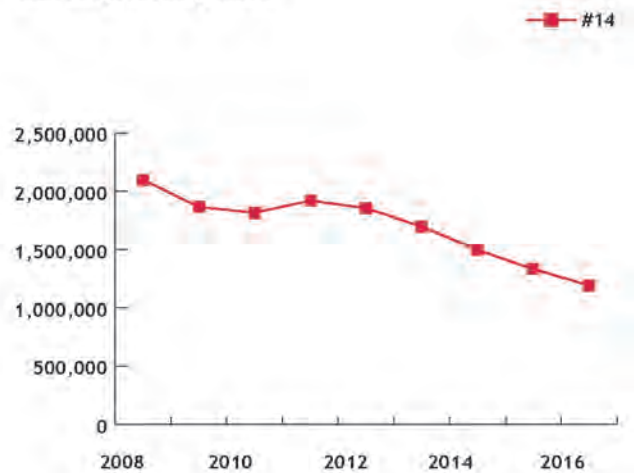


Kinsman Road is an urban corridor that travels southeast of downtown between Woodland Avenue/E. 55th Street and Lee Road, a length of approximately 5 miles. Buses on route #14 travel 7 days a week and 24 hours a day from downtown along Community College Avenue, Woodland Avenue, Kinsman Road, and Chagrin Boulevard to the Van Aken and Warrensville Rapid Station in Shaker Heights.

The boarding statistics and average on-time performance rate are shown to the right.

The roadway is predominantly four lanes, with two lanes in each direction. A center turn lane and on-street parking are located in spot locations along the corridor. Land use is developed with mostly 1-2 story urban commercial buildings, with some locations that have larger suburban style retail and parking lots.

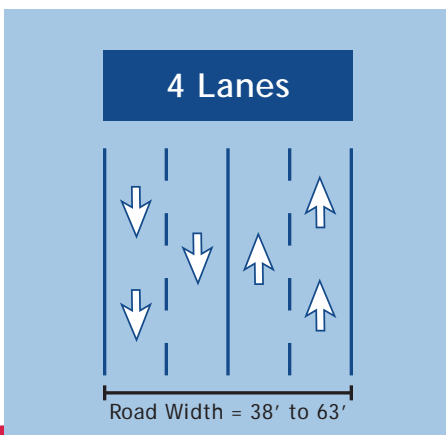
Kinsman Road: Boardings on Key Route

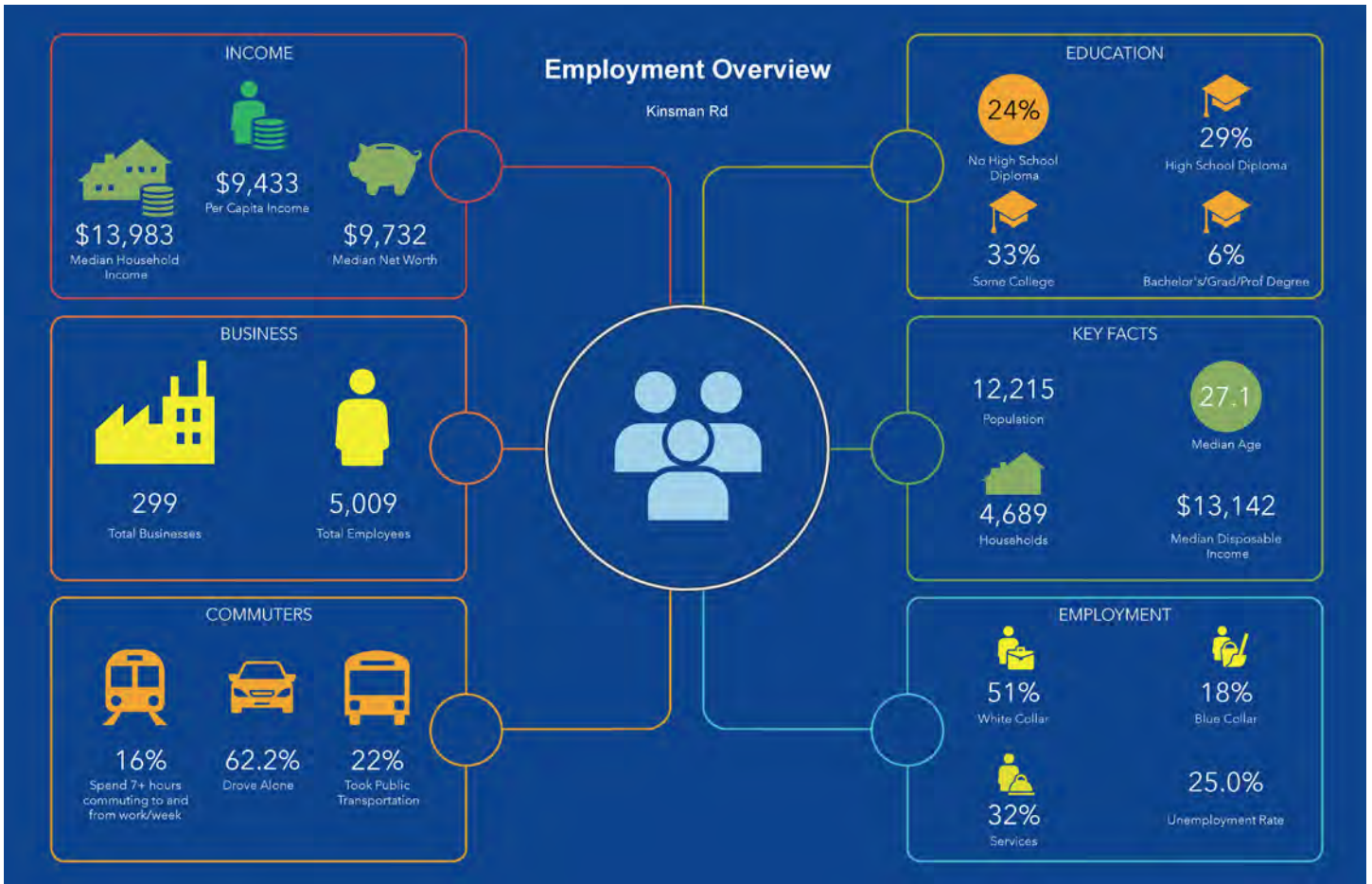


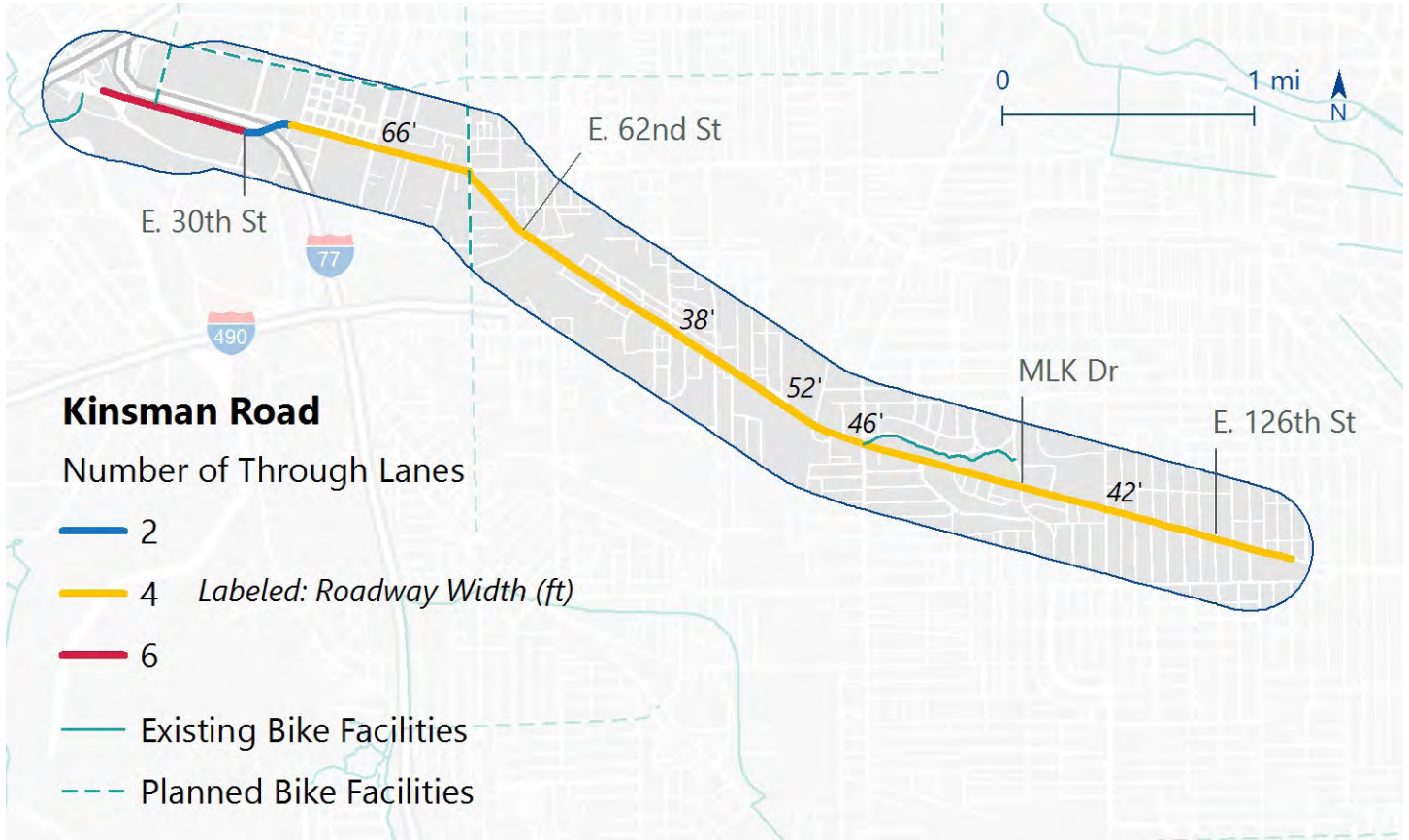
ON-TIME PERFORMANCE AVERAGE

% on time

80.61%







Kinsman Road

Number of Through Lanes

- 2
- 4 *Labeled: Roadway Width (ft)*
- 6
- Existing Bike Facilities
- - - Planned Bike Facilities

LAND USE	PERCENT AREA
Residential	28%
Transportation	12%
Light Industry	11%
Apartment	11%
Industry	10%
Retail	8%
Active Green Space	7%
Other (<5% Each)	14%

The map above displays the Kinsman Rd corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table below.

CROSS STREETS	TYOLOGY
Start to E. 30th St/ Woodland Ave	Metropolitan Core
to E 62nd St	Industrial/Transitional
to MLK Dr	Neighborhood Residential
to E 126th St	Main Street
to end	Neighborhood Center

LORAIN AVENUE

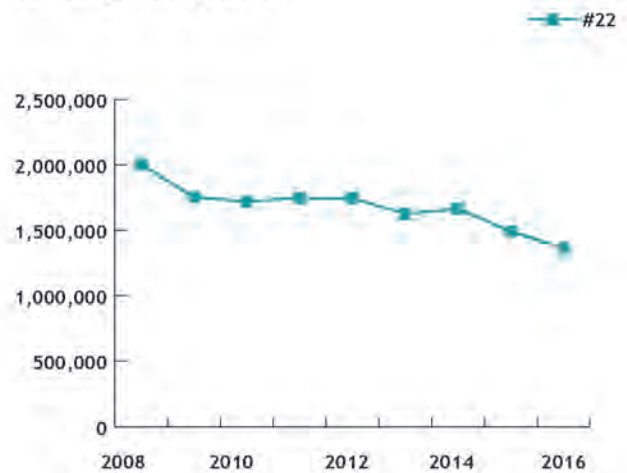


Lorain Avenue is an urban corridor that travels southwest of downtown. From W. 25th Street to Rocky River Drive (SR 237), the corridor is approximately 6.5 miles. Bus route #22 travels 7 days a week and 24 hours a day from downtown to West 25th Street through Ohio City and west on Lorain Avenue to the West Park Rapid Station.

The boarding statistics and average on-time performance rate are shown to the right.

The roadway is predominantly 4-5 lanes with one-story commercial and retail buildings. Near Ohio City the roadway has one lane in each direction with on-street parking and pedestrian-oriented destinations. The center of the corridor includes a length of protected bicycle lanes.

Lorain Avenue: Boardings on Key Route

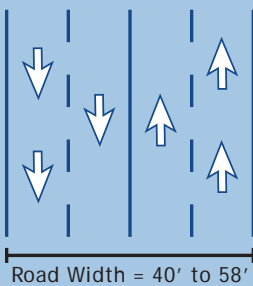


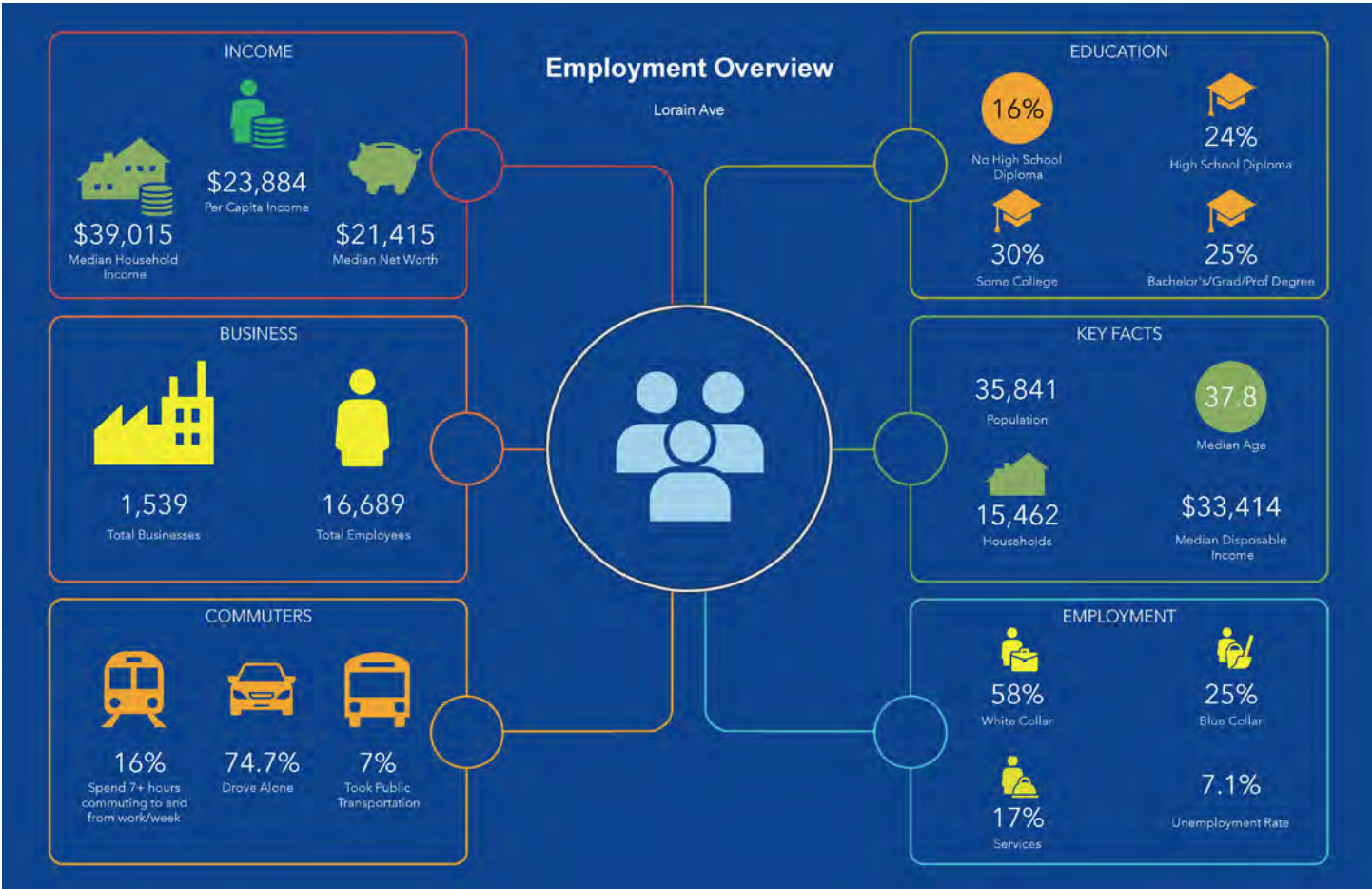
ON-TIME PERFORMANCE AVERAGE

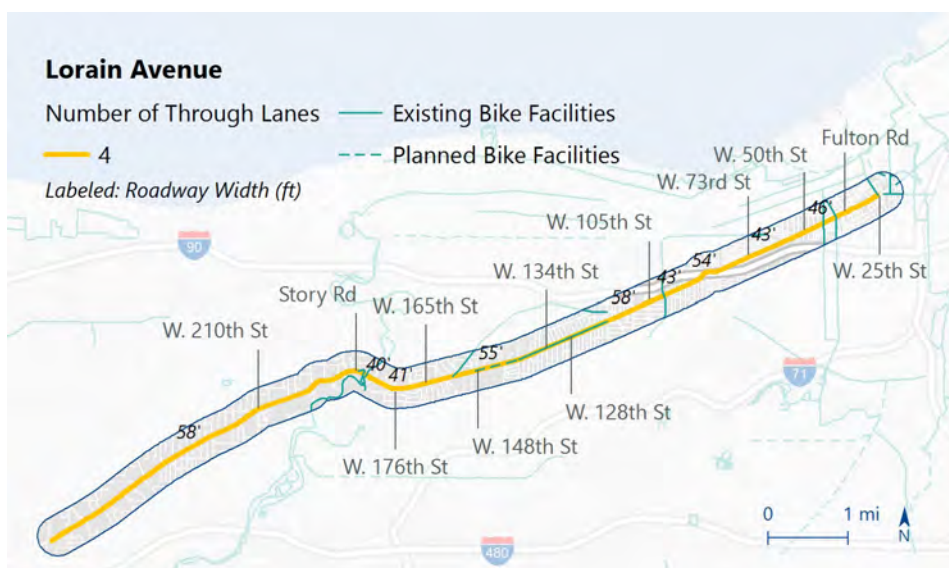
% on time

75.72%

4-5 Lanes







The map To the left displays the Lorain Ave corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table below.

CROSS STREETS	TYOLOGY
Start to Fulton St	Neighborhood Center
to 50th St	Main Street
to W 73rd St	Neighborhood Center
to W 105th St	Main Street
to W 120th St	Neighborhood Center
to W 134th St	Main Street
to W 148th St	Neighborhood Center
to W 165th St	Main Street
to W 176th	Neighborhood Center
to Story Road	Special Destination
to W 210th St	Neighborhood Residential
to end	Town Center

LAND USE	PERCENT AREA
Residential	54%
Retail	16%
Apartment	7%
Transportation	6%
Passive Green Space	6%
Other (<5% Each)	12%



ST. CLAIR AVENUE

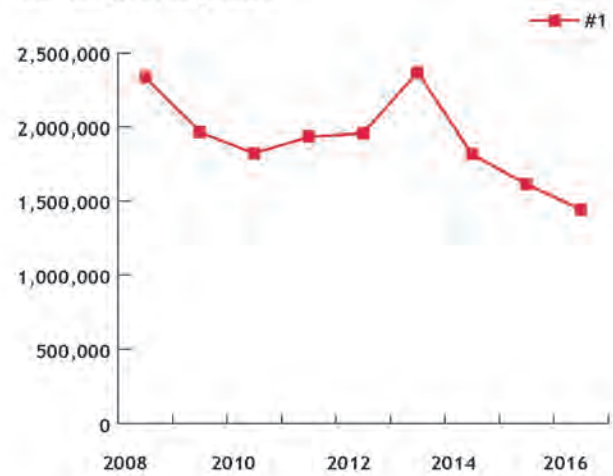


St. Clair Avenue is a corridor that extends from Public Square in downtown Cleveland to the northeast to City of Euclid. Bus route #1 travels 24 hours a day and 7 days a week between downtown and E. 152nd Street, and travels early morning to late night to the Euclid Park-N-Ride. A length of approximately 11 miles, this is a key corridor on Cleveland's East Side.

The boarding statistics and average on-time performance rate are shown to the right.

Near downtown the roadway is predominantly four lanes with on-street parking and dense development. Towards the east, the roadway varies with 3-5 lanes depending on whether on-street parking is utilized. West of 152nd Street, the corridor is developed with a mix of urban commercial and retail buildings surrounded by dense neighborhoods. East of 152nd Street, the corridor is four lanes and the surrounding character changes to industrial uses to the south and I-90 to the north.

St. Clair Avenue:
Boardings on Key Route

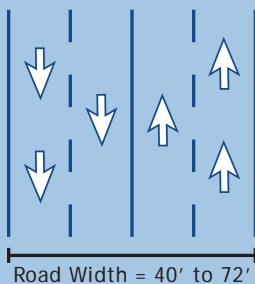


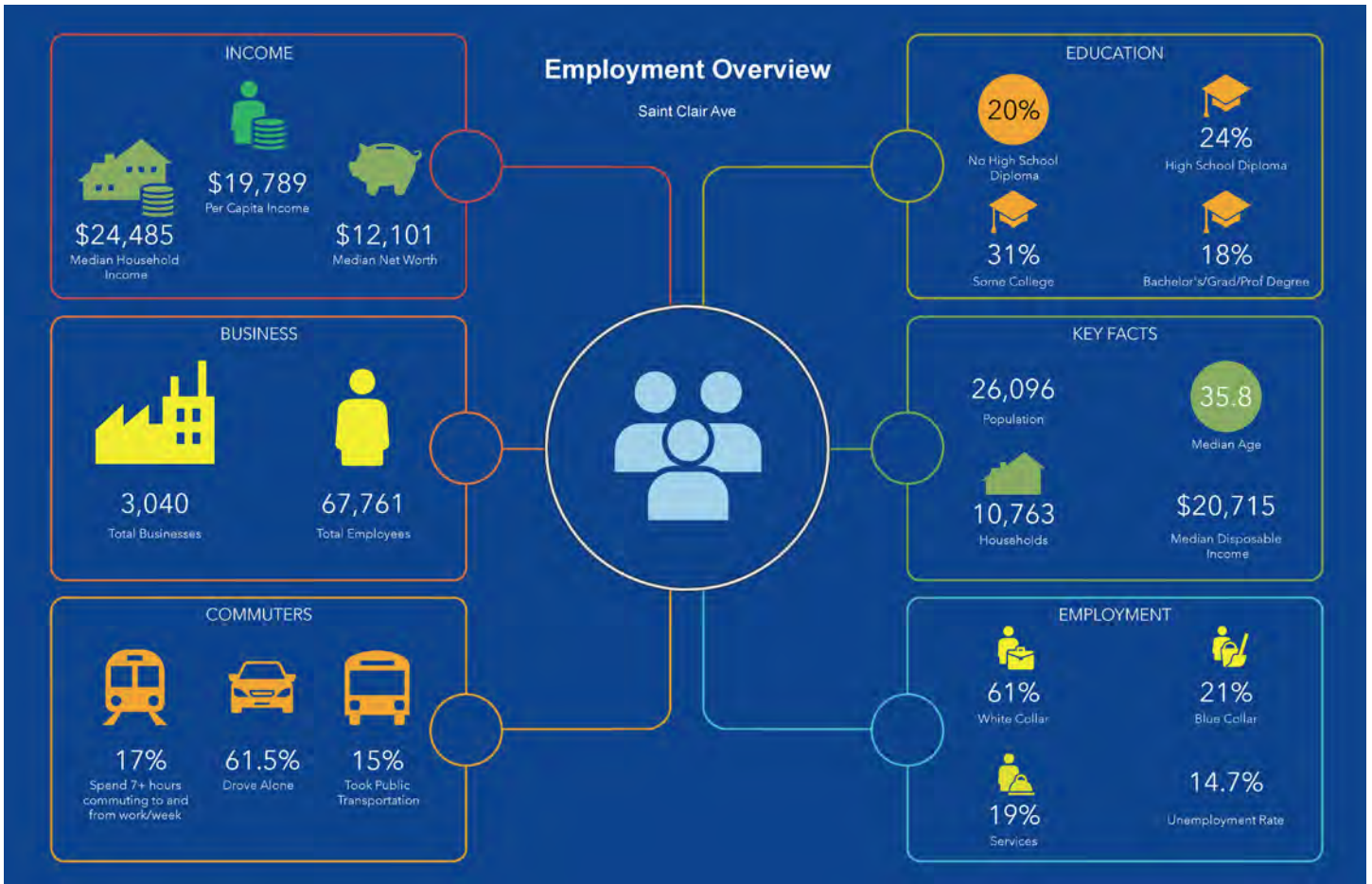
ON-TIME PERFORMANCE AVERAGE

% on time 86.42%

% missing 34.37%

4 Lanes





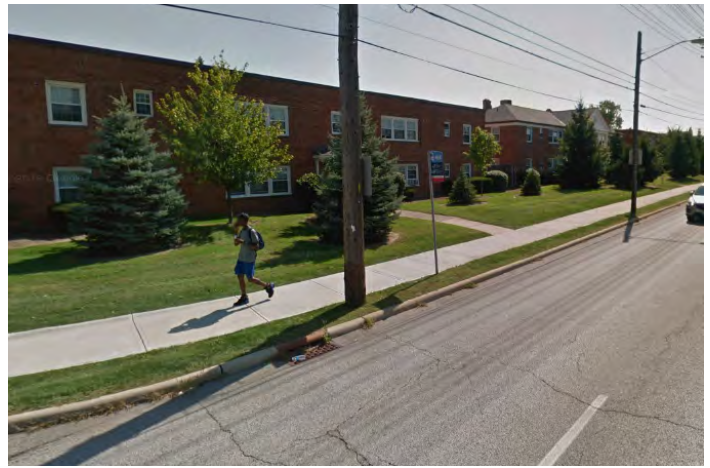
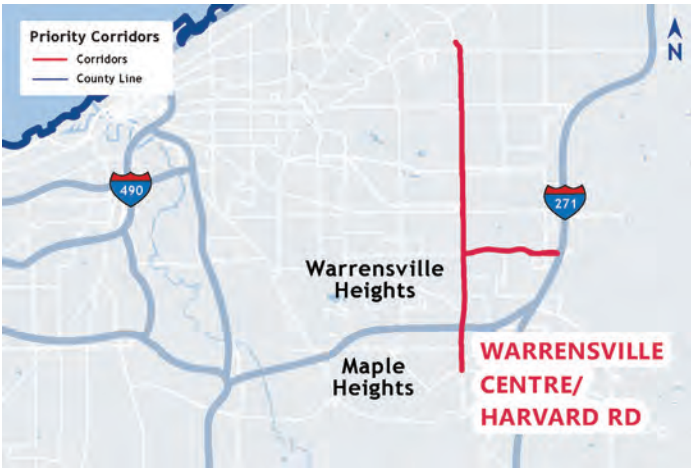


The map above displays the St. Clair Ave corridor’s roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.

LAND USE	PERCENT AREA
Residential	32%
Industry	22%
Retail	12%
Transportation	8%
Light Industry	7%
Other (<5% Each)	19%
Active Green Space	7%
Other (<5% Each)	14%

CROSS STREETS	TYOLOGY
From Ontario St.	
to E 13th St	Metropolitan Core
to E 55th St	Industrial/Transitional
to E 100th St	Main Street
to E 107th St	Neighborhood Center
to E 147th St	Main Street
to E 154th St	Neighborhood Center
to London Rd	Main Street
to Euclid Park-and-Ride	Industrial/Transitional

WARRENVILLE CENTRE ROAD/HARVARD ROAD

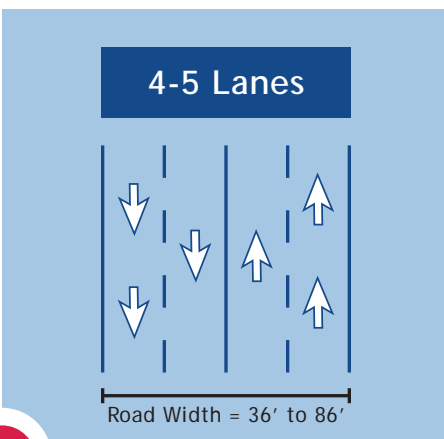


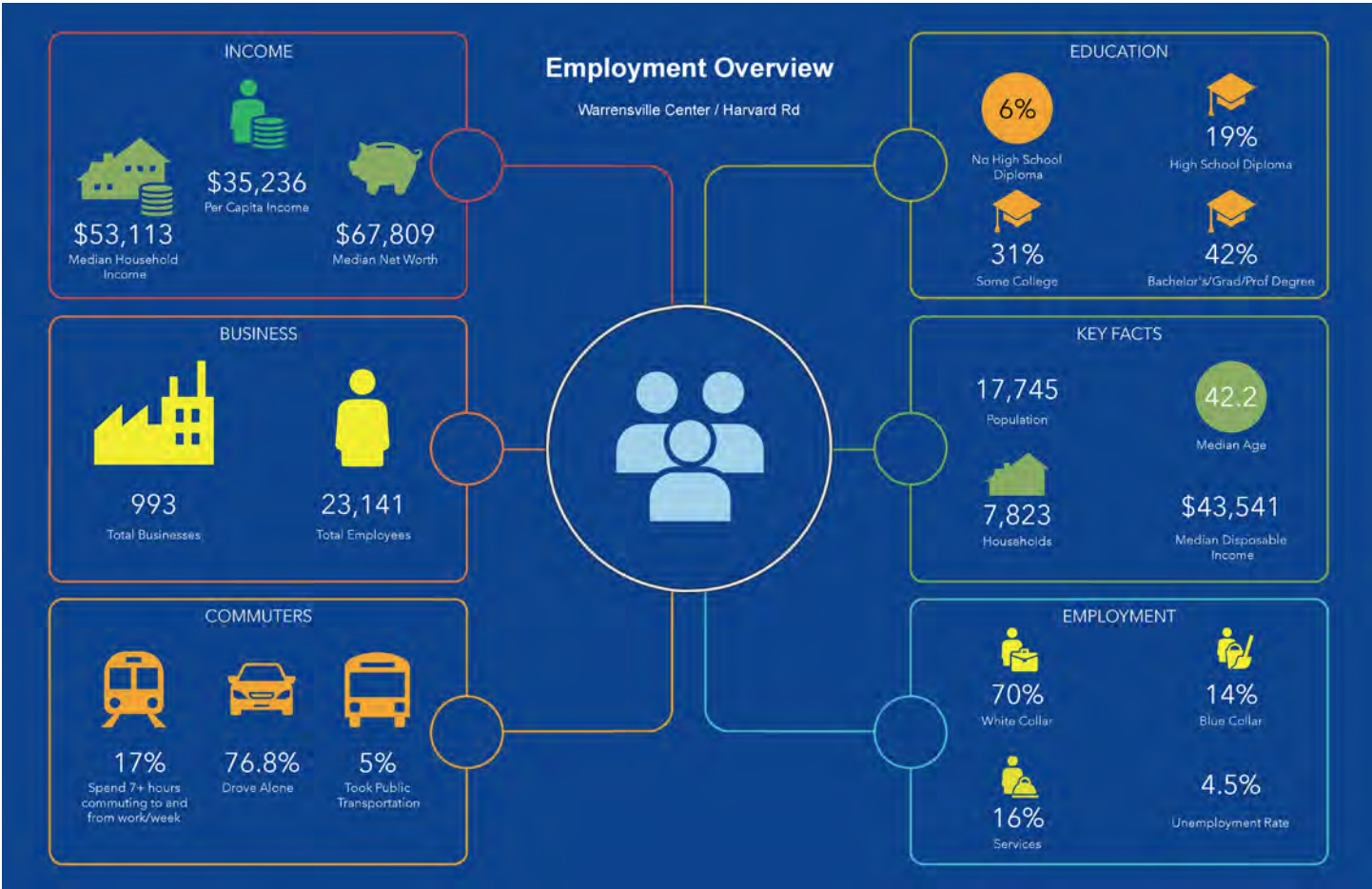
Warrensville Centre Road is a north-south corridor that extends approximately 8 miles to connect the suburbs of East Cleveland, Cleveland Heights, South Euclid, University Heights, Shaker Heights, Warrensville Heights, North Randall, and Maple Heights. Route #41 operates 24 hours a day and 7 days a week between Louis Stokes - Windermere Rapid Station and Southgate Transit Center. Limited #41F express service extends to Solon Industrial Park and Glenwillow.

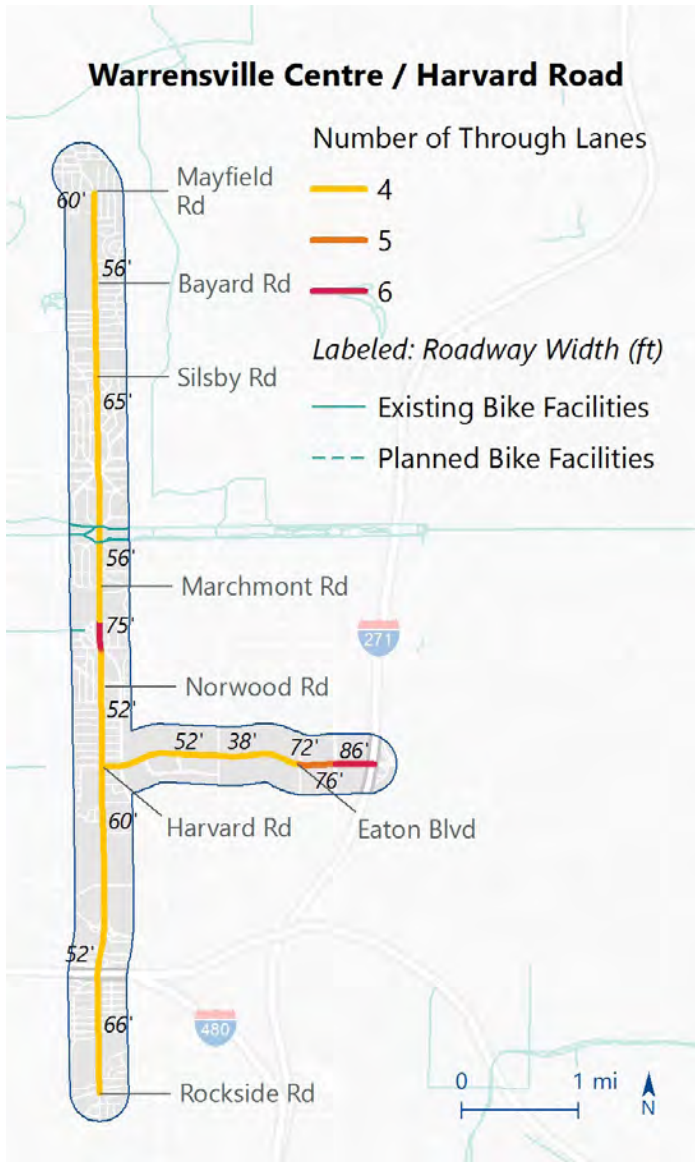
The boarding statistics are shown to the right.

The roadway is predominantly 4-5 lanes with no on-street parking. The corridor includes abundant stretches of single family residential homes with driveways fronting onto Warrensville Centre Road. At intersections such as Cedar Road, the character changes to include big box retail and grocery stores.

Warrensville Centre Road/Harvard Road #41-41F: Boardings on Key Route







The map above displays the Warrensville Center/ Harvard Rd corridor's roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.

LAND USE	PERCENT AREA
----------	--------------

Residential	40%
Office	15%
Retail	13%
Active Green Space	9%
Other (<5% Each)	24%

CROSS STREETS	TYOLOGY
---------------	---------

Warrensville Center & Mayfield Rd to Warrensville Center & Bayard Rd	Main Street
to Warrensville Center & Silsby Rd	Town Center
to Warrensville Center & Marchmont Rd	Neighborhood Residential
to Warrensville Center & Norwood Rd	Town Center
to Warrensville Center & Rockside Rd	Main Street
Harvard Rd & Warrensville Center to Eaton Blvd	Industrial/Transitional
to 271	Main Street
To End of corridor	Main Street

W. 25TH STREET/PEARL ROAD/STATE ROAD

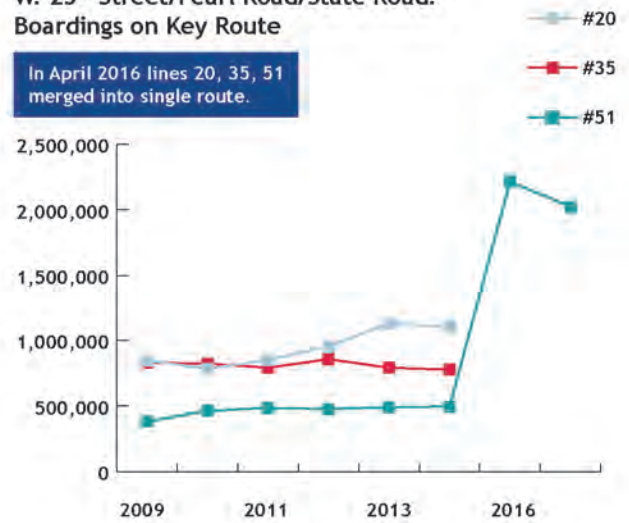


The MetroHealth Line is a consolidated, branded group of routes that are 51-A-B-C. The W. 25th Street, Pearl Road, and State Road corridors were noted in the previous RTA Strategic Plan as Priority Corridors. Twenty new buses, 37 refinished shelters, and over 400 customized signs along the route connect five MetroHealth locations.

The boarding statistics and average on-time performance rate are shown to the right.

W. 25th Street/Pearl Road/State Road: Boardings on Key Route

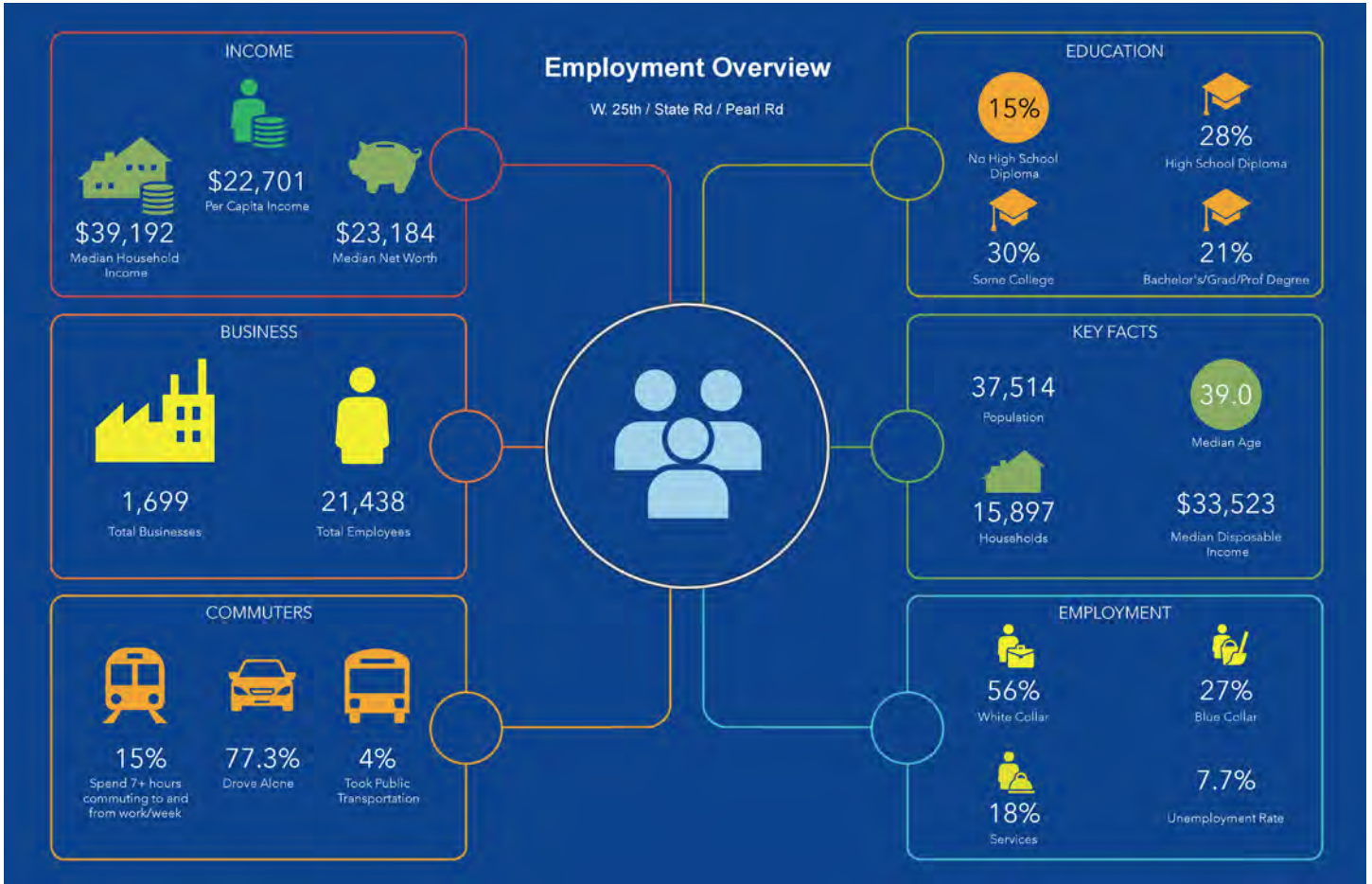
In April 2016 lines 20, 35, 51 merged into single route.



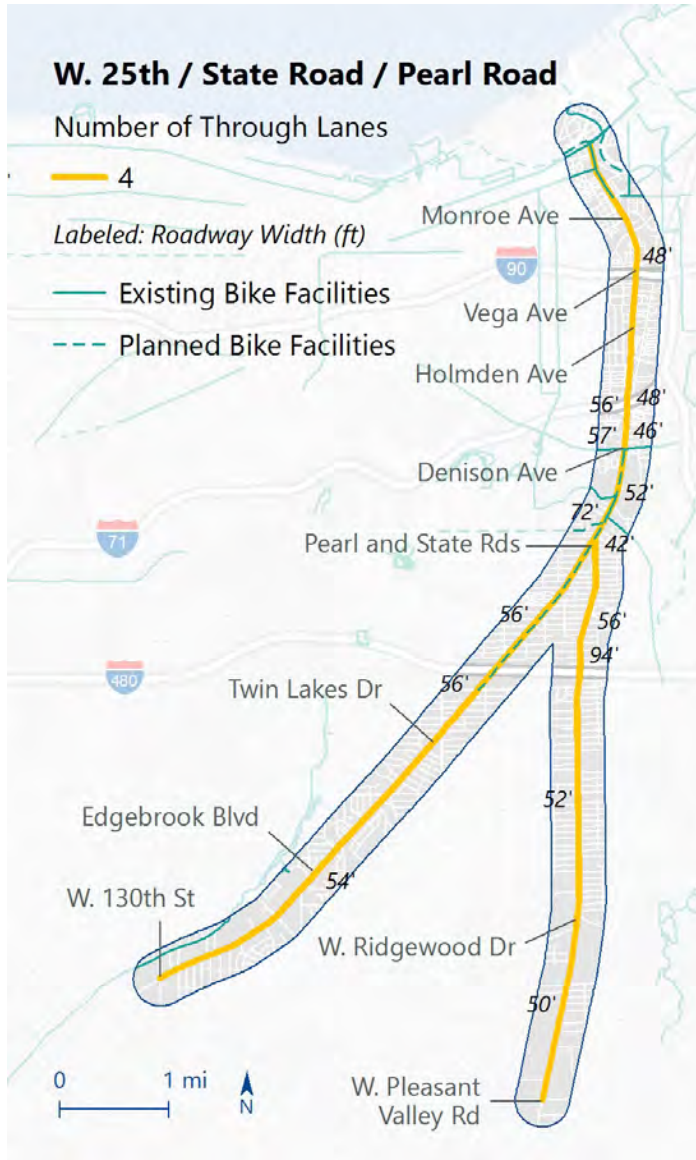
ON-TIME PERFORMANCE AVERAGE

% on time

76.45%



The map below displays the W 25th/State Rd/Pearl Rd corridor's roadway width, quantity of through lanes, and existing and proposed bike facilities. In addition, the cross streets associated with changes in Typology are labeled to correspond with the table to the right.



LAND USE	PERCENT AREA
----------	--------------

Residential	54%
Retail	14%
Transportation	5%
Other (<5% Each)	27%

CROSS STREETS	TYOLOGY
---------------	---------

W 25th	
to Monroe Ave	Neighborhood Center
to Vega Ave	Industrial/Transitional
to 25th & Holmden Ave	Main Street
to 25th & Daisy Ave	Special Destination
to Pearl & Denison Ave	Main Street
to Pearl & State	Special Destination
to State & W Ridgewood Dr	Main Street
to State & W Pleasant Valley Rd	Neighborhood Residential
Pearl and State	
to Pearl & Trin Lakes Dr	Main Street
to Pearl & Edgebrook Blvd	Neighborhood Residential
to End of Pearl (W 130th St)	Main Street



Appendix D

Rail Car Pillar Study



Rail Car Evaluation Project Review



Dave Diaz
Vice President

April 16, 2019

Project Scope

- LTK was contracted to conduct a rail car evaluation for RTA. The tasks included:
 - Estimate remaining life of each fleet
 - Upgrade/replace recommendations for both fleets
 - Upgrade plan to maintain existing fleets for 10 years



Existing HRV Fleet

- Manufactured by Tokyu Car Corporation
- 60 cars were delivered, 40 remain
- Began service in 1984 (35 years ago)
- 30 year design life



Existing LRV Fleet

- Manufactured by Breda
- 48 cars were delivered, 34 remain
- Began service in 1981 (38 years ago)
- 30 year design life
- Midlife structural overhaul completed in 2007



Phase 1: HRV Inspections

- Generally, in poor condition
- Over the last decade:
 - Work orders have increased by 22%
 - Cost of Maintenance increased by 148%
- Heavy corrosion of the primary structure was identified on all cars inspected
 - Loss of section of up to 50% was found
- Procurement and maintenance of parts has become an issue
 - Brake actuators (7 months between work orders)
 - Propulsion system (2.5 months between work orders)
 - Cab signal equipment (2.5 months between work orders)
- **LTK estimate: remaining useful life 5 years or less**



Corrosion Section Loss

Phase 1: LRV Inspections

- Generally, in fair condition
- Over the last decade:
 - Cost of Maintenance increased by 90%
- Cab equipment is worn to the point that it is unreadable
- Articulated structures have developed corrosion and cracks
- Procurement and maintenance of parts has become an issue
 - Cab signal equipment (3.5 months between work orders)
 - Track brakes (18 months between work orders)
 - Propulsion system (2 months between work orders)
- Overhaul was effective in mitigating corrosion
- **LTK estimate: remaining useful life 10 years or less**



Corrosion Hole/Crack in Articulated Structure



Master Controller Worn vs. New

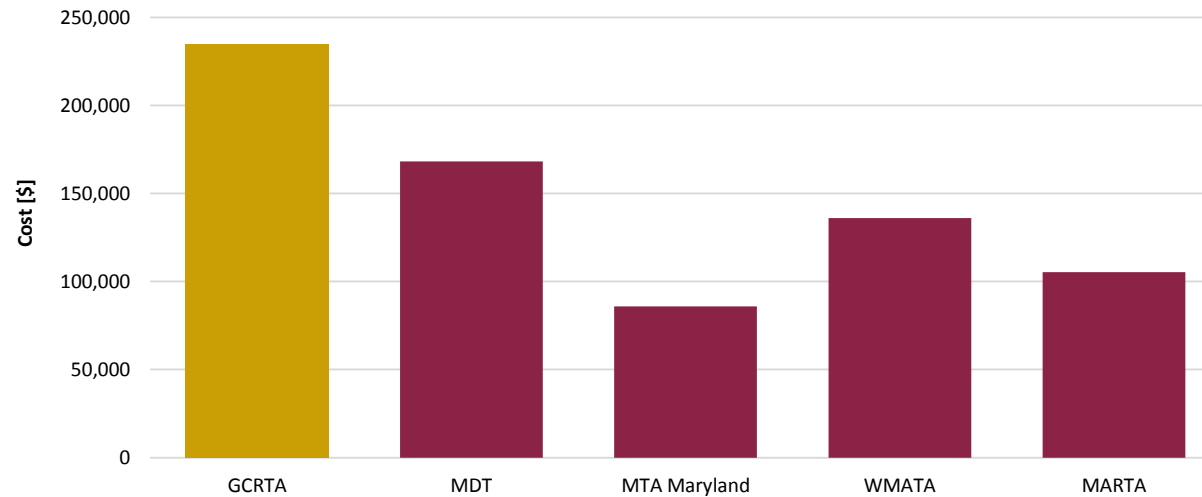


Overhaul Repairs

Phase 1: HRV Peer Review

- LTK utilized the published FTA's data to compare RTA's rail service with peer agencies
 - RTA spends more to maintain each car than any of their peers
 - The four other agencies shown have all initiated new car orders

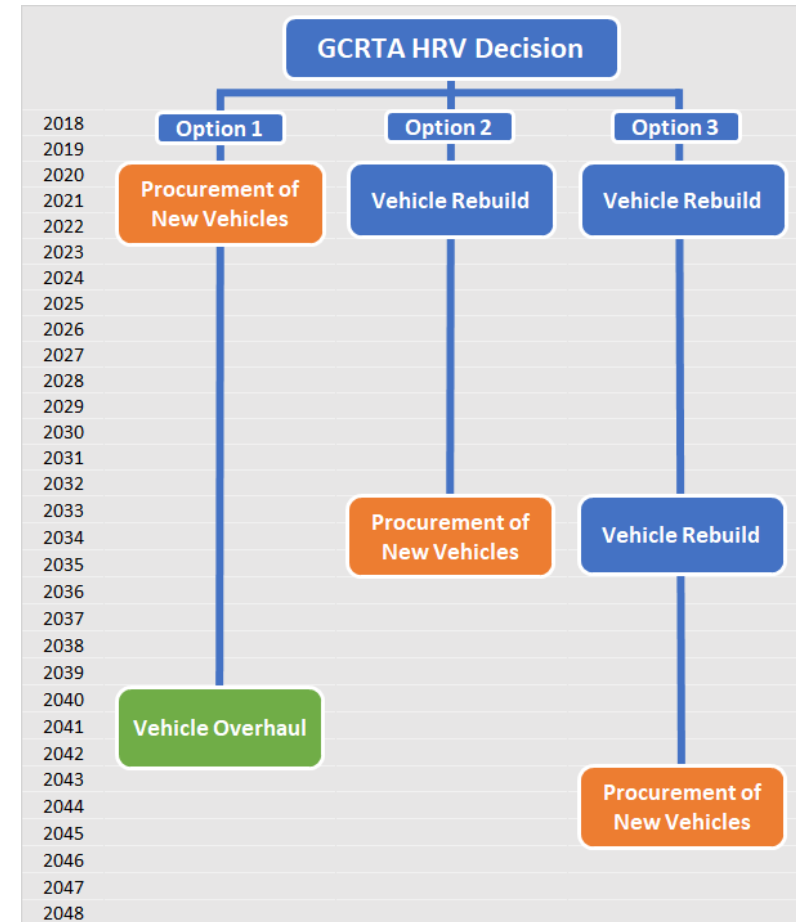
HRV ANNUAL MAINTENANCE COST PER ACTIVE VEHICLE VS PEER FLEETS



HRV Cost Estimates

- Option 1: new car delivery at the end of estimated life (5 years)
 - Begin procurement next year
 - Overhaul vehicles in 2040 at midlife (15 years)
 - Total 30-year lifecycle cost \$398 M
- Option 2: overhaul vehicles at end of estimated life
 - New car procurement at the end of extended estimated life (2033)
 - Total 30-year lifecycle cost \$410 M
- Option 3: overhaul the vehicles twice
 - New car procurement at the end of extended estimated life (2042)
 - Total 30-year lifecycle cost \$475 M

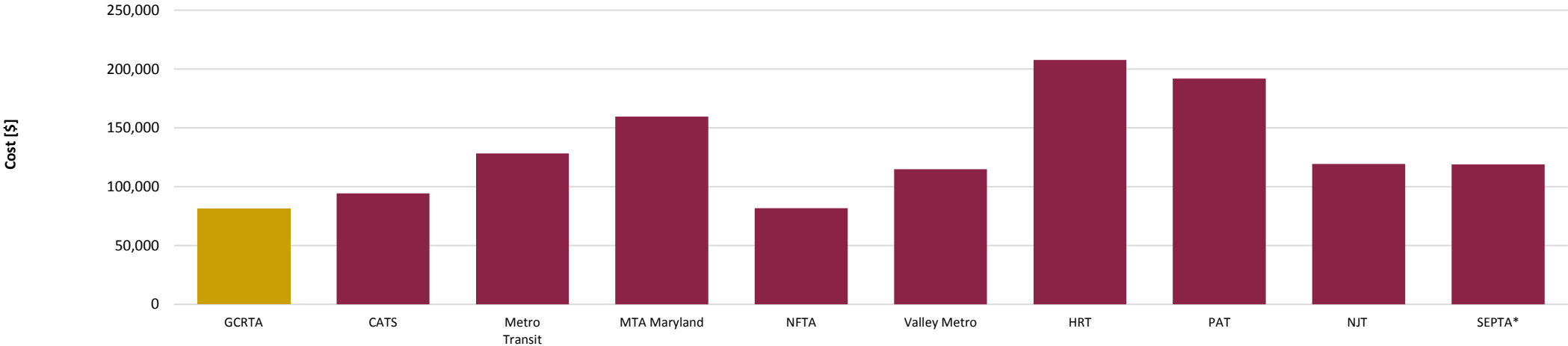
Note: 2018 dollars



Phase 1: LRV Peer Review

- RTA's fleet is the second oldest major LRV fleet in the country
 - SEPTA operates the oldest fleet, and has begun new car planning process
- RTA's annual maintenance costs are 18% lower than peer average
 - RTA is in the top 10 amongst peer agencies for maintenance costs

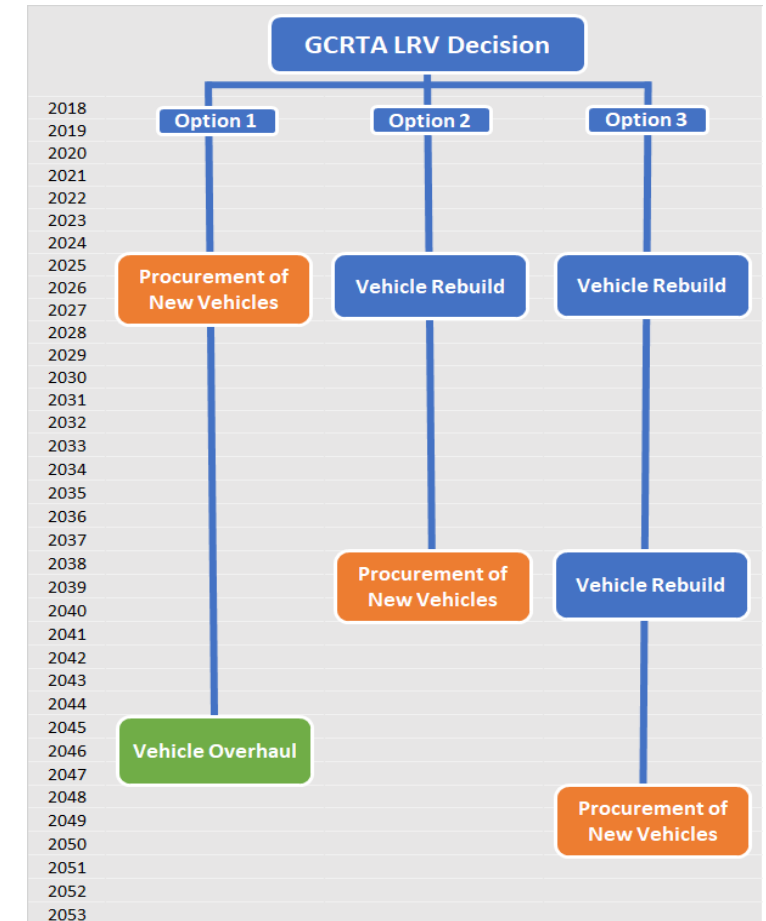
LRV ANNUAL MAINTENANCE COST PER ACTIVE VEHICLE VS PEER FLEETS, FROM NTD 2016 DATA



LRV Cost Estimates

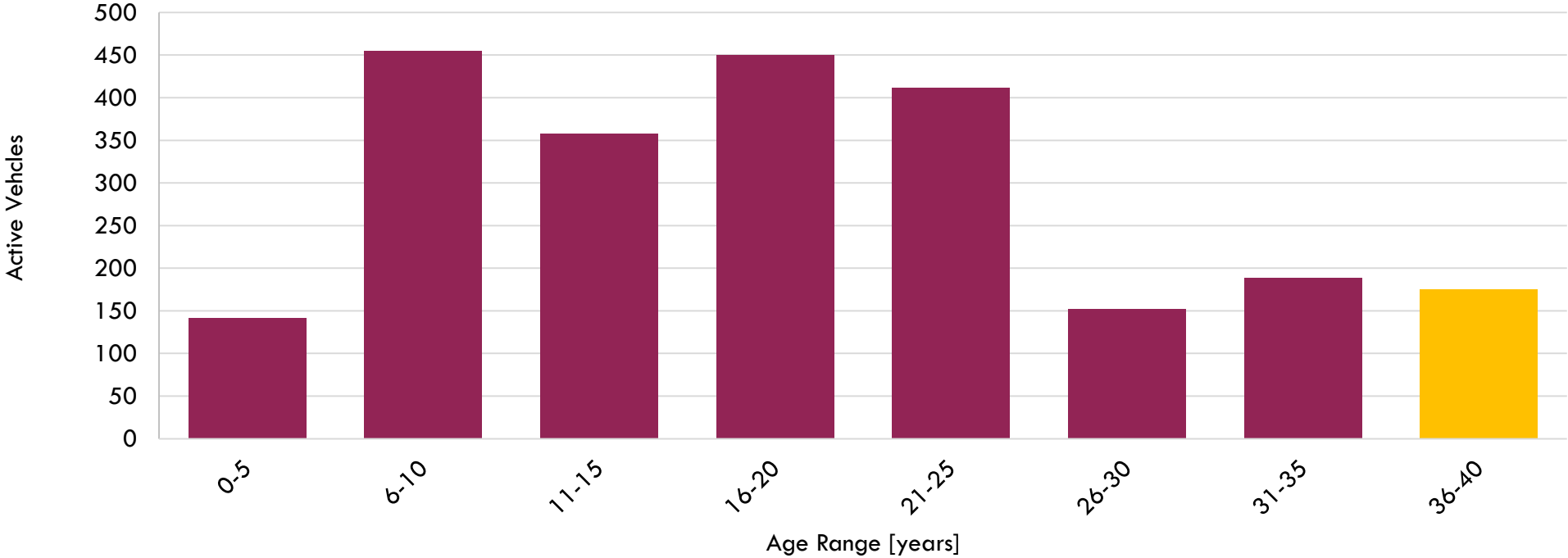
- Option 1: new car delivery at the end of estimated life (10 years)
 - Begin procurement in 2025
 - Overhaul vehicles in 2045 at midlife (15 years)
 - Total 30-year lifecycle cost \$317 M
- Option 2: overhaul vehicles at end of estimated life
 - New car procurement at the end of extended estimated life (2038)
 - Total 30-year lifecycle cost \$339 M
- Option 3: overhaul the vehicles twice
 - New car procurement at the end of extended estimated life (2048)
 - Total 30-year lifecycle cost \$413 M

Note: 2018 dollars



Phase 1: LRV Peer Review

RTA LRV FLEET AGE VS. PEER AGENCIES



Risk Associated with Aging Fleets

- In-service failures increase
- Customer service degrades
- Service reliability and on-time performance suffers
- Parts obsolescence increases
- Maintenance costs and frequency increases
- Gap widens between current standards and as-built standards



Recommendations

- Based on the results of the vehicle inspections and life cycle cost analysis, LTK recommends the following
 - Do not invest major capital into the existing fleets
 - Begin the procurement process for new HRV's in the near future
 - Begin the process of procuring new LRV's in the next 5 years
 - Hire Firm to assist with new HRV procurement including specification, procurement, quality assurance and facility upgrades.
- LTK recommends the procurement of two different fleets (HRV and LRV) rather than a single, common car to serve both high and low platforms.
 - A single, common car fleet would require significant infrastructure work at rail stations
 - A single, common car fleet eliminates the ability to phase in vehicle purchase and delivery



Appendix E

Fare Equity Analysis Pillar Study



GCRTA Fare Analysis

Final Report Summary of Project and Final Recommendations

December 3, 2019

Presentation to the
External and Stakeholder Relations & Advocacy Committee
GCRTA Board of Trustees

PURPOSE AND GOALS OF STUDY



One of five studies that supports the Strategic Plan

Enable GCRTA to better understand its ridership, and the relationships between changes in fares, fare structure, fare collection, ridership and revenue

Based on research, suggest changes to GCRTA fares and fare collection to better support GCRTA's goals and strategic vision, as well as reflect best practices in the US

Based on research, provide GCRTA with improved tools to analyze impacts of fare changes and meet FTA requirements

RESEARCH EFFORTS



- Onboard Rider Survey
 - Improve GCRTA's understanding of how riders used transit
 - Obtain statistical information to meet Federal Transit Administration requirements, including Title VI anti-discrimination analyses
 - 3,719 surveys collected Nov. 9 – Dec. 3, 2018, all day, weekdays and weekends.
- Public Outreach with Opinion Survey and Online Survey
 - Questions rephrased & additional questions on policies and effectiveness
 - 546 surveys collected – Spring 2019
 - 1,066 surveys collected – Fall 2019
- Peer Review
 - Major Ohio Agencies
 - Similar size, operations and climate

FARE POLICY GOALS



- Related to value provided to customer
- Related to cost of providing the service
- Related to whether riders provide tax support to RTA
- Related to whether riders pay a fair share of costs (farebox recovery)
- Related to riders' ability to pay
- Promote seamless intermodal travel
- Promote prepayment of fares
- Simple to communicate to riders and operators
- Promotes fare payment and easy to enforce
- Easy to cooperate with third parties
- Maximizes ridership
- Maximizes revenue

KEY ISSUES IDENTIFIED



- Cleveland's transit network design requires about half of all riders to transfer, but some riders, especially low-income and minorities, pay excessively for transferring
- Over half of trips are taken by riders who are best served by a monthly or weekly pass, but about half of these, especially low-income and minorities, are paying more than they could because they do not purchase a pass or purchase a weekly instead of a monthly pass
- The Park & Ride surcharges adds complexity to fares without raising significant revenue
- Most transit agencies charge the maximum allowable for Paratransit (twice the base fare) and do not provide passes
- Aging fare equipment will be increasingly expensive to maintain and does not meet the needs of GCRTA's future

ADDITIONAL RESEARCH EFFORT



- Public Outreach with Opinion Survey and Online Survey
 - Additional questions on policies and effectiveness
 - 1,066 surveys collected – Fall 2019
- Analysis of Impacts of Possible Changes

Household Income			
	Onboard Survey	Public Outreach	
		Actual	Weighted
Less than \$25,000	47.4%	22.6%	47.4%
\$25,000 - \$29,999	13.7%	10.0%	13.7%
\$30,000 – \$34,999	10.9%	5.6%	10.9%
\$35,000 - \$49,999	11.2%	10.3%	11.2%
\$50,000 - \$74,999	8.2%	17.7%	8.2%
\$75,000+	8.6%	33.8%	8.6%

Race / Ethnicity			
	Onboard Survey	Public Outreach	
		Actual	Weighted
American Indian or Alaska Native	2.0%	0.7%	2.0%
Asian or Asian American	2.2%	3.4%	2.2%
Black or African American	59.3%	20.8%	59.5%
Hispanic or Latino	4.3%	3.6%	4.3%
Multiracial or another race	3.0%	3.1%	3.0%
Native Hawaiian or other Pacific Islander	0.3%	0.2%	0.3%
White or Caucasian	21.6%	66.7%	21.5%
Other	7.2%	1.4%	7.1%

ADDITIONAL RESEARCH RESULTS (WEIGHTED)



Riders Who Stated Why They Don't Use A Monthly Pass

Don't Use Transit Enough	36%
Can't Afford It	31%
Can't Predict Transit Use	26%
Don't Know Where to Get It	5%
Hard to Get It	3%

Riders Who Stated Why They Don't Use A 7-Day Pass

Can't Predict Transit Use	31%
Don't Use Transit Enough	26%
I Use a Monthly Pass	25%
Can't Afford It	5%
Don't Know Where to Get It	3%
Hard to Get It	0%

Riders Who Stated Why They Don't Use A 5-Trip Card

Another Product is Better For Me	55%
Didn't Know It Included Free Transfers	14%
Can't Afford It	14%
Hard to Get It	6%
Don't Know Where to Get It	5%

ADDITIONAL RESEARCH RESULTS (WEIGHTED)



Riders Were Asked: Which of These Should GCRTA Implement?				
	All Riders		Income < \$25,000	
	Should Implement	Most Important	Should Implement	Most Important
Reduce the cost of the All Day Pass.	44%	26%	52%	35%
Offer reduced price transfers with cash payments.	34%	10%	37%	15%
Make Monthly and 7-Day Passes available at more locations.	33%	10%	32%	9%
Improve our communications about our fare products and how to buy them.	32%	13%	31%	9%
Implement Smartcards that store Passes and/or trips with free transfers.	32%	12%	28%	7%
Make 5-Trip Farecards available at more locations.	28%	11%	22%	13%

RECOMMENDATIONS



- **Immediate Low Cost Changes:**
 - Improve communications about fare products and how to buy them
 - Make 5-Trip Farecards available at more locations
 - Revise 5-Trip Farecards to be fewer trips at the same price per trip
- **Important Changes with Greater Financial Impact:**
 - Reduce the cost of Adult & Senior/Disabled Day Passes to two boardings (\$5 & \$2.50)
 - Approximate Revenue Loss: -\$1,300,000; Approximate Ridership Gain: 270,000
 - Raise Park & Ride Surcharge
 - Adjust Paratransit Fares, especially passes, to reflect higher cost of providing service

RECOMMENDATIONS

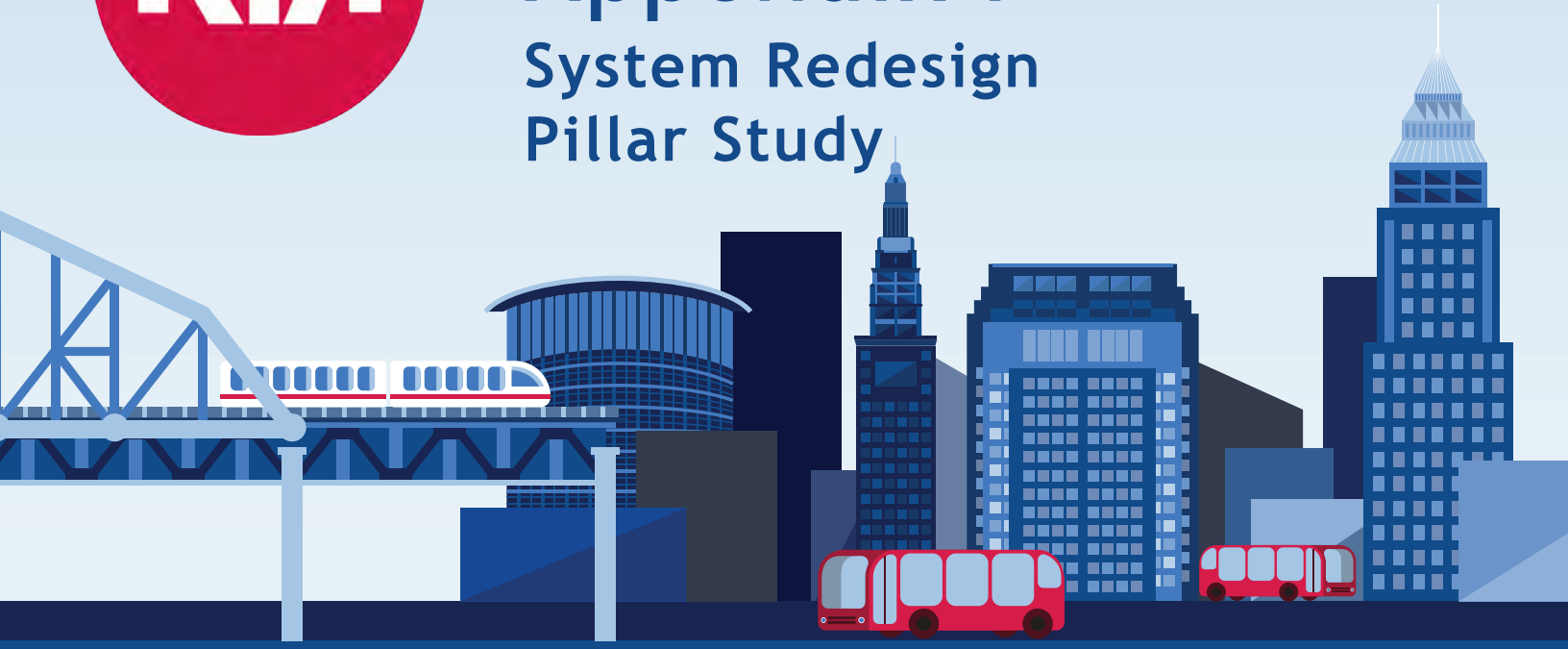


- Long-term Improvements with a new fare collection system
 - Implement reduced price transfers with smartcard stored value
 - Regional Multi-modal Accounts
 - Fare Capping / Best Fare
 - Cloud-Based with Open Architecture



Appendix F

System Redesign Pillar Study





DRAFT

RTA System Redesign Study
Final Presentation

JARRETT
WALKER
+ ASSOCIATES

Let's think about transit

What is the System Redesign Study?

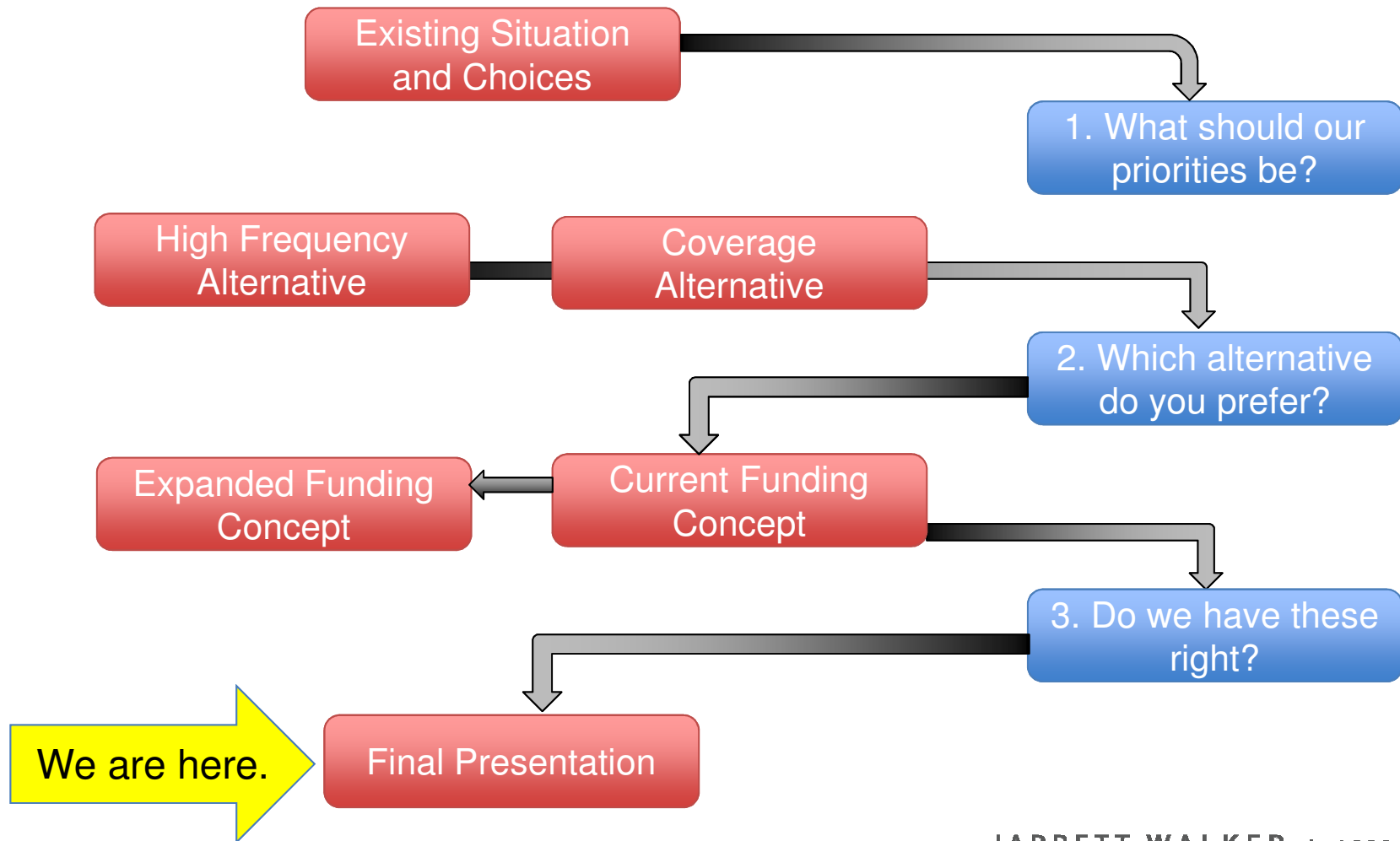
- Is the design of the bus network right?
- Does it reflect today's values and priorities?
- If not, how should it be revised?

- This process was designed to learn about the public's priorities for future service planning.

Study Process

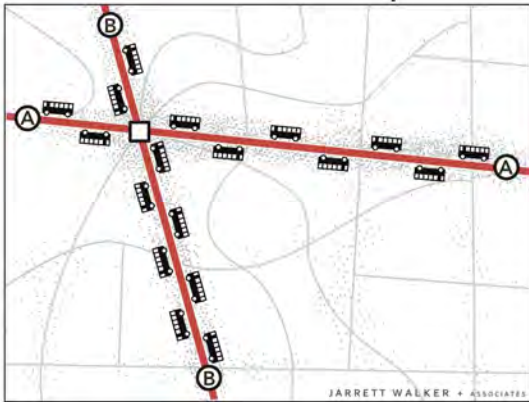
Technical and Design Work

Questions to the Public



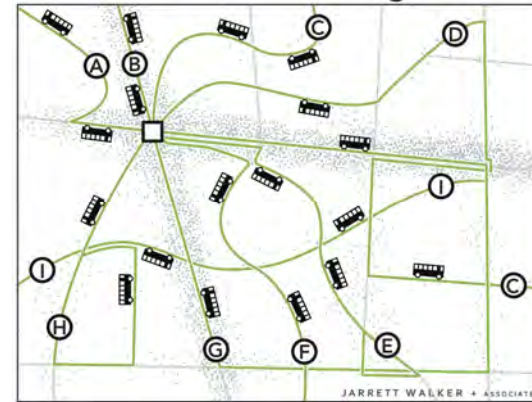
Review of Key Choices

The Ridership / Coverage Tradeoff



Ridership Goal

- “Think like a business.”
- Focus where ridership potential is highest.
- Support dense and walkable development.
- Maximum competition with cars
- Maximum reduction of vehicle miles traveled



Coverage Goal

- “Think like a public service.”
- “Access for all”.
- Service for people who are located in hard-to-serve places and can’t drive or don’t have access to a car.

Survey 1

Technical and Design Work

Questions to the Public

Existing Situation and Choices

1. What should our priorities be?

High Frequency Alternative

Coverage Alternative

2. Which alternative do you prefer?

Expanded Funding Concept

Current Funding Concept

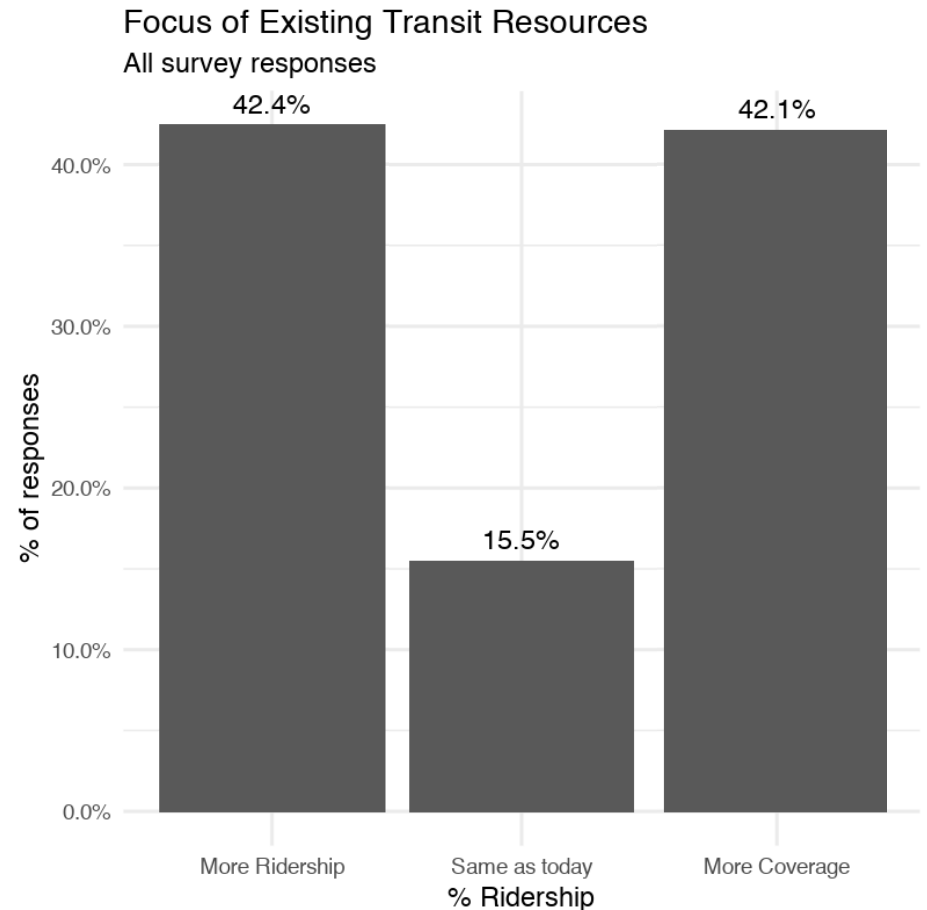
3. Do we have these right?

We are here.

Final Presentation

Survey 1

- Asked respondents to say whether they would rather have RTA focus on the ridership or coverage goal.
- Responses were almost evenly split.



Network Alternatives



We drew two alternative networks to show exactly what it would look like if we:







- Made ridership a higher priority at the expense of coverage (the High Frequency Alternative)

OR

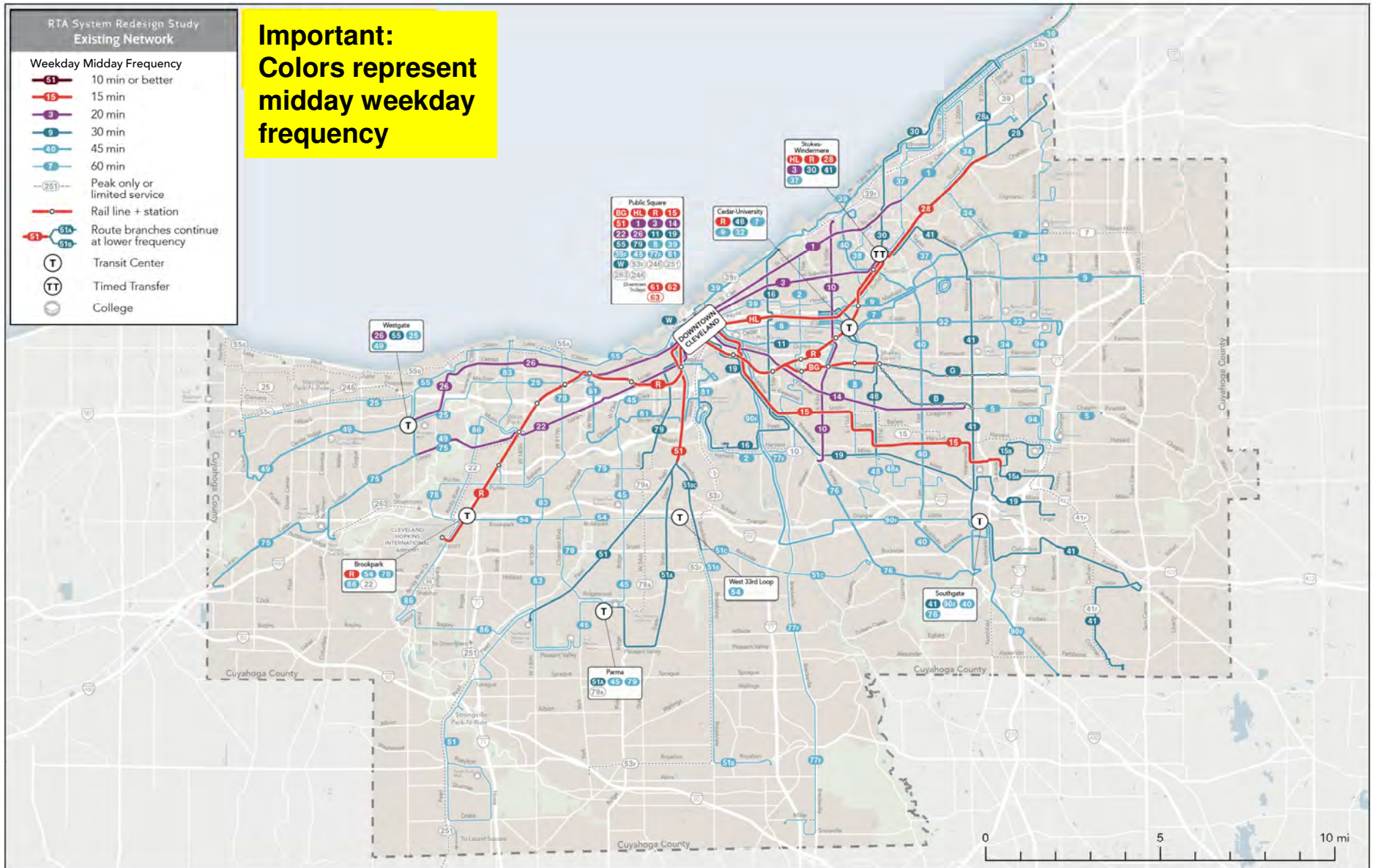
- Maintained all current coverage (the Coverage Alternative)

Reading our maps

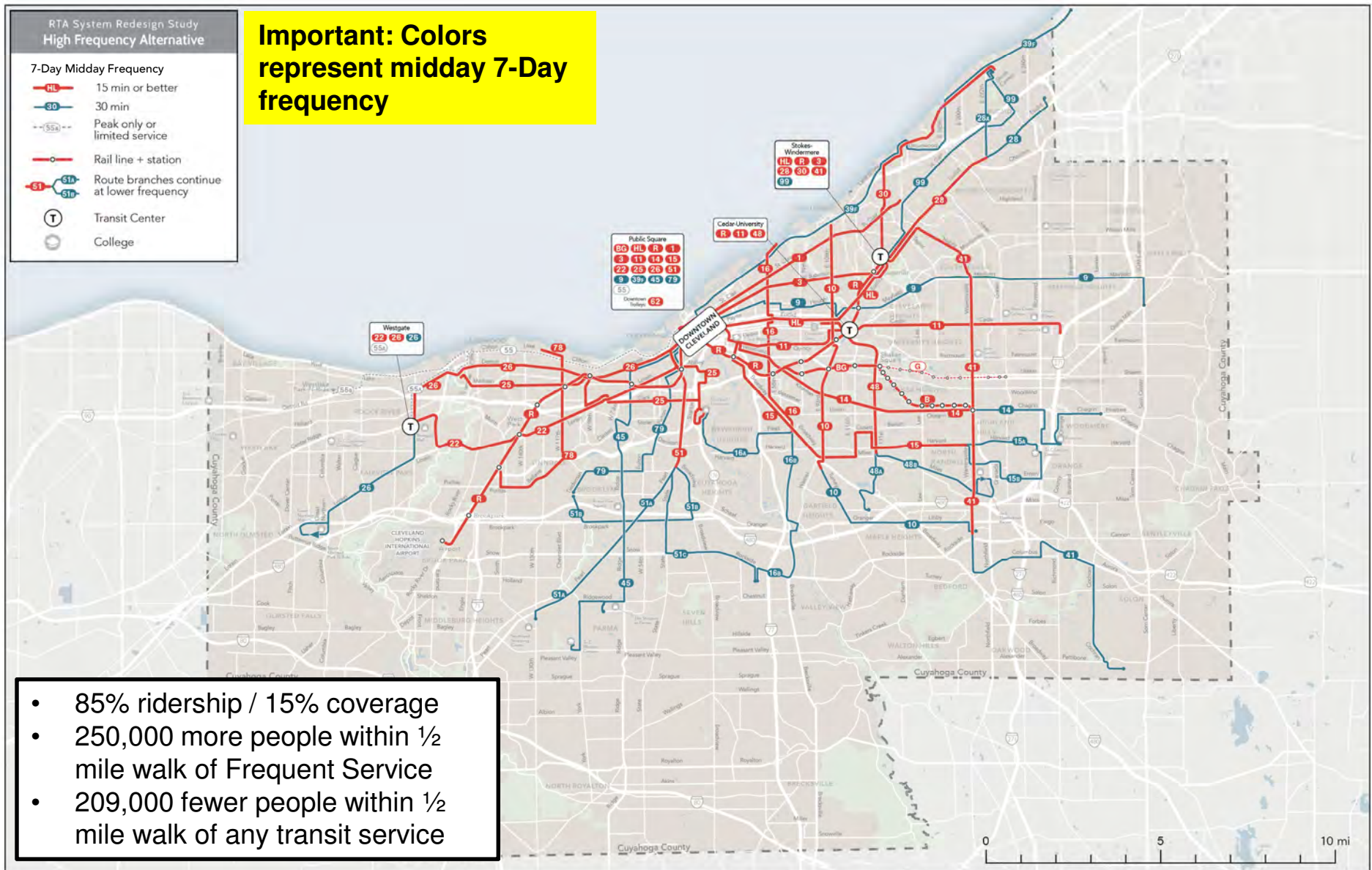
Colors represent midday frequency.

	10 min or better
	15 min
	20 min
	30 min
	45 min
	60 min
	Peak only or limited service

Existing Network

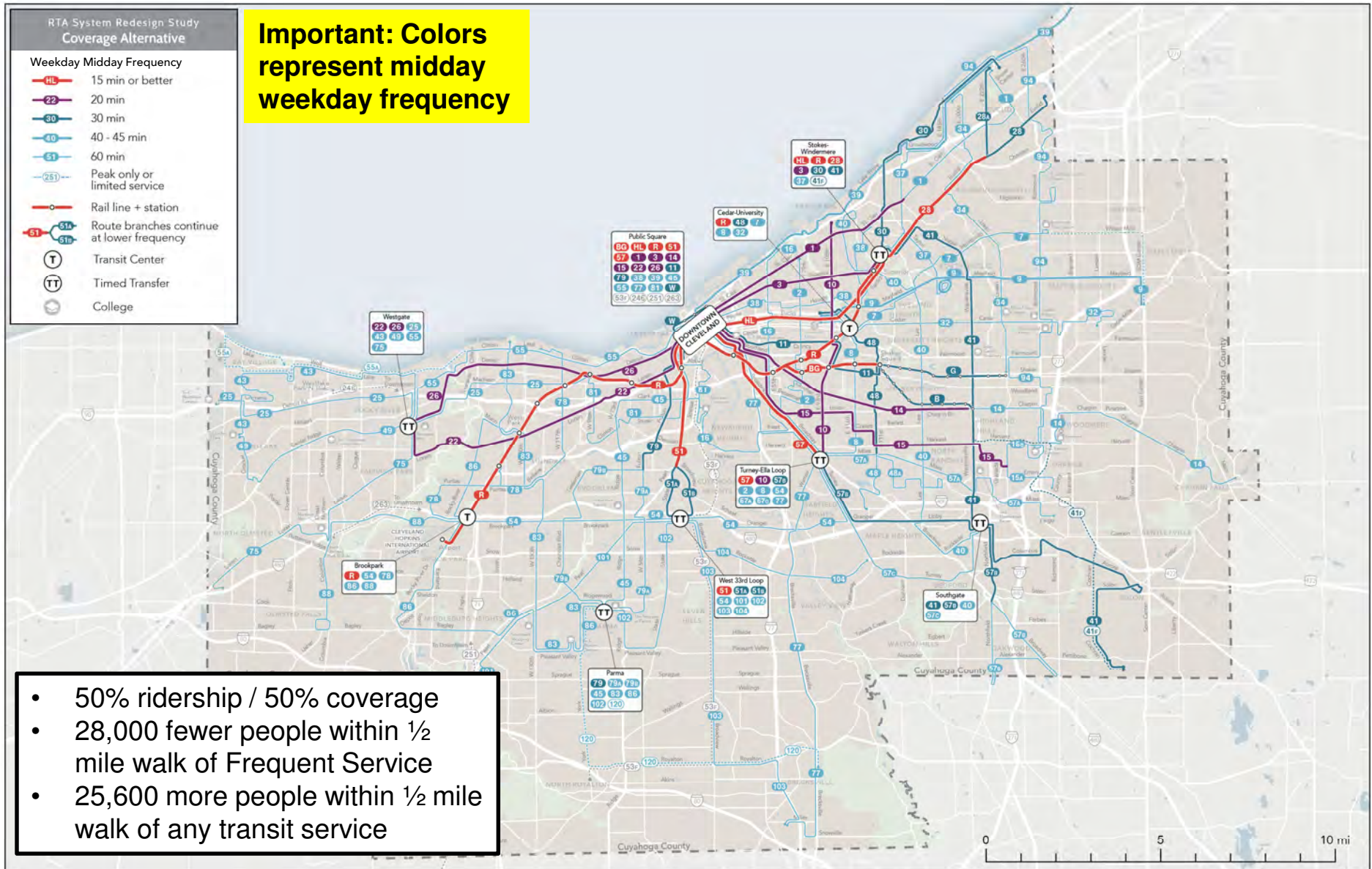


High Frequency (High Ridership) Alternative

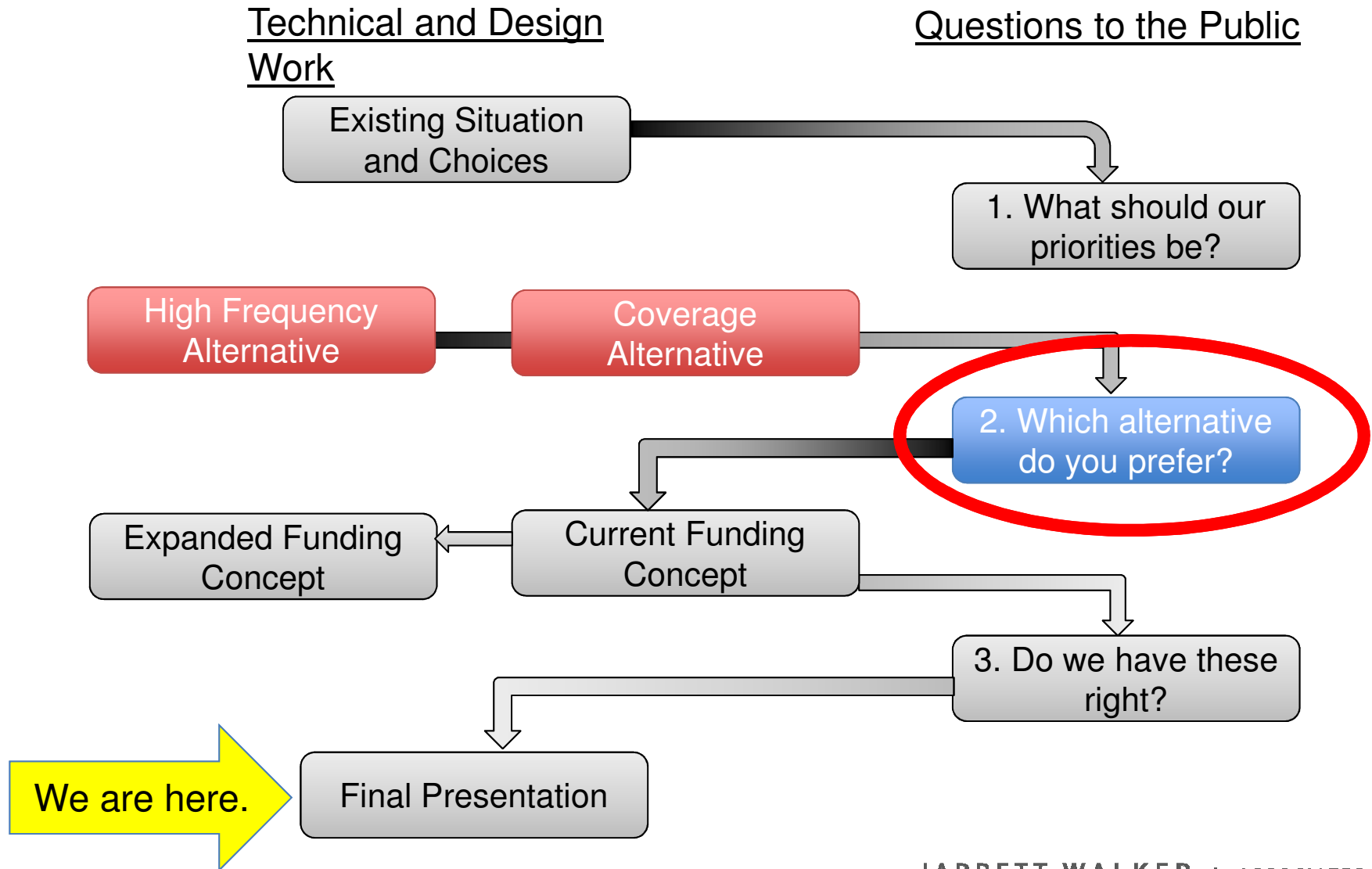


- 85% ridership / 15% coverage
- 250,000 more people within 1/2 mile walk of Frequent Service
- 209,000 fewer people within 1/2 mile walk of any transit service

Coverage Alternative

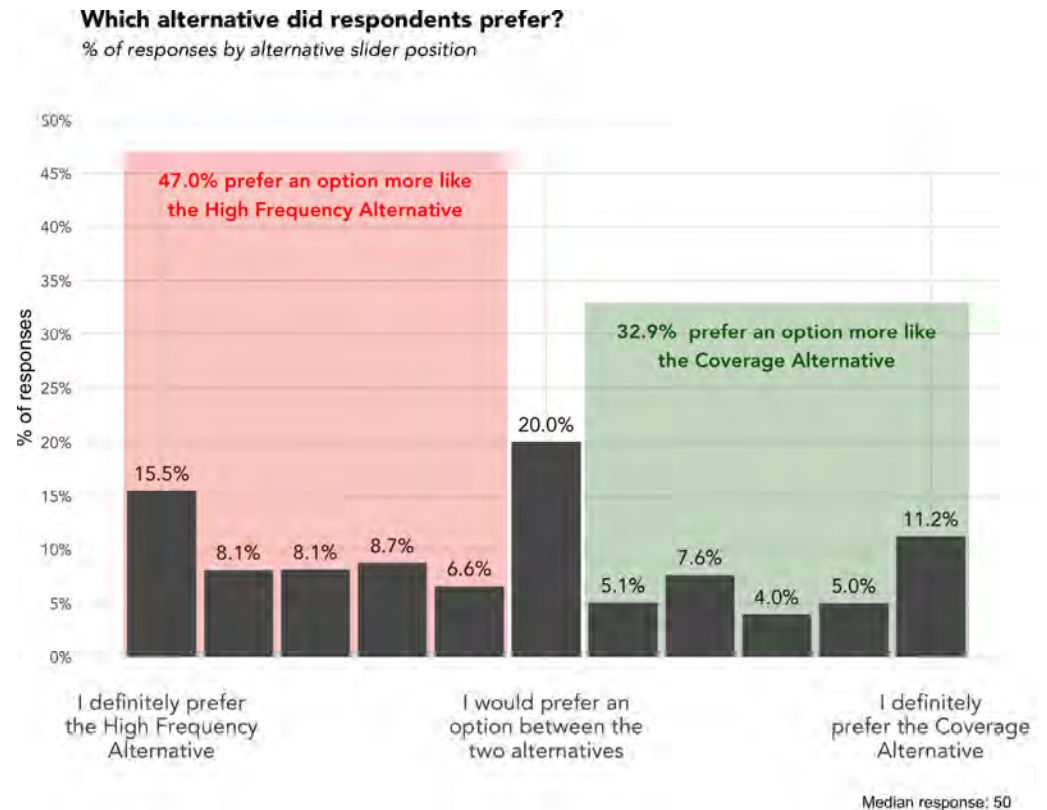


Survey 2



Survey 2

- Fewer than 1/3 prefer an option more like the Coverage Alternative.
- Almost half like the High Frequency (Ridership) Alternative.



Financial Network Concepts

Financial Concepts

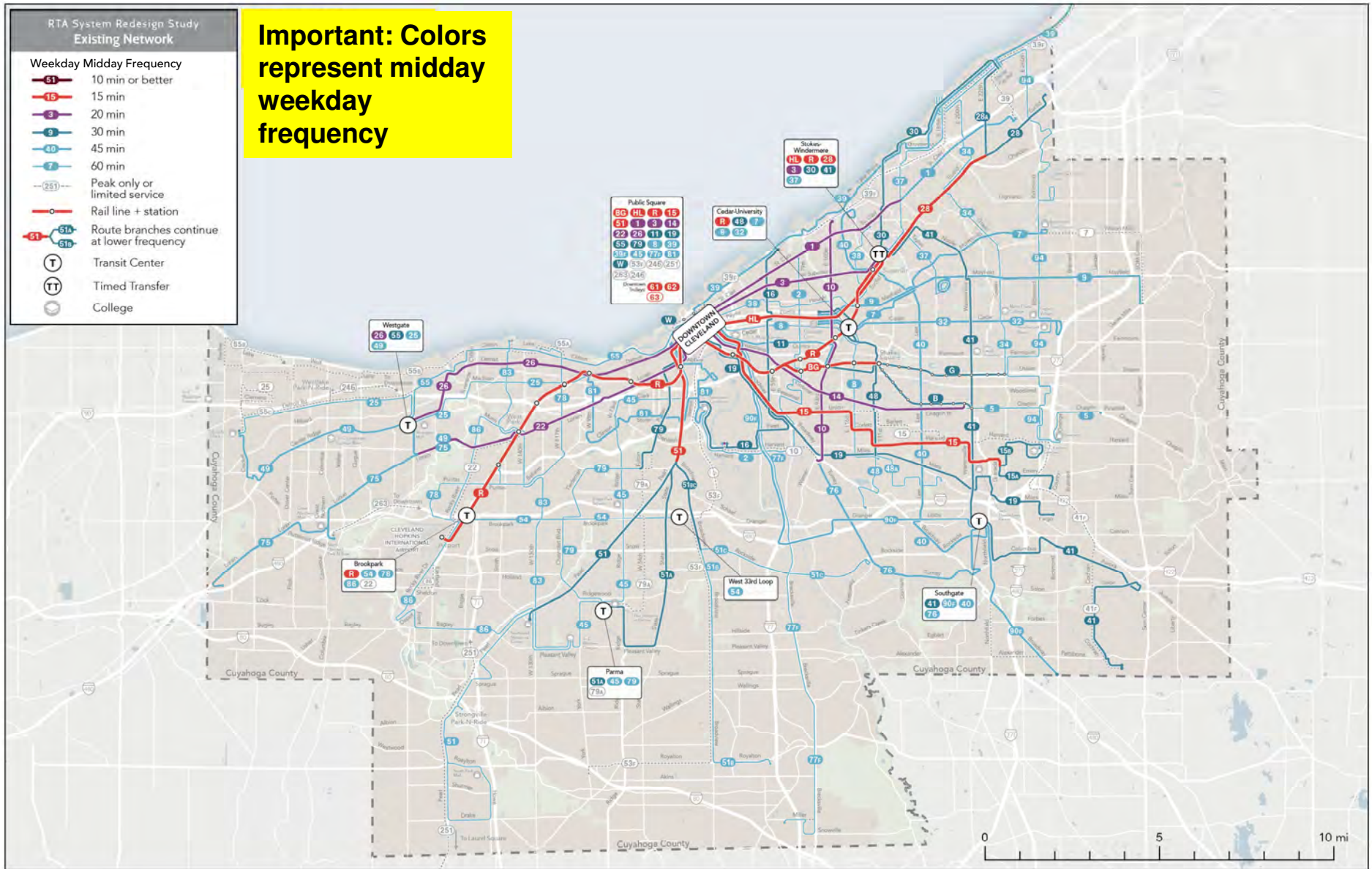
Based on survey results:

- Greater focus on ridership
- No reduction of coverage area

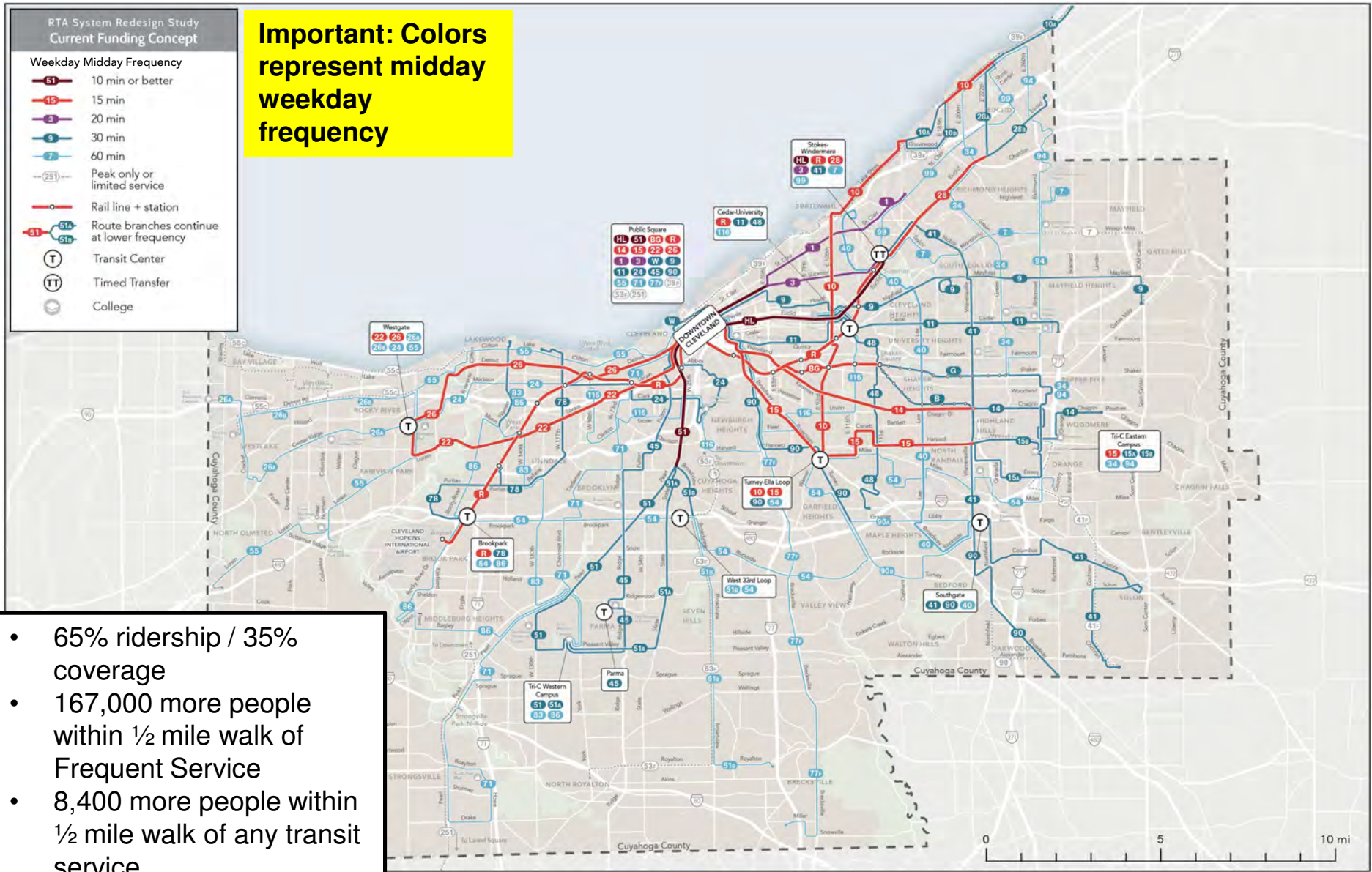
- **Current Funding Concept** – no change in resource level

- **Expanded Funding Concept** – Enough new resources to supply 25% more bus service (vehicle hours) (+30m)

Existing Network



Current Funding Concept



- 65% ridership / 35% coverage
- 167,000 more people within 1/2 mile walk of Frequent Service
- 8,400 more people within 1/2 mile walk of any transit service

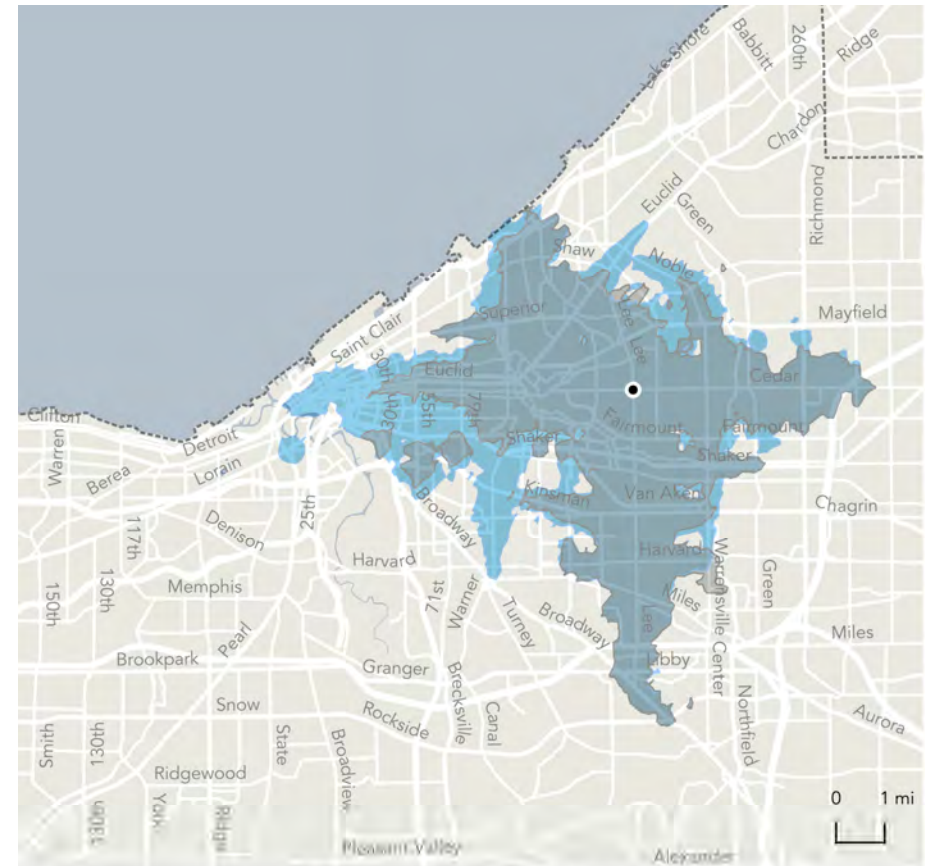
Measuring Usefulness

In an hour, where could I go with the Current Funding Concept?

The blue area is newly reachable.



... From Cedar & Lee



How many jobs or residents are reachable from this location with the Current Funding Concept, compared to the Existing Network?

Jobs	Residents
+79,200 (+78%)	+58,900 (+33%)

Measuring Usefulness

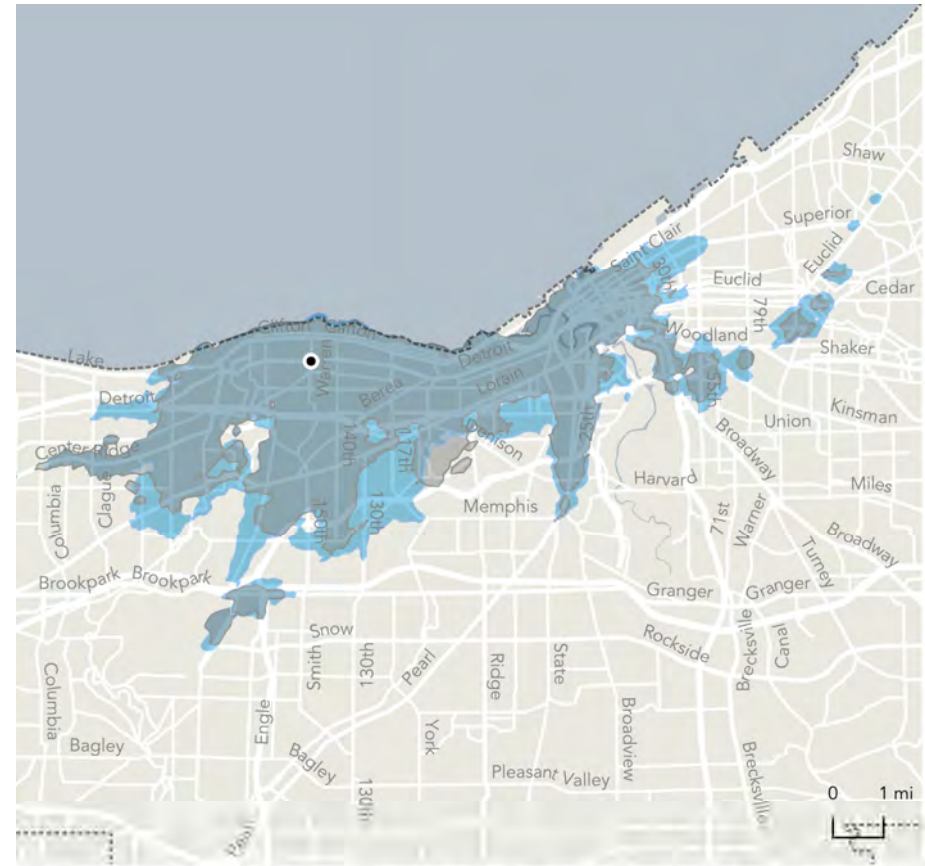
In an hour, where could I go with the Current Funding Concept?

More places to go = more jobs I could hold, places I could shop, services I could access.

The blue area is newly reachable.



... from Detroit & Warren?



How many jobs or residents are reachable from this location with the Current Funding Concept, compared to the Existing Network?

Jobs	Residents
+25,400 (+17%)	+40,900 (+24%)

Access to Jobs:

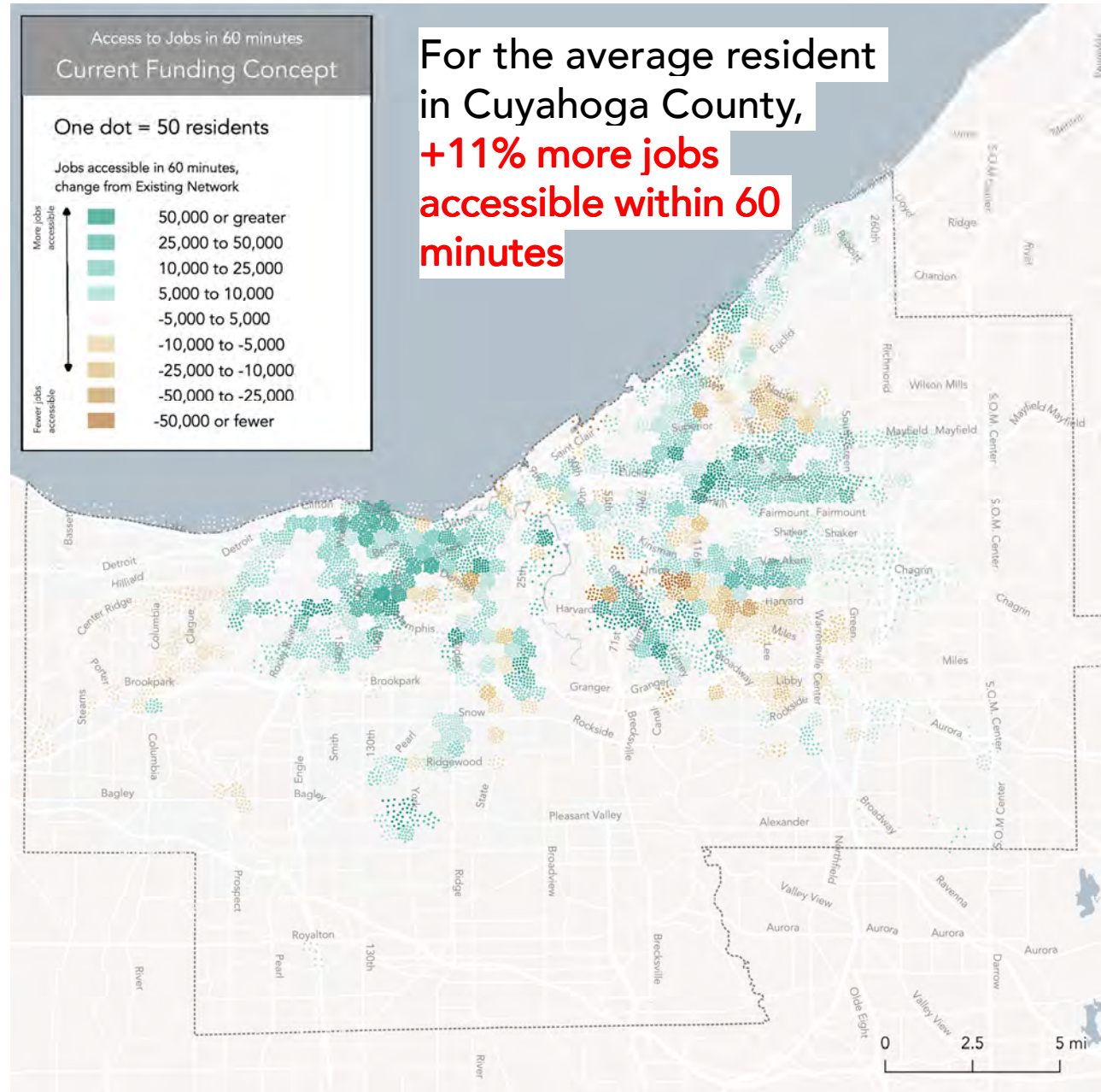
Current Funding Concept

Measuring usefulness across the entire county.

Green = more jobs accessible

Brown = fewer jobs accessible

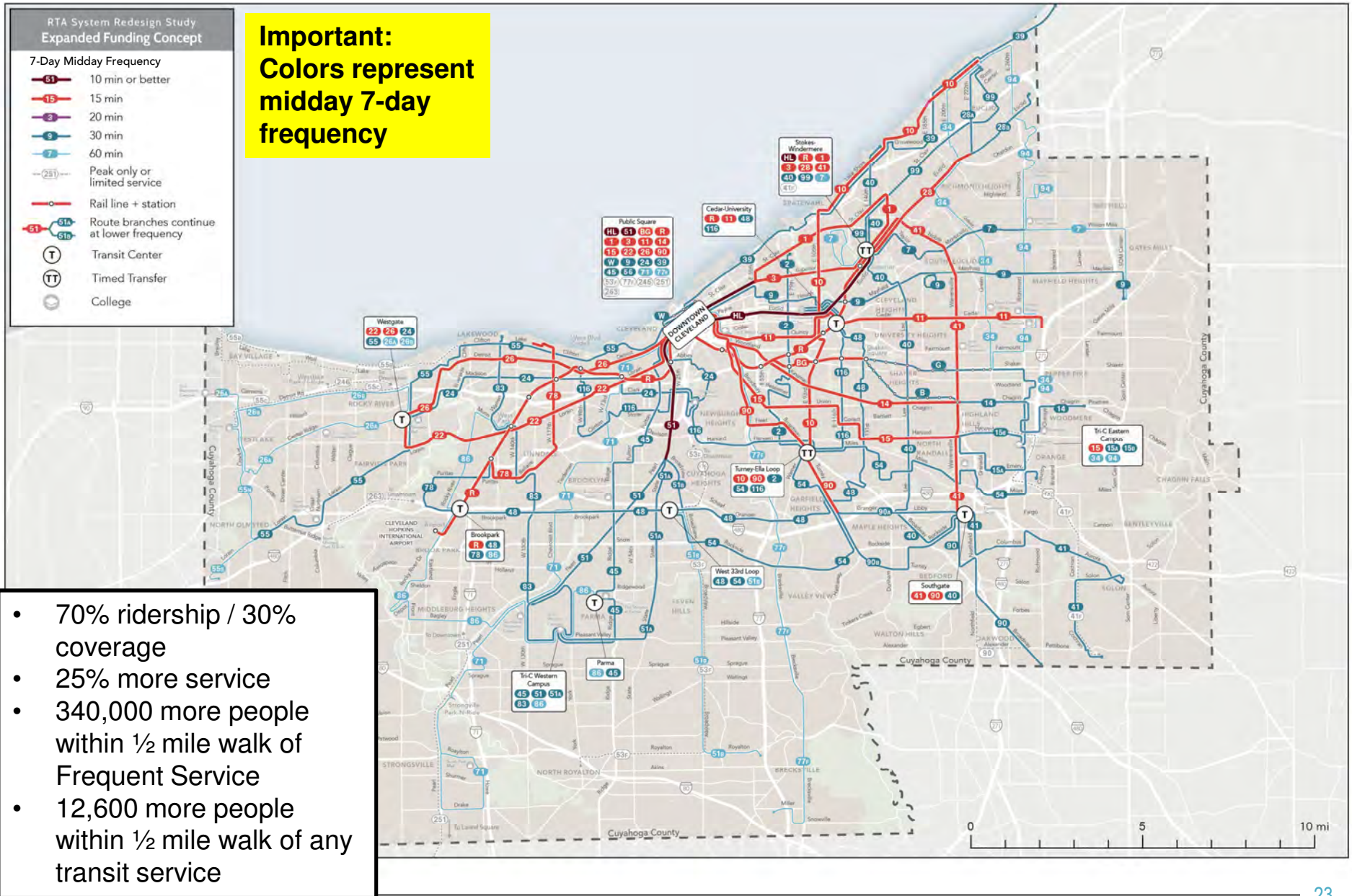
Each dot = 50 people



Current Funding Concept

- Expanded frequent network.
 - Detroit, E 105th/Lakeshore
- Access to 11% more jobs in 60 min.
- More one-seat rides
 - between low-income neighborhoods and entry-level jobs.
 - to and from downtown
 - to and from University Circle jobs
- Downtown circulation to be provided more by frequently operating regular routes. Trolleys that duplicate regular routes are removed.
- All bus park-n-rides continue to be served with downtown service, but not always via freeway.

Expanded Funding Concept



Access to Jobs

Measuring usefulness across the entire county.

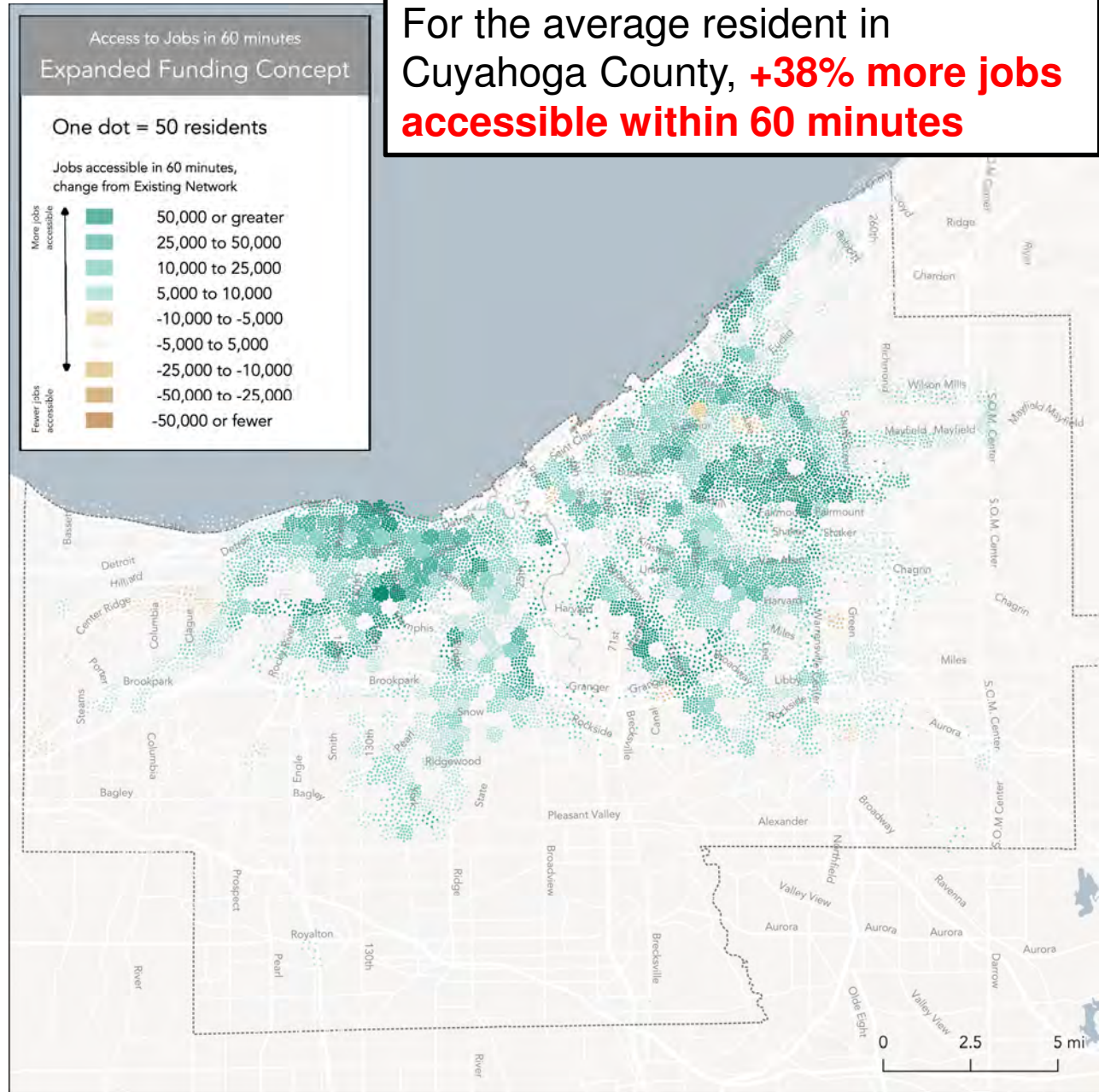
Green = more jobs accessible

Brown = fewer jobs accessible

Each dot = 50 people

Almost all areas gain access to more jobs than today.

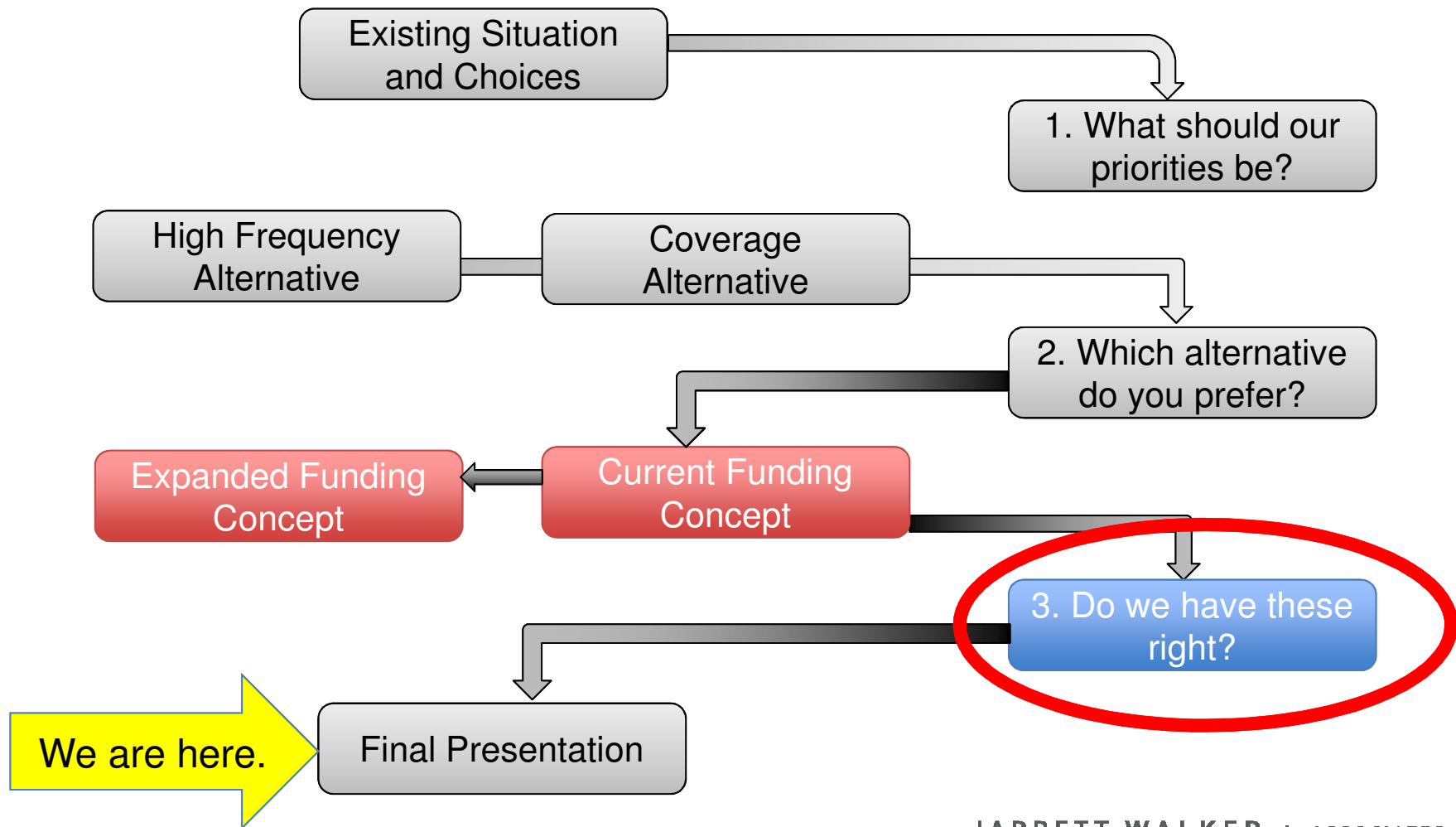
For the average resident in Cuyahoga County, **+38% more jobs accessible within 60 minutes**



Survey 3

Technical and Design Work

Questions to the Public

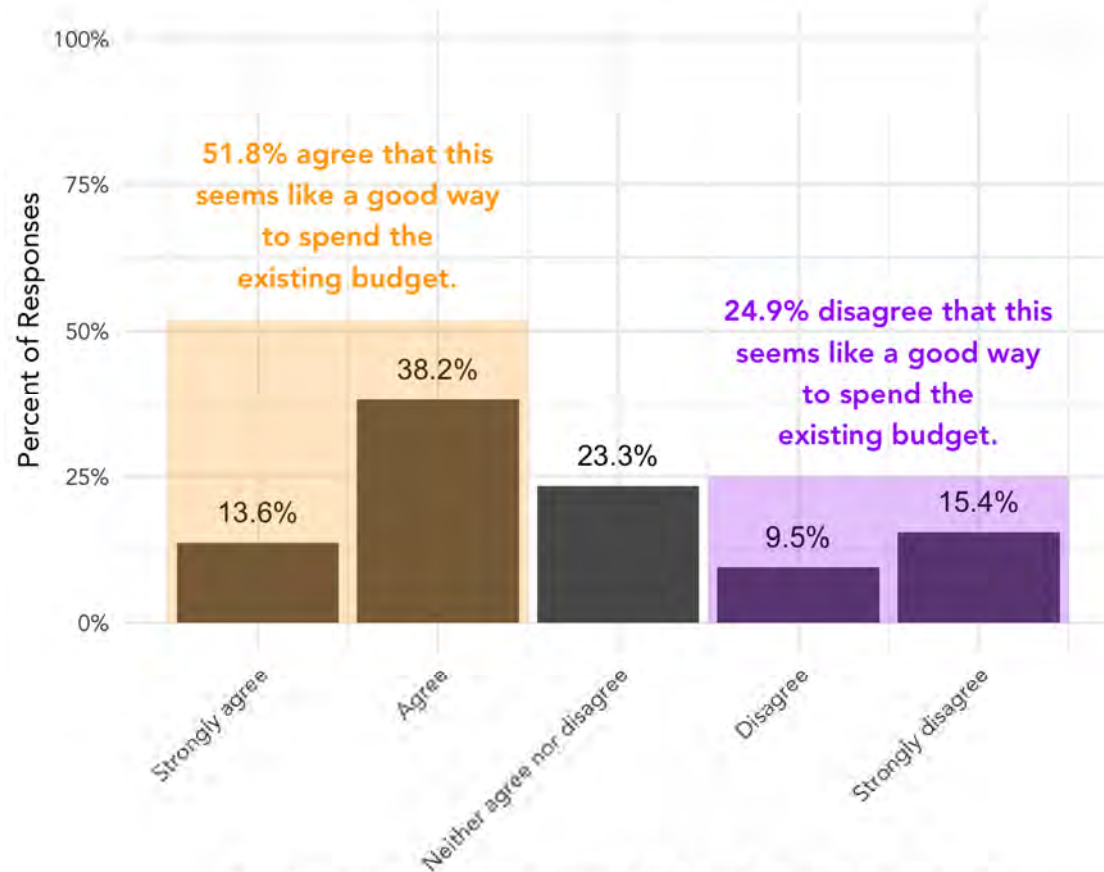


Survey 3

- Key questions:
 - Do you agree that the Current Funding Concept looks like a good way to spend the existing budget?
 - Do you agree that the Expanded Funding Concept looks like a good way to expand service?
 - In the Expanded Funding Concept, do you think we have the balance of weekday and weekend service right?

Current Funding Concept

Do you agree that the Current Funding Concept looks like a good way to spend the existing budget?



Do you agree that the Current Funding Concept looks like a good way to spend the existing budget?

By 2-1 margin respondents said the the Current Funding Concept “looked like a good way to spend the existing budget.”

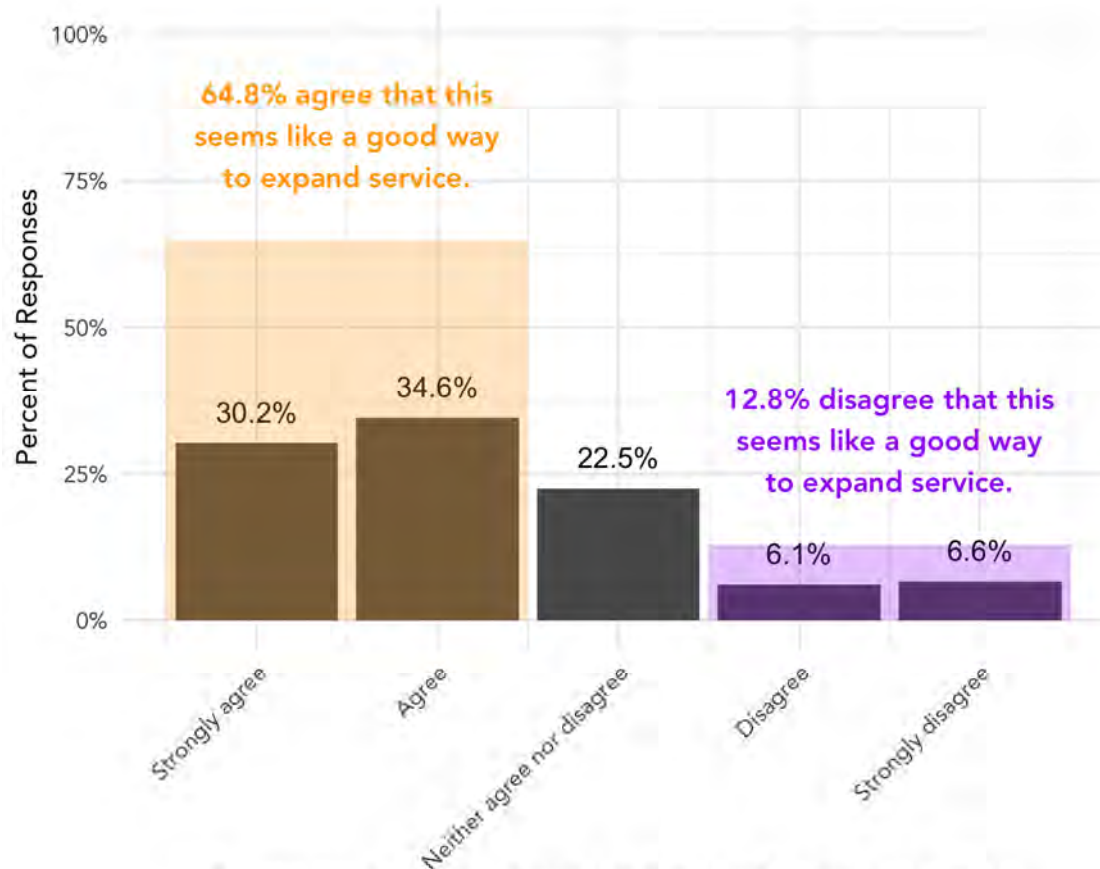
Half of the negative response was about one small issue: Park and Ride Express.

This will still be controversial

- All “current funding” service changes are controversial.
- The more they achieve, the more controversial they are.
- However, we have done three rounds of outreach, with many opportunities to participate. We have heard the community’s values and the plan reflects them.
- More hearings would be conducted before implementation.

Expanded Funding Concept

Do you agree that the Expanded Funding Concept looks like a good way to expand service?



Do you agree that the Expanded Funding Concept looks like a good way to expand service?

By a 5-1 margin respondents agreed that the Expanded Concept looked like a good way to expand service.

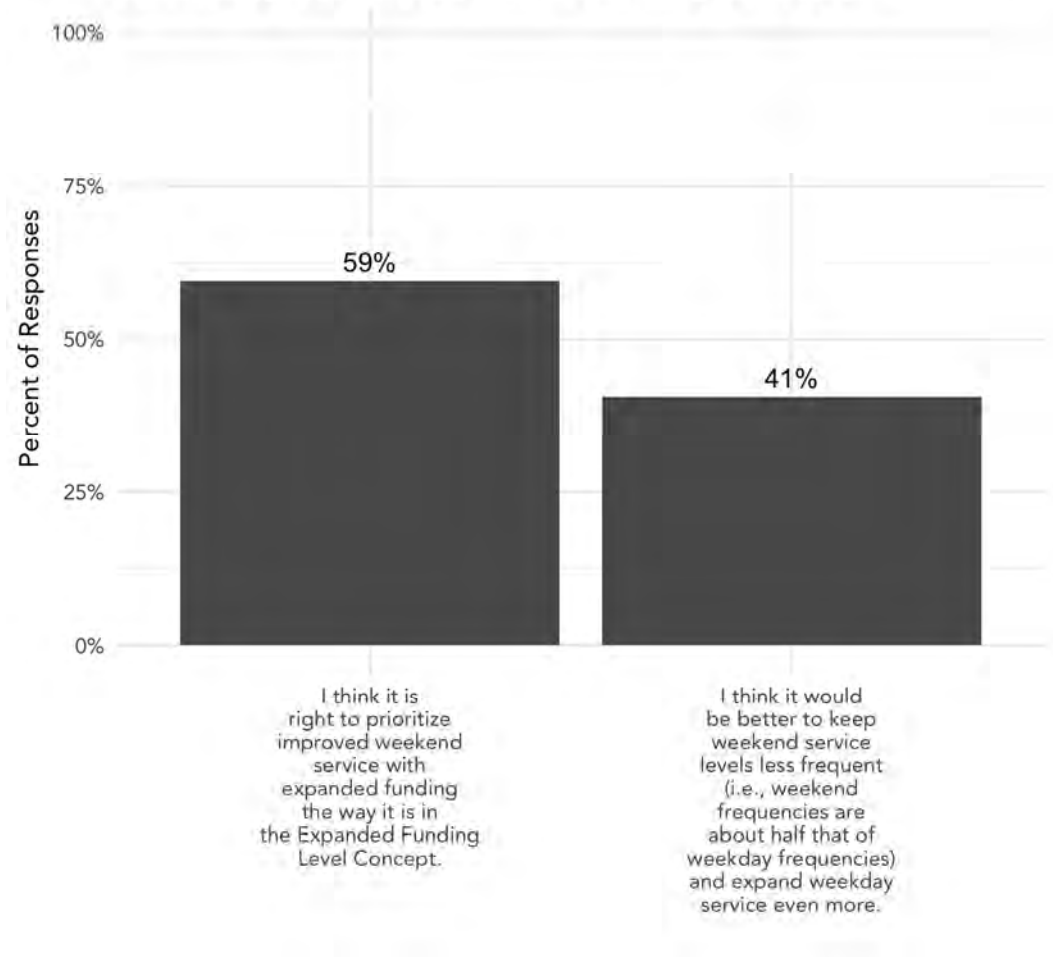
Weekday vs. Weekend Service

The Expanded Funding Concept expanded weekend service.

(There are no funds to do this in the Current Funding Concept)

A majority (59%) said this seemed right.

Do you think we have the balance of weekday and weekend service right (in the Expanded Funding Concept)?

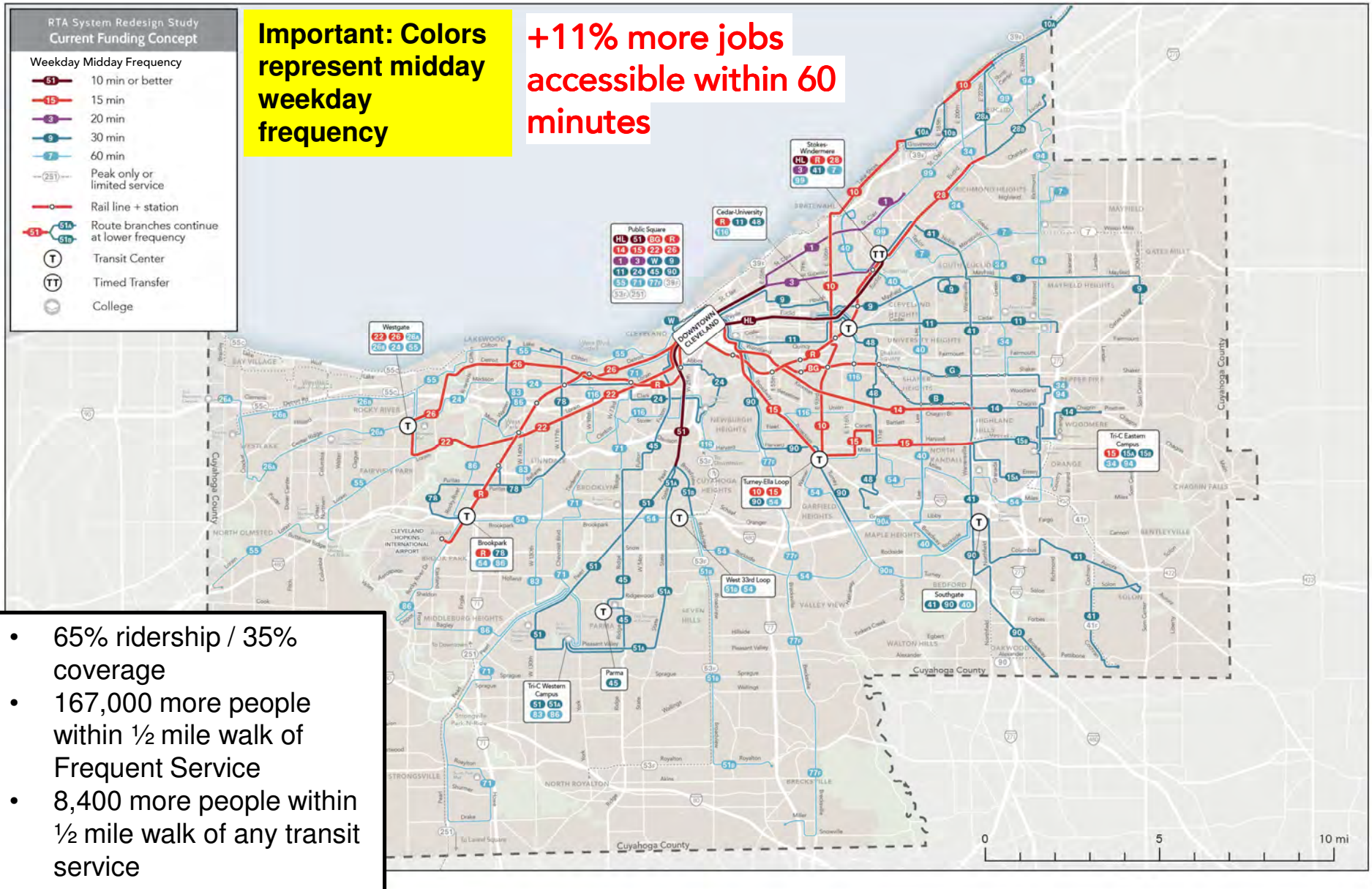


Summary

Summary

- No new resources are now available for service expansion.
- **Conclusion:** To reflect the values and priorities that the public have expressed within current funding availability, RTA should shift to the Current Funding Concept.
- Expanded Funding Concept, and its benefits, could be a basis for later conversation about new resources.

Current Funding Concept



Current Funding Concept

- Expanded frequent network.
 - Detroit, Lorain, Kinsman, E 105th/Lakeshore
- Access to 11% more jobs in 60 min.
- More one-seat rides
 - between low-income neighborhoods and entry-level jobs.
 - to and from downtown
 - to and from University Circle jobs
- Downtown circulation to be provided more by frequently operating regular routes. Trolleys that duplicate regular routes are removed.
- All bus park-n-rides continue to be served with downtown service, but not always via freeway.



Appendix G

Efficiency & Operational Review Pillar Study





FINANCIAL ANALYSIS AND ECONOMIC FORECAST FOR THE GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY

FINAL REPORT

GREATER CLEVELAND PARTNERSHIP

DATE: OCTOBER 2019

WSP
SUITE 650 1015 HALF STREET SE
WASHINGTON, DC 20003
PHONE: +1 202-783-0241
WSP.COM

Contents

EXECUTIVE SUMMARY	1
1 PURPOSE	4
2 BACKGROUND.....	4
3 PEER BENCHMARKING	9
3.1 Overview.....	9
3.2 Peer Selection	9
3.3 Performance Results.....	11
3.4 Conclusions.....	20
4 RISKS AND OPPORTUNITIES.....	21
4.1 Overview.....	21
4.2 Stakeholder Interviewees.....	22
4.3 Findings.....	23
4.4 Conclusions.....	27
5 FINANCIAL OUTLOOK.....	28
5.1 Overview.....	28
5.2 Financial Outlook.....	28
5.3 Conclusions.....	30
6 COST EFFICIENCIES AND REVENUE ENHANCEMENT STRATEGIES	31
6.1 Overview.....	31
6.2 Operations	32
6.3 Assets.....	37
6.4 Planning	40
6.5 Conclusions.....	41
7 KEY PERFORMANCE INDICATORS	43
7.1 Overview.....	43
7.2 Peer Assessment	43
7.3 Tracking and Reporting	47
7.4 Conclusion	48
8 FUNDING OPTIONS.....	50
8.1 Overview.....	50
8.2 Promising New Revenue Sources.....	50
8.3 Alternative Scenarios	54
8.4 Conclusion	57
9 CONCLUSIONS AND NEXT STEPS.....	58
10 APPENDIX	60

List of Tables

Table 3-1:	Peer Agencies by Mode.....	10
Table 3-2:	Key Characteristics of Peer Agencies' Boards.....	19
Table 3-3:	Governing Bodies and Taxation Power of Peer Agencies.....	19
Table 4-1:	List of Stakeholder Interviewees.....	22
Table 4-2:	Major Risks and Opportunities.....	23
Table 7-1:	Peer Assessment Authority & Tracking.....	45
Table 7-2:	Peer Assessment Publications & Categories.....	45
Table 7-3:	Best in Class Assessment Authority and Purpose Categories.....	46
Table 7-4:	Best in Class Assessment Publication & Categories.....	47
Table 8-1:	Revenue Sources Assessment Criteria.....	50
Table 8-2:	Sales & Use Tax Evaluation Results.....	51
Table 8-3:	Property Tax Evaluation Results.....	52
Table 8-4:	Commercial Property Tax Evaluation Results.....	53
Table 8-5:	Alternative Growth Scenarios.....	54
Table 8-6:	RTA Project Priorities.....	56
Table 10-1:	Evaluation Results Summary Table.....	61

List of Figures

Figure 2-1: Population and Jobs Density by Census Block group with RTA System Redesign - High Frequency Network Concept.....	6
Figure 2-2: Population Density by 1990, 2000, 2010, and 2017 in Cuyahoga County	7
Figure 2-3: Job Change by Census Block group with Existing RTA Network.....	8
Figure 3-1: Operations and Maintenance (O&M) cost breakdown by mode (Millions of Dollars, FY 2017).....	11
Figure 3-2: Agency-wide administrative costs as a percentage of total O&M costs, FY 2017	12
Figure 3-3: Local Bus Performance Summary.....	13
Figure 3-4: BRT Performance Summary, FY 2017	14
Figure 3-5: Light Rail Performance Summary, FY 2017.....	15
Figure 3-6: Heavy Rail Performance Summary, FY 2017	16
Figure 3-7: RTA's Evolution of Heavy Rail Service Hours v. Ridership, (FY 2008 = 100)	17
Figure 3-8: Paratransit costs per trip, RTA and Peers, FY 2017.....	18
Figure 5-1: 10-Year Operating Costs and Revenues Profile	28
Figure 5-2: 10-Year Capital Costs and Revenues Profile.....	30
Figure 6-1: RTA's expenses by category	32
Figure 6-2: Paratransit costs per-trip across peers, privately and agency operated	33
Figure 6-3: Decline in light rail ridership, indexed to 2014 levels	34
Figure 6-4: High Frequency Alternative from RTA System Redesign Study	35
Figure 6-5: Heavy rail ridership decline, 2008-2017	38
Figure 6-6: Light rail ridership decline, 2014-2017	39
Figure 6-7: Cost Efficiency and Revenue Enhancement Strategies.....	41
Figure 10-1: List of Revenue Sources Identified	60
Figure 10-2: Scenario 1: Baseline - Operating.....	62
Figure 10-3: Scenario 1: Baseline - Capital	62
Figure 10-4: Scenario 2: High Inflation - Operating.....	63
Figure 10-5: Scenario 2: High Inflation - Capital	63
Figure 10-6: Scenario 3: High Inflation with Sales Tax - Operating	64
Figure 10-7: Scenario 3: High Inflation with Sales Tax - Capital.....	64
Figure 10-8: Scenario 4: High Inflation with Sales & Use Tax/Updated Backlog - Operating.....	65
Figure 10-9: Scenario 4: High Inflation with Sales & Use Tax/Updated Backlog - Capital	65
Figure 10-10: Scenario 5: Low Inflation with Sales Tax/Updated Backlog - Operating	66
Figure 10-11: Scenario 5: Low Inflation with Sales Tax/Updated Backlog - Capital.....	66
Figure 10-12: Scenario 6: High Inflation with Property Tax: Operating	67
Figure 10-13: Scenario 6: High Inflation with Property Tax - Capital	67

EXECUTIVE SUMMARY

SCOPE OF WORK

WSP was tasked by the Greater Cleveland Partnership (GCP) to conduct a Financial Analysis and Economic Forecast for the Greater Cleveland Regional Transit Authority (RTA). This work is just one component of the several studies RTA has underway to build a new vision for the system. The WSP study is complementary to those efforts.¹ To guide and support the study, GCP created a RTA Task Force comprised of business leaders interested in the topic and with expertise in RTA’s core functions (i.e. – operations, logistics, finance, etc.). The study aims to answer six broad research questions:

- 1 How does RTA compare to its peers?
- 2 What are the economic and market risks RTA faces?
- 3 What are the financial issues RTA faces?
- 4 What potential efficiencies could increase financial performance, and what strategies could maximize revenue?
- 5 What are current Key Performance Indicators and what processes and/or other indicators can be implemented?
- 6 What are current and potential future local funding mechanisms for transit?





This executive summary presents the key findings for each of these questions, the main recommendations, additional context regarding transit ridership trends, and next steps.

KEY FINDINGS

The table below presents the study’s key findings on each research question and a rating of RTA’s relative performance.

Research Question	Key Findings	Rating
Benchmarking	On par with peers, except for administrative and paratransit costs; rail service volume is high compared to ridership.	●
Economic and Market Risks	Future of rapid transit in Cuyahoga County is tied to regional planning and economic development	●
Financial Issues		
Operations	Operational budget appears to be balanced based on RTA’s assumptions	●
Capital	Significant funding gaps for railcar and rail infrastructure replacement.	○
Cost Efficiencies and Revenue Opportunities	Up to \$21 million in savings and \$8 million in additional revenues can be achieved by implementing recommendations	●
Key Performance Indicators	Strong KPI system, but need to improve public transparency and internal communication	●

¹ RTA is currently conducting four complementary “pillar studies:” a Fare Study, an Economic Impact Study, a Service Redesign Study and a Rail Car Study.

Revenue Options to Bridge Funding Gaps	RTA is authorized to levy sales-and-use and property taxes at the county level; both have a large base and could bridge capital funding gaps	
LEGEND:	 High/Excellent	 Medium
	 Low/Poor	

CONCLUSIONS AND RECOMMENDATIONS

The following recommendations emerged from the study:

- 1 Benchmarking:** RTA’s operational performance offers a mixed picture, with high-performing services (Bus Rapid Transit: the HealthLine) countered by services that are not in line with peers with respect to costs (local bus) or ridership (rail services). Additionally, administrative costs at the agency level appear to be higher than most peers. From a governance standpoint, RTA’s Board would benefit from limiting the number of terms and eliminating the stipend for Board members.
- 2 Economic and Market Risks:** RTA is facing risks related to its funding (reliance on federal grants and local sales and use tax), its operations (declining ridership), its assets (underfunded rail infrastructure and need for costly rail vehicle replacement) and broad regional trends (dispersion of jobs and population centers). Opportunities to mitigate these risks, based on stakeholder input, include new CEO leadership who could foster positive change within the agency; the local bus redesign study that could improve operational efficiencies, especially if done collectively with transportation network companies (i.e. -Uber, Lyft); and, while less certain, the recent population growth in downtown Cleveland that could be create more interest in using transit.
- 3 Financial Issues:** RTA’s financial outlook shows limited deficits in the operating budget. However, projected costs of replacing new rail vehicles (\$240 million, per RTA) and meeting other unfunded maintenance needs, primarily related to the rail system, far exceed available capital revenues.
- 4 Cost Efficiencies and Revenue Enhancement Strategies:** Cost reduction strategies, relying on privatization and internal reorganization, could lead to potential savings of \$21 million per year, while additional revenues could amount to \$8 million through ridership recovery with local bus system redesign and reinvestment in the rail system. To support its rail infrastructure, the region should consider as a priority long-term coordination of RTA’s service development and capital investments with governmental, business, and non-profit entities to direct economic development toward rail station areas, which are currently underutilized.
- 5 Key Performance Indicators:** RTA has successfully developed advanced performance reporting systems. To enhance its performance-based management, reputation and transparency, RTA should share its goals and results both internally with all its employees and externally with its riders and the public.
- 6 Revenue Sources and Options to Bridge Funding Gaps:** Among various local revenue sources used to fund transit across the U.S., RTA has the ability to levy sales-and-use and property taxes at the county level. Based on RTA’s assessment of its capital needs, substantial funding increases are needed to recapitalize its rail infrastructure and replace its trainsets. What is uncertain is if that increased funding to cover the capital shortfall will yield a high return-on-investment in terms of increased ridership.

ADDITIONAL CONTEXT: RIDERSHIP TRENDS

RTA’s ridership declined 31% between 2007 and 2017, which continues a long-term pattern of decline. The agency’s ridership has fallen by more than 75% since its peak in 1980, in parallel with the decrease in the number and density of residents and jobs in Downtown Cleveland and along RTA’s rapid transit corridors. Many local factors contributed to RTA’s ridership decline: population loss and outmigration,

changing development and employment patterns, and the aging of the region's population. Key factors contributing to a decline in transit ridership nationwide include higher automobile ownership, low fuel prices, and increased competition in the urban transportation market (such as Uber and Lyft). The dispersion of jobs and residents, including transit-dependent populations, throughout Greater Cleveland have made it increasingly challenging for RTA to serve the region efficiently. At the same time, the city of Cleveland is among the American cities with the lowest car ownership: in 2016, 23.6% of households in Cleveland did not own a car, leading to a significant population depending on transit to access jobs increasingly located in the outer reaches of the county.

NEXT STEPS

RTA and the Greater Cleveland region are at a crossroads. Based on this report, the business community will be able to weigh the trade-offs among the available options for transit operations. Without additional funding, RTA's rail service risks being gradually curtailed as key infrastructure becomes unsafe for operation, eventually limiting its services to Bus Rapid Transit (BRT), local bus services, and paratransit service for people with disabilities. With additional funding and coordination across sectors (government, business, non-profit), the region could reorient economic development toward areas served by the region's rail infrastructure asset.

Many metropolitan areas in the United States are currently investing billions of dollars to develop rail transit systems similar to the network that already exists in Cleveland. For significantly less investment, RTA could bring their rail infrastructure to a high performing standard. RTA's HealthLine BRT provides a local example of the ability of a transit system to generate economic benefits and to attract and shape transit-oriented development. Scaling this type of development strategy across the rail infrastructure is needed to maximize the investment. Greater Cleveland needs an aligned economic development strategy to enhance the use of RTA's rapid transit system. Regional support for additional transit funding should be coupled with other reforms and investment along the rapid transit corridors.

1 PURPOSE

WSP was tasked by the Greater Cleveland Partnership (GCP) to conduct a Financial Analysis and Economic Forecast for the Greater Cleveland Regional Transit Authority (RTA). To guide and support the study, GCP created an RTA Task Force consisting of business members interested in the topic, who provided guidance throughout the study development. The study aimed to answer six broad research questions:

- 1 How does RTA compare to its peers?
- 2 What are the economic and market risks RTA faces?
- 3 What are the financial issues RTA faces?
- 4 What potential efficiencies could increase financial performance, and what strategies could maximize revenue?
- 5 What are current Key Performance Indicators and what processes and/or other indicators can be implemented?
- 6 What are current and potential future local funding mechanisms for transit?

2 BACKGROUND

A strong transit system depends on connecting high population-and-employment-density corridors, where many residents and workers are located within a short walk of a transit stop, feeding a thriving, high-density downtown employment district, ideally with hundreds of thousands of jobs located within just a few square miles of the region's main transit hub. Both Downtown Cleveland and the key transportation corridors that RTA serves have experienced a decline in the number and density of residents and jobs since 1980, making it increasingly challenging for RTA to serve the region efficiently.

POPULATION, JOBS AND RIDERSHIP TRENDS

Between 1980 and 2017, Cuyahoga County's population fell from 1.49 to 1.26 million, a loss of 13%. Many residents left the region while others moved to surrounding counties, most of which have added population since 1980. The City of Cleveland has suffered even greater population loss, falling from 574,000 residents in 1980 to an estimated 386,000 in 2017, a loss of 33%. A loss of population density accompanied the population loss. Population density in Cuyahoga County fell from more than 5.1 persons per acre in 1980 to 4.8 in 2000 and 4.3 in 2017. The loss was even greater within the City of Cleveland, where density fell from 11.5 residents per acre in 1980 to 9.6 in 2000, with further decline to 7.8 in 2010.

RTA's ridership declined 31% between 2007 and 2017, part of a long term-decline that has seen the agency's ridership fall by more than 75% since it reached its peak in 1980. There are many factors contributing to RTA's ridership decline, including local factors such as population loss and outmigration, changing development and employment patterns, the aging of the region's population, as well as nationwide factors such as higher automobile ownership, low fuel prices, and increasing competition brought by Transportation Network Companies like Uber and Lyft.

At the same time, Cleveland is among the American cities with the lowest car ownership: in 2016, 23.6% of households in the city did not own a car², which is similar to Baltimore, Detroit, Pittsburgh or Chicago. This is not a result of high residential density and access to transit, rather, it is due to factors such as Cleveland's higher poverty rate and lower median age compared to the rest of Cuyahoga County. Car-free households in Cleveland generally appear not financially able to own a car, which causes them to become transit-dependent, even if driving might be their preferred mobility option and would enhance their access to jobs.

Regional population trends suggest that factors other than population underpin RTA's loss of ridership. While RTA ridership in the last decade fell concurrently with population decline in Cleveland and Cuyahoga County, RTA ridership fell at a significantly higher rate. RTA ridership shrank by nearly a third, as city and county population fell by 2% and 4%, respectively. This is shown in **Figure 2**, which illustrates the changes in population density from 1990 to 2017, using a combination of decennial Census and 5-Year American Community Survey (ACS) data. While population started declining in 1970s, it was the decade between 2000-2010 that showed the most noticeable, significant loss of population. This loss continued at a slower rate between 2010 and 2017.

Population loss has been greatest within the City of Cleveland's east side, where RTA has its greatest concentration of high-capacity transit lines, including the eastern half of the Red Line rail rapid transit line and the inner portions of the Blue and Green Lines light rail service and the HealthLine BRT. Since 2010, a handful of areas have begun to regain population, predominantly Cleveland's near west side, but these are exceptions to a long-term and on-going pattern of declining population and development density within the county.

Changing job locations and employment patterns in key industries, and more recently—the nature of work itself, are another major factor contributing to ridership decline. RTA's system was designed to accommodate commuters traveling between suburbs and city neighborhoods and the region's central employment hub, downtown Cleveland. However, downtown Cleveland employment has declined by more than half since 1980. This loss of downtown jobs is due to many factors, including the region's loss of corporate headquarters offices, decline of downtown retail, relocation of jobs to suburban locations, reduced workforces in industries like banking and financial services, increasing regional employment in health care and other non-downtown oriented industries, and construction of the baseball stadium and arena in the Gateway District project in the 1980s and 90s, which occupies roughly one-third of the downtown Cleveland footprint.

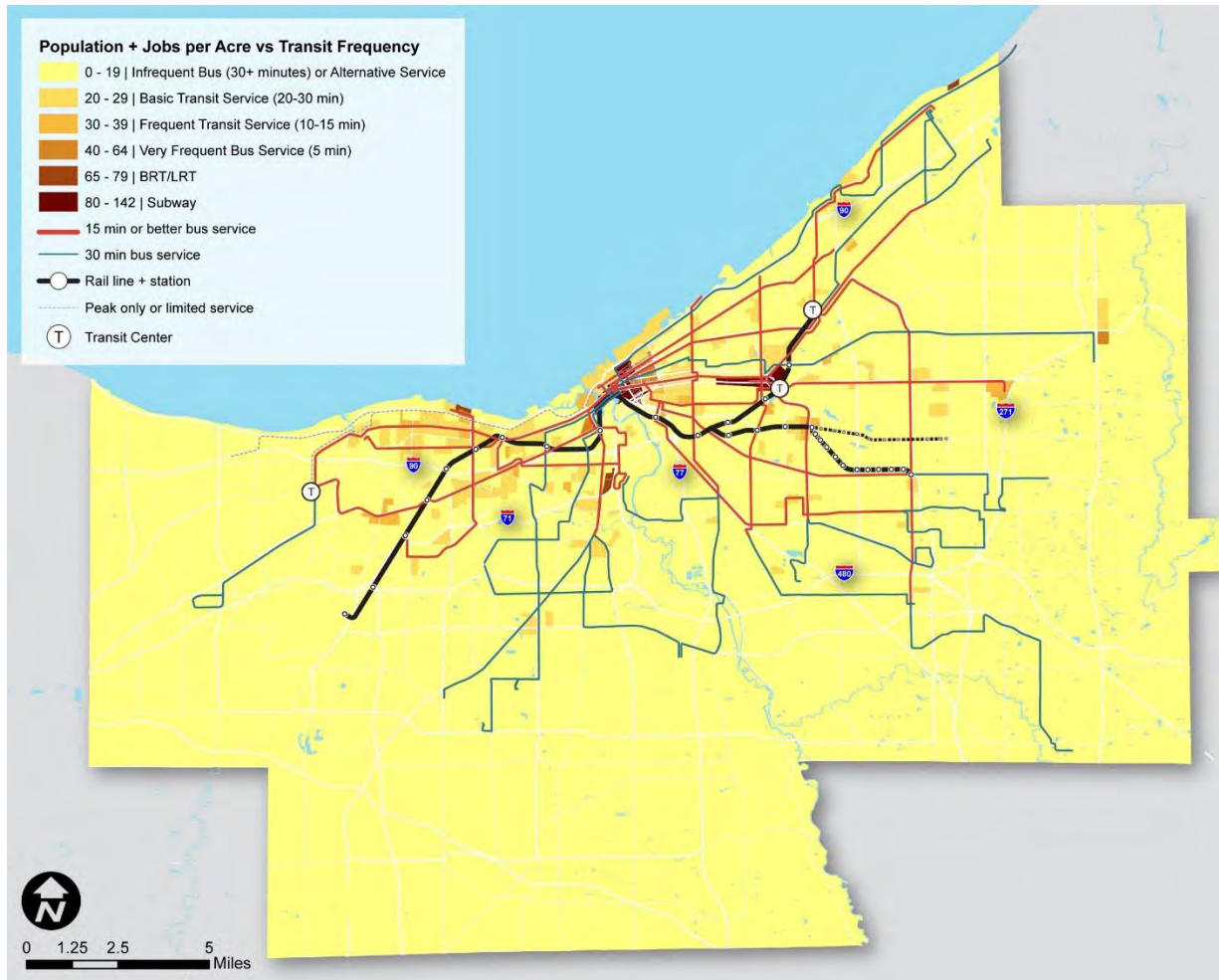
Recently, downtown Cleveland has shifted from the role of central business or employment district to a central entertainment district with restaurants replacing storefronts and office space repurposed or replaced by hotels and residences. Downtown lost nearly 17% employment between 2002 and 2015. Currently downtown employment consists of fewer than 90,000 workers³. Meanwhile, the number of downtown residents has more than doubled, from fewer than 7,300 in 1990 to more than 15,000 today. The recent repurposing to residential use of much of the Terminal Tower, Cleveland's iconic downtown building at the heart of the city, symbolizes this functional shift. The residential growth in downtown Cleveland makes it more attractive and vibrant, but downtown residents tend to live within walking distance of their workplaces, they can afford cars to travel to workplaces outside the downtown area, and transit service may not adequately serve their suburban employment destinations, thus contributing little

² Source: Census Bureau's American Community Survey (ACS) one-year estimates

³ Source: LEHD 2002-2015

to transit ridership. **Figure 2-1** illustrates how limited high population and job density areas that support transit are in Cuyahoga County.

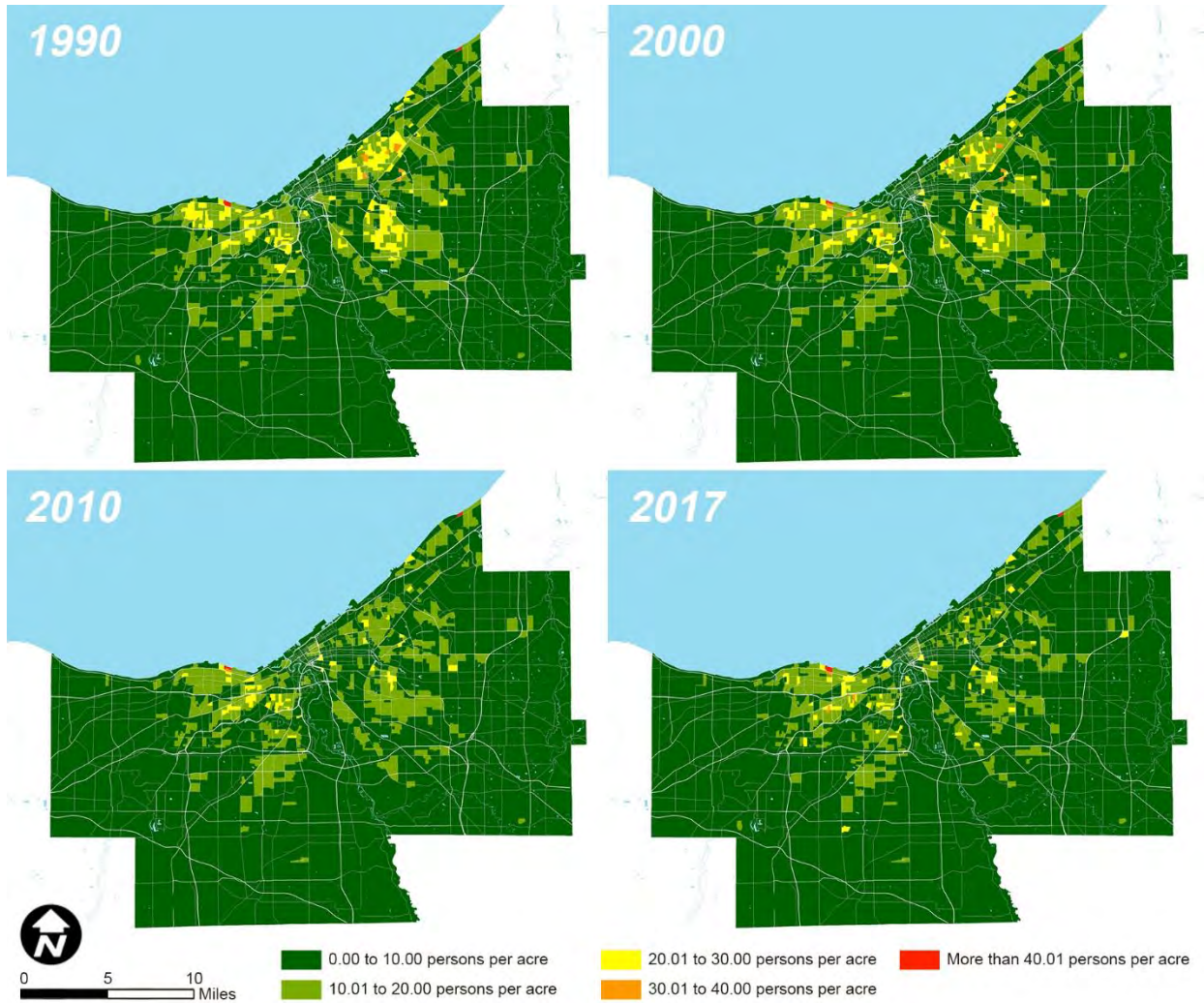
Figure 2-1: Population and Jobs Density by Census Block group with RTA System Redesign - High Frequency Network Concept



Source: 2015 ACS, 2015 Longitudinal Employer-Household Dynamics (LEHD)

Figure 2-2 shows Cleveland area locations that have gained and lost the largest number of employees between 2002 and 2015. As the series of maps shows, Downtown Cleveland has seen the greatest loss of jobs in the region, while most of the growth occurred in low-density, outer suburbs, locations that are virtually impossible for public transit to serve efficiently.

Figure 2-2: Population Density by 1990, 2000, 2010, and 2017 in Cuyahoga County

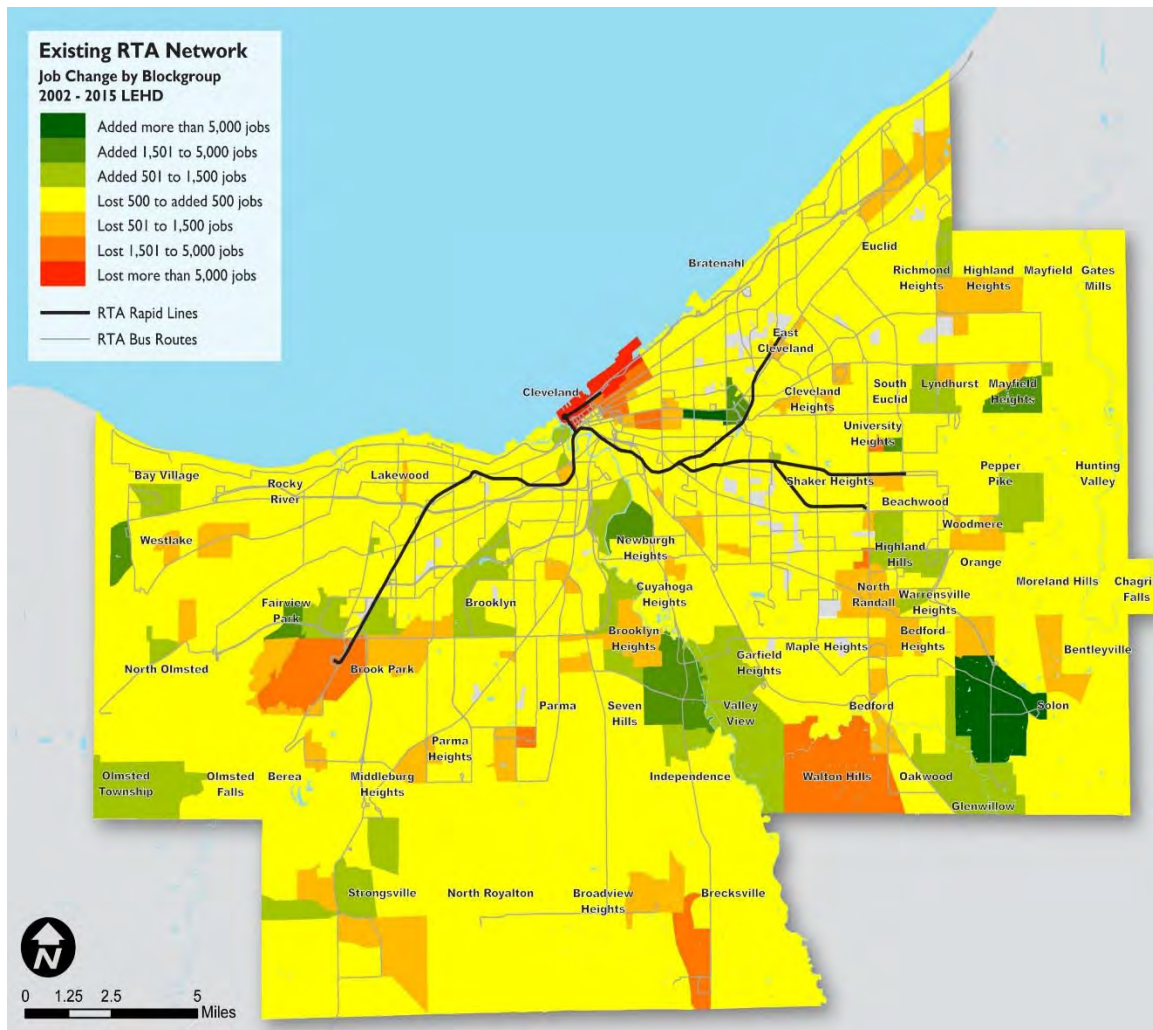


Source: 1990, 2000, 2010 Census, 2017 ACS

Note: Standardized to 2010 Census Block Groups by IPUMS NHGIS, University of Minnesota

While other factors influence demand for transit service, the combined population and employment density is a strong indicator of the level of transit service that an area can support. **Figure 2-3**, shows the combined population and employment density in 2015, color coded by the minimum combined population and employment density required to support various levels of transit service, from infrequent local bus service/alternative service to high-capacity rail and Bus Rapid Transit services.⁴ Aside from the two highest density locations – downtown Cleveland and greater University Circle area, most block groups in the county lack the combined population and employment density to support more than infrequent local bus service (where buses operate on headways, or intervals between buses, of 30 minutes or more) or alternative transit services like subsidized taxi or TNC service. Density is notably low around most of RTA’s rapid transit stations and high-frequency bus corridors, except for parts of the HealthLine corridor and the rapid stations in University Circle.

Figure 2-3: Job Change by Census Block group with Existing RTA Network



Source: 2002-2015 LEHD

⁴ “Transit Supportive Guidelines,” Ontario Ministry of Transportation, retrieved on August 2019.

<http://www.mto.gov.on.ca/english/transit/pdfs/transit-supportive-guidelines.pdf>

Note: While developed to provide guidance for Canadian cities, the guidelines are applicable to US cities and often are used in analyzing US transit markets.

3 PEER BENCHMARKING

3.1 OVERVIEW

The purpose of the peer benchmarking analysis is to evaluate RTA's performance-based financial operating and service characteristics. RTA's capital program is reviewed in sections 5 and 8 of this report.

The peer benchmarking analysis was developed based on the National Transit Database (NTD), the best data publicly available for all transit agencies. The Federal Transit Administration (FTA) mandates that transit agencies receiving federal funds must report certain information to the NTD in accordance with uniform reporting standards. Despite FTA's guidance and oversight, it is impossible to guarantee that all agencies have the same interpretation of FTA's reporting standards. The peer analysis conducted for this study assumes that minor discrepancies in reporting methodology across different peers will be normalized by focusing on comparison between RTA and the peer average. Additionally, the analysis focuses on fiscal year (FY) 2017 reporting due to the two-year lag in NTD reporting.

Governance data were reviewed using reference documents for RTA and its peers because this information is not covered in the NTD.

3.2 PEER SELECTION

RTA has a unique mix of transit modes (i.e., local bus, light-rail, heavy rail and Bus Rapid Transit) compared to other agencies of its size. The peer analysis benchmarked RTA against different groups of similarly-sized agencies for each transit mode to ensure appropriate comparison within each mode. The peer selection process for the benchmarking element of the study is based on the following methodology:

The WSP Team assembled an initial list of more than twenty peer agencies based on previous studies conducted by GCP (such as the GCP Tax Study) and consultation with RTA. The initial list was vetted by the WSP Team using NTD data and knowledge of the industry, and finalized based on input from the GCP Task Force.

RTA transit service includes local bus, BRT, heavy rail, light rail and paratransit service. RTA's mix of modes is unique for an agency of its size, therefore a true peer agency with similar characteristics and the same variety of modes does not exist. As such, the WSP Team identified a core group of comparable peer agencies based on local bus service, some of which also offer light rail service of a similar scope to RTA. To support a robust analysis across all of RTA's transit service modes, additional peer agencies were added to bolster the benchmarking analysis of the non-local bus modes: BRT, heavy rail, and light rail.

The criteria used to evaluate peers were based on type of transit service offered and regional characteristics.

Type of Service Offered: The modes operated by the agency; the overall size of operations (based on ridership and operating expenses); the size of specific transit mode services (local bus, BRT, light rail, heavy rail).

Regional Characteristics: Economic, demographic, geographic, and climate trends.

The list of peer agencies and service types are listed in **Table 3-1**. The local bus and paratransit peers were used for the governance benchmarking.

Table 3-1: Peer Agencies by Mode

Local Bus & Paratransit	Light Rail	Heavy Rail	Bus Rapid Transit
St. Louis Metro	St. Louis Metro	Baltimore Maryland Transit Administration (MTA)	Kansas City Kansas City Area Transportation Authority (KCATA)
Buffalo Niagara Frontier Transportation Authority (NFTA)	Buffalo Niagara Frontier Transportation Authority (NFTA)	Philadelphia-New Jersey Port Authority Transit Corporation Speedline (PATCO)	Hartford CTtransit
Pittsburgh Port Authority of Allegheny County	Pittsburgh Port Authority of Allegheny County		Grand Rapids Interurban Transit Partnership (The Rapid)
Columbus Central Ohio Transit Authority (COTA)	Hampton Roads Hampton Roads Transit (HRT)		
Detroit Detroit Department of Transportation (DDOT)	Baltimore Maryland Transit Administration (MTA)		
Milwaukee Milwaukee County Transit System (MCTS)			
Cincinnati Southwest Ohio Regional Transit Authority (SORTA)			

Source: WSP Analysis

3.3 PERFORMANCE RESULTS

The key findings, results and trends of the peer benchmarking analysis are summarized below. The first section reviews agency-wide performance, followed by performance at the mode level. The full benchmarking analysis began with a diagnostic of an extensive list of standard metrics. The diagnostic analysis illuminated areas of interest for further investigation. Additional detailed analysis was performed as needed.

Agency-wide performance results focus on operating cost drivers. Performance by mode is summarized using the following five metrics:

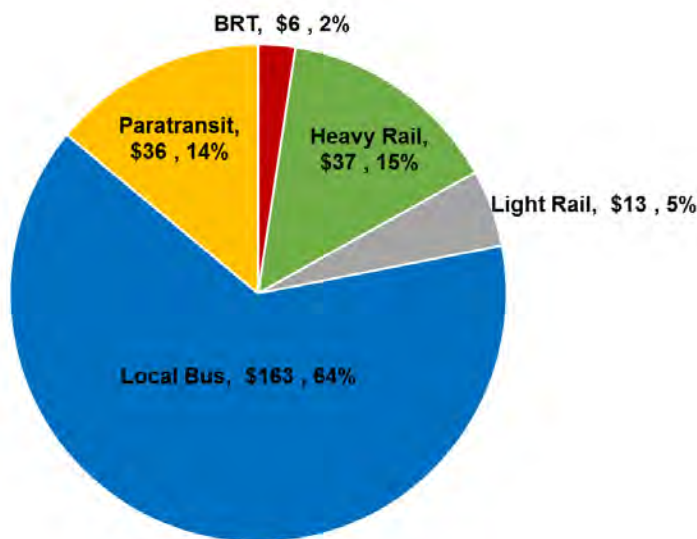
- 1 **Farebox Recovery:** Percentage of total operating and maintenance (O&M) costs covered by farebox revenues
- 2 **Total Operating & Maintenance (O&M) Cost per Service Hour:** Total cost to deliver an hour of service
- 3 **Service per Rider:** Service hours offered per 10,000 riders; this is a measure of whether service hours offered appropriately meet ridership demand
- 4 **Wage Rate:** Total labor costs (salaries and wages) per labor hour
- 5 **Fringe Rate:** Total fringe benefit costs per labor hour (e.g., healthcare)

3.3.1 AGENCY-WIDE ANALYSIS

TOTAL OPERATING AND MAINTENANCE COSTS

RTA operates five different services: local bus, BRT, heavy rail, light rail, and paratransit with local bus representing the largest portion of RTA's operations. In FY 2017, local bus service comprised 64% of total O&M spending. **Figure 3-1** provides a summary of RTA's total O&M spending by mode.

Figure 3-1: Operations and Maintenance (O&M) cost breakdown by mode (Millions of Dollars, FY 2017)

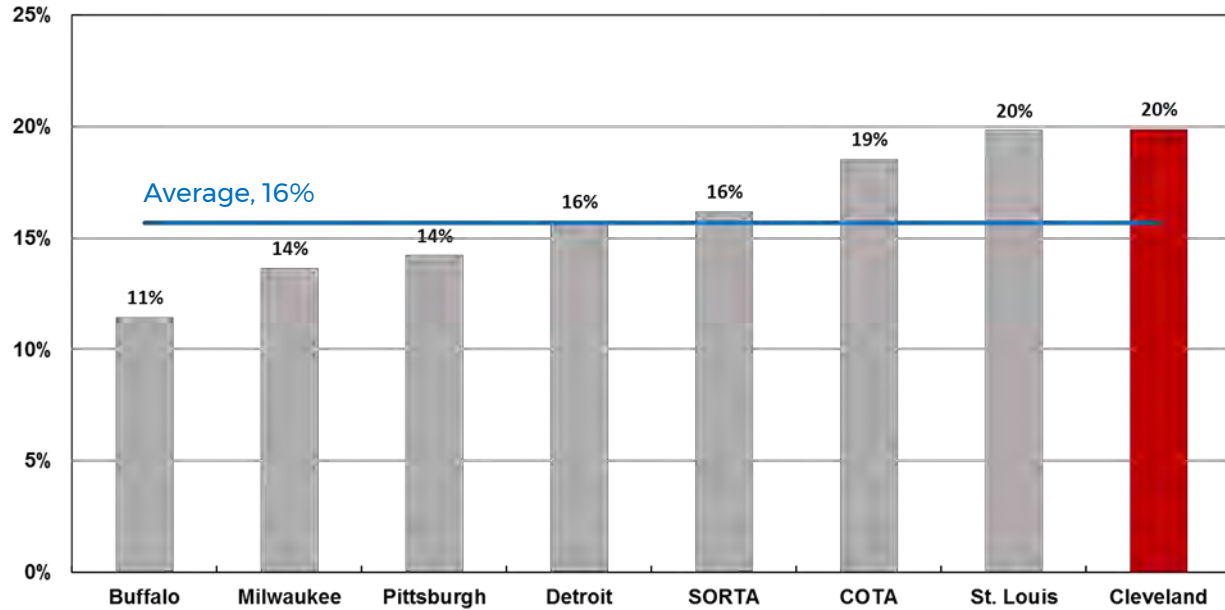


Source: NTD.

ADMINISTRATIVE COSTS

Figure 3-2 demonstrates that RTA's agency-wide administrative costs in FY 2017 are high relative to peers. RTA's administrative costs constitute 20% of total O&M costs while the peer average was 16%. Further analysis shows the number of labor hours and employees classified⁵ as administrative were also high for RTA relative to peers, while the average wage rates were in line with peers. These results indicate that RTA's administrative employees are compensated appropriately but are over-utilized.

Figure 3-2: Agency-wide administrative costs as a percentage of total O&M costs, FY 2017



Source: NTD.

⁵ Note that RTA's rules for classifying operating staff as administrative staff may differ from peers.

3.3.2 LOCAL BUS

Figure 3-3 provides a summary of RTA's local bus service performance compared to peers based on the five key performance metrics described above. Colorful bubbles represent RTA performance, while grey bubbles represent peer performance. The color code for RTA's performance is as follows:

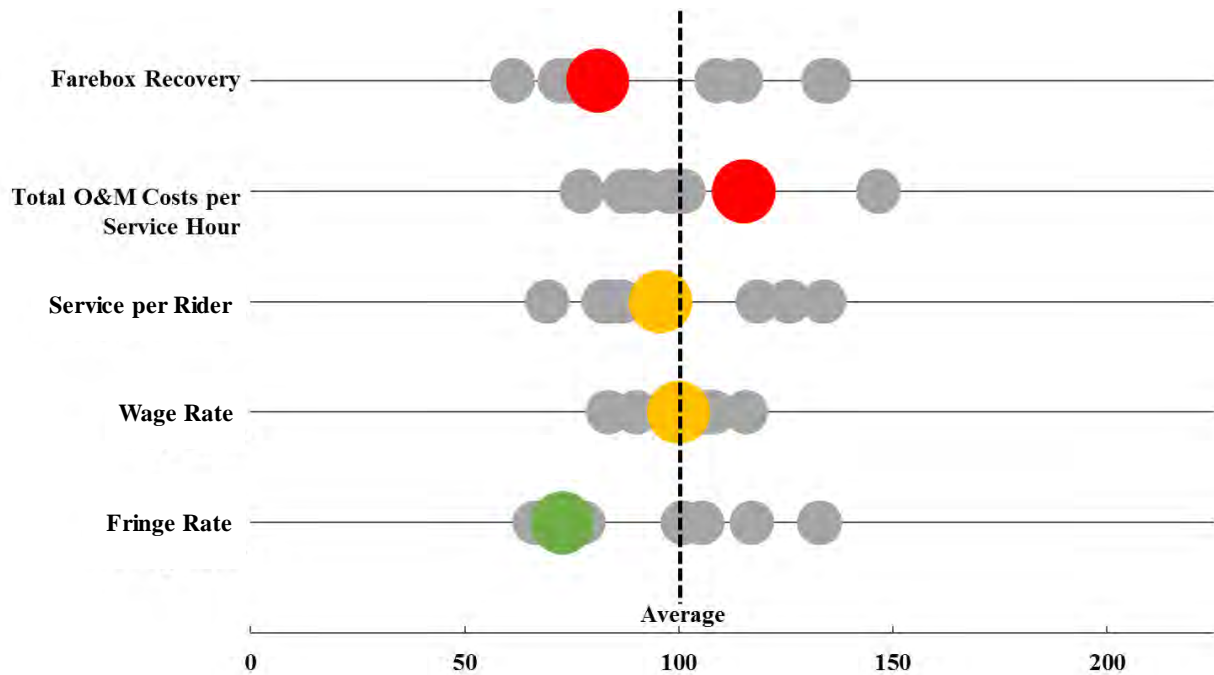
Strong performance relative to peers: ●

Average performance relative to peers: ●

Lower performance than peers: ●

In FY 2017, RTA's local bus farebox recovery was low and O&M costs per service hour were high relative to peers in FY 2017. However, these trends are likely driven by RTA's cost allocation methodology, which may overstate local bus operating costs as compared to peer reporting methodology relative to peers, since RTA classifies operating staff as administrative staff. In FY 2017, RTA's local bus service per rider was in line with peers in FY 2017. In addition, RTA's local bus labor costs were well-contained, as wage rates were in line with peers and fringe rates were below average relative to peers.

Figure 3-3: Local Bus Performance Summary



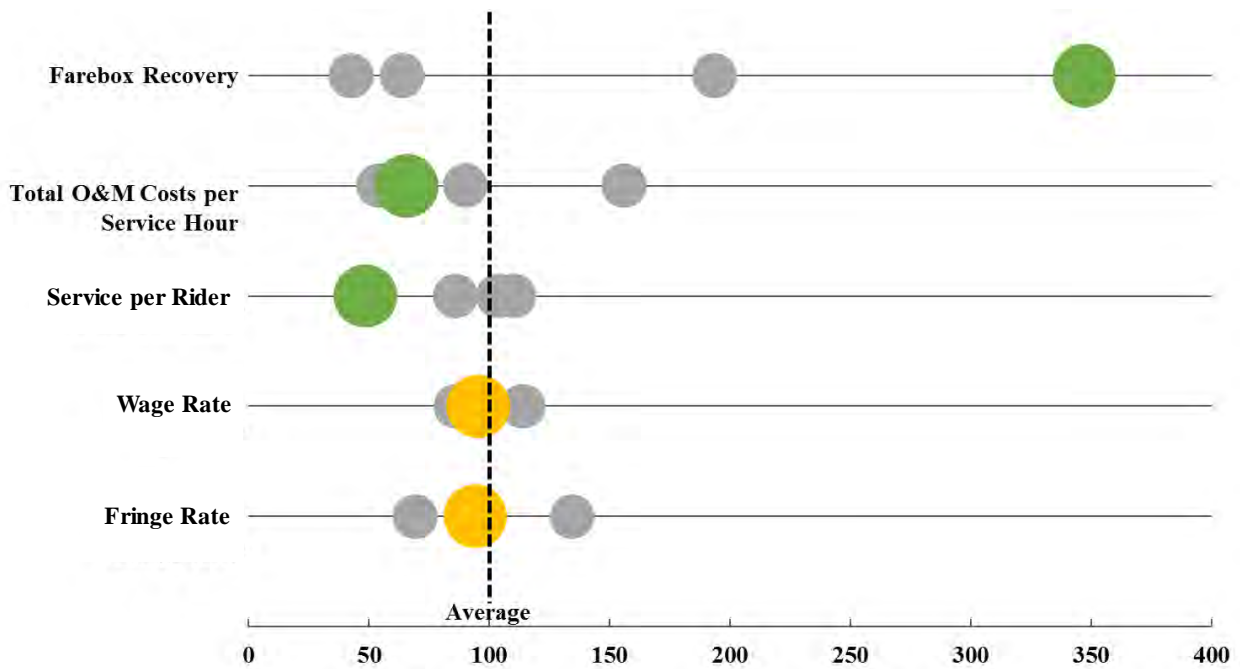
Source: NTD.

3.3.3 BRT

RTA’s BRT system, the HealthLine, has served as a model for BRT systems nationwide; in FY 2017, the BRT system performed at or better than average across all five metrics.

RTA’s BRT **farebox recovery** for BRT was significantly higher than peers while **O&M costs per service hour** were below average relative to peers. It is likely that RTA’s cost allocation methodology for total O&M costs is skewing the results, resulting in lower BRT costs and higher local bus costs. However, given the magnitude of difference between the HealthLine and peer BRT systems, the HealthLine’s strong performance is not driven by the cost allocation methodology. The HealthLine’s **service per rider** is below average which indicates efficient and well-utilized service. Similar to local bus performance measures, the HealthLine’s labor costs have been well-contained, **wage rates** and **fringe rates** were in line with peers in FY 2017. Overall BRT performance is summarized in **Figure 3-4**.

Figure 3-4: BRT Performance Summary, FY 2017

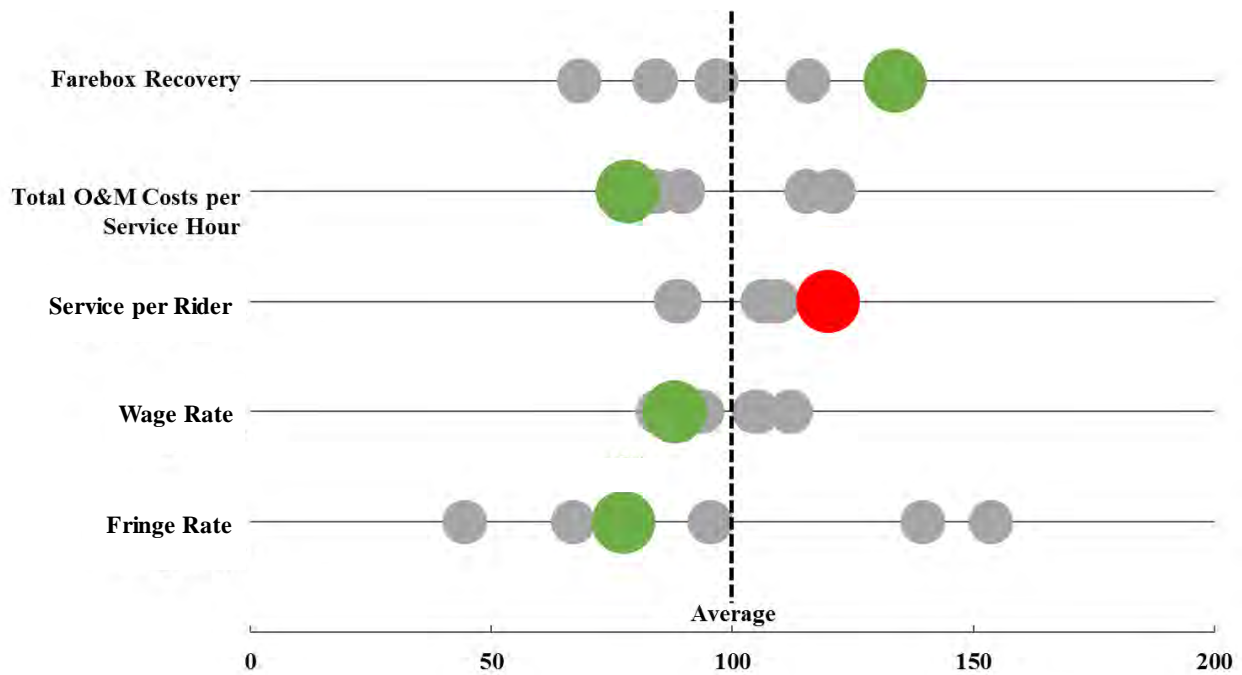


Source: NTD.

3.3.4 LIGHT RAIL

RTA’s light rail system includes the Green Line, Blue Line, and Waterfront Line. **Figure 3-5** summarizes RTA’s light rail performance in FY 2017. The RTA light rail performed well relative to peers across most metrics. RTA’s light rail **farebox recovery** was high relative to peers, **O&M costs per service hour** were low relative to peers, and **wage** and **fringe rates** were low relative to peers. RTA’s light rail **service per rider** was high relative to peers, indicating that service offered may be higher than warranted given ridership demand in FY 2017.

Figure 3-5: Light Rail Performance Summary, FY 2017



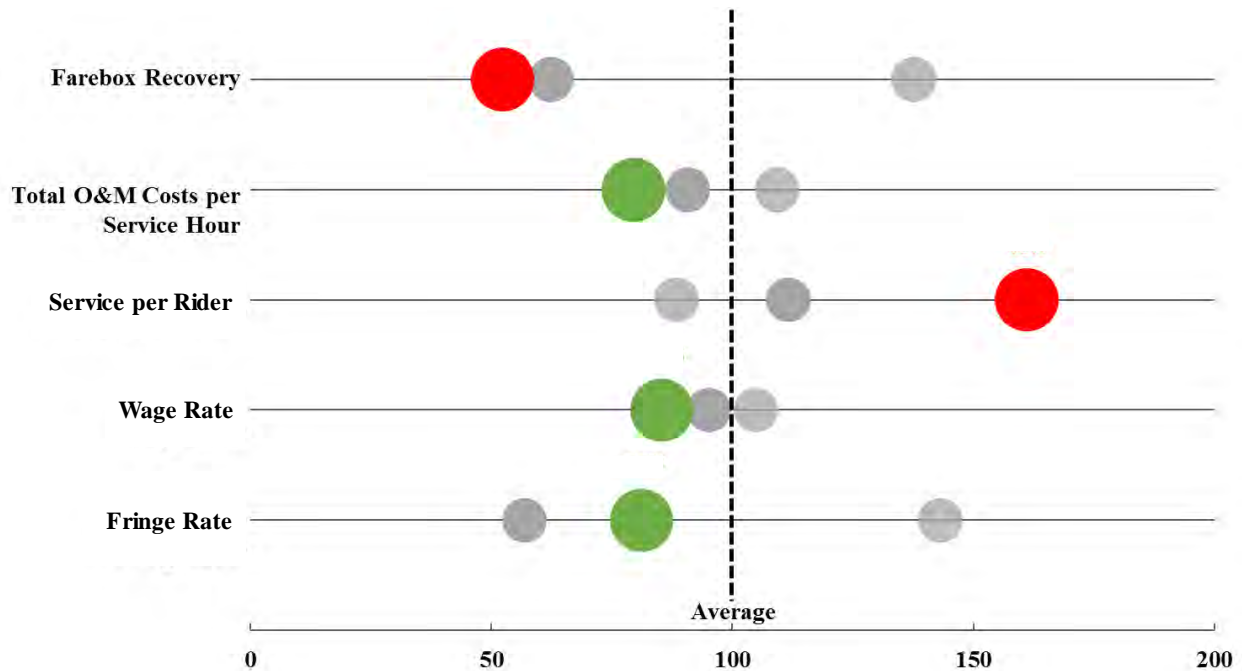
Source: NTD.

3.3.5 HEAVY RAIL

RTA's heavy rail system is unique, as it is among the oldest heavy rail systems in the nation and consists of only one line, the Red Line. As such, there are few transit agencies in the US that are appropriate peers. The two peer agencies selected for the peer analysis, PATCO and Baltimore MTA, are both located on the east coast in higher cost markets than Cleveland.

Although the peer average for **farebox recovery** is skewed by PATCO, the Red Line's performance is in line with Baltimore based on farebox recovery. The Red Line's **O&M costs per service hour** are favorable relative to the peer average, which is reasonable given its lower cost market. Additionally, **wage** and **fringe rates** for the Red Line are low relative to peers. RTA's heavy rail **service per rider** is much higher than both peers, indicating service offered was not aligned with ridership demand in FY 2017. Although this trend was also observed for RTA's light rail system, the misalignment between service hours and ridership for heavy rail was more significant than for light rail. Heavy rail performance is summarized in **Figure 3-6**.

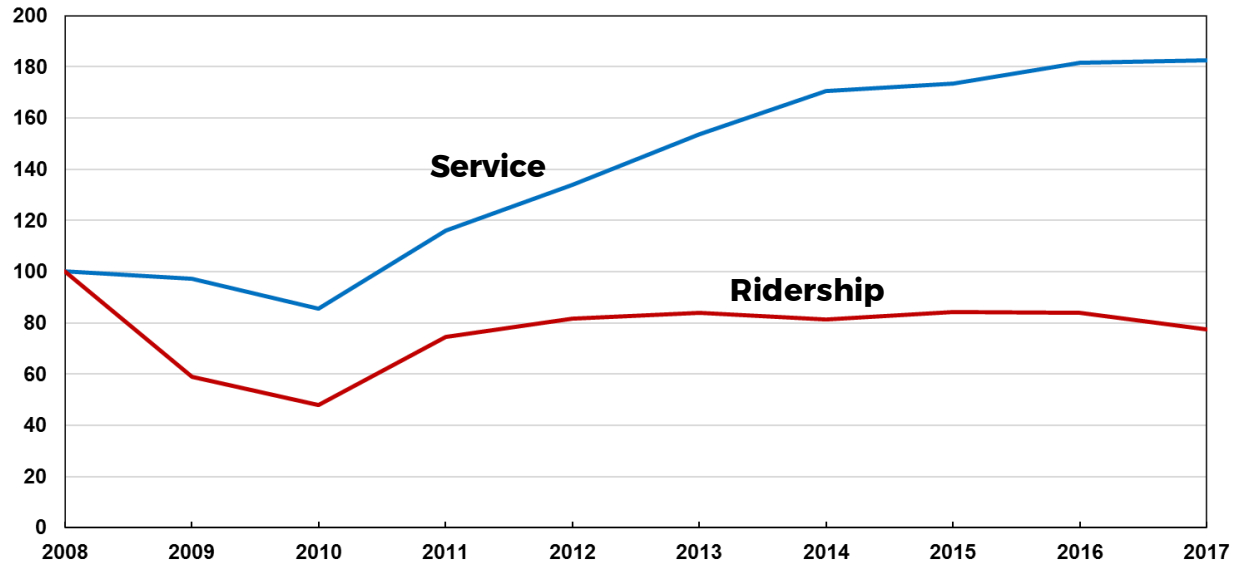
Figure 3-6: Heavy Rail Performance Summary, FY 2017



Source: NTD.

Figure 3-7 compares ridership relative to service hours offered over the last ten years, based on the NTD. The information in the graph is normalized based on ridership and service hours in FY 2008. Although both metrics declined following the recession, ridership has remaining steady since FY 2011 while service hours have continued to increase. Note: The Red Line shut down between West Boulevard Station and the airport (summer 2019) is not captured in the analysis time horizon.

Figure 3-7: RTA's Evolution of Heavy Rail Service Hours v. Ridership, (Index FY 2008 = 100)



Source: NTD.

3.3.6 PARATRANSIT

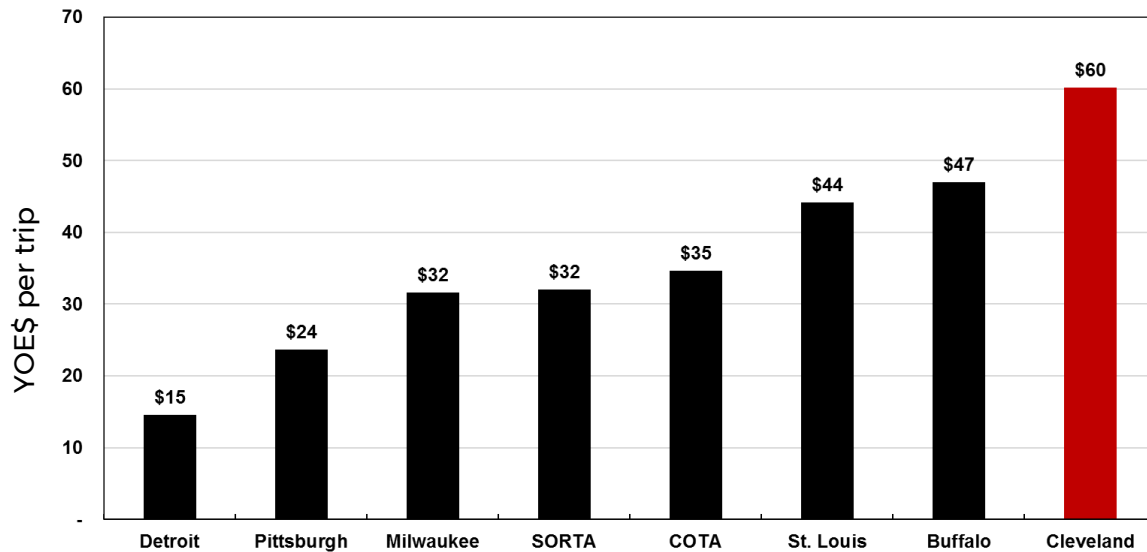
Like most transit agencies, RTA is required to provide paratransit service per federal mandates. Paratransit operations are typically less cost efficient than other modes and are evaluated differently. Paratransit characteristics include the following:

- Individual service
- No economies of scale
- Limited federal and state support
- Low fare revenues
- High costs per trip

Many transit agencies leverage contracted services to deliver paratransit service at a lower cost to the agency. However, a transit agency's ability to use contracted services may be constrained by labor agreements so not all agencies are able to realize the benefits of contracted services.

RTA is unique from its peers with its paratransit service as it utilizes both directly operated and contracted paratransit services. Peer comparators all utilize either directly operated or contracted services; none use a combination of both. St. Louis and Buffalo are the only peers to offer directly operated paratransit service. In FY 2017, RTA's paratransit costs per trip averaged \$60 per trip, significantly higher than all peers, including St. Louis and Buffalo (see **Figure 3-8**).

Figure 3-8: Paratransit costs per trip, RTA and Peers, FY 2017



Source: NTD. Cost per trip measured in Year of Expenditure dollars per trip.

Note: Although Detroit's O&M costs per trip were very low relative to peers in FY 2017, Detroit is the only peer to operate both traditional paratransit and demand response taxi service. Demand response taxi service is typically less costly than traditional paratransit, and thus may be skewing Detroit's paratransit performance.

3.3.7 GOVERNANCE

In terms of governance, **Table 3-2** shows that RTA's board size is in line with peers, but RTA is unique in giving its board members a stipend. Agencies tend to limit the number of terms a board member can serve.

Table 3-2: Key Characteristics of Peer Agencies' Boards

	Number of Members	Term Length	Paid?	Meeting Frequency*
Cleveland	10	3 years	Yes	16
Buffalo	13	5 years	N/a	12
Pittsburgh	11	4 years	No	10
St. Louis	10	5 years	No	6
Cincinnati	13	3 years	No	12
Columbus	13	3 years	N/a	11

Source: agencies' internal documents. Note: N/A notes agencies for which the information was not available.

**Meeting Frequency* reflects only full board meetings; it does not include committee meetings.

Milwaukee and Detroit do not have agency-specific boards, as seen in **Table 3-3**. Milwaukee's transit system is directly overseen by the county government. Detroit's is overseen by city government.

Table 3-3: Governing Bodies and Taxation Power of Peer Agencies

	Governing body	Tax levy power?
Cleveland	RTA, a political subdivision of Ohio	Yes
Buffalo	NFTA, a state public-benefit corporation	No
Pittsburgh	Port Authority, a county-owned agency	No
St. Louis	Bi-state Development, an interstate compact agency	No
Cincinnati	SORTA, a political subdivision of Ohio	Yes
Columbus	COTA, a political subdivision of Ohio	Yes
Milwaukee	Milwaukee County government	No
Detroit	Detroit City government	No

Source: agencies' internal documents.

3.4 CONCLUSIONS

The key results of the peer analysis include the following observations regarding RTA's performance:

- Agency-wide administrative costs are high
- Local bus O&M costs per service hour are high, farebox recovery is low, and service is well-aligned with ridership
- BRT performance is strong across all metrics
- Light and Heavy rail costs per service hour are strong, but service is poorly aligned with ridership
- Wage and fringe costs are well contained across all modes
- Paratransit costs per trip are high, particularly considering RTA's use of some contracted service
- RTA's board size is in line with peers but RTA is unique in giving its board members a stipend. Additionally, best practices include imposing a limit on the number of terms a board member can serve
- RTA has tax-levy power, which is useful to craft long-term investment strategies

4 RISKS AND OPPORTUNITIES

4.1 OVERVIEW

Economic risks impact the health of the overall regional economy, which has a direct impact on sales tax receipts that constitute a key revenue source for RTA. Market risks consist of a growing competition for urban and suburban transportation in the Greater Cleveland area, and dispersion of both the users' residences and job destinations.

To provide a better understanding of the existing and potential economic and market risks that RTA faces, WSP conducted targeted interviews of key regional stakeholders that understand RTA's situation. WSP worked with GCP staff, capitalizing on their extensive knowledge of the region's institutions and their interests, to identify appropriate stakeholders whose perspective would bring value to the assessment of these economic and market risks. Stakeholder interviews include some RTA board members and staff.

4.2 STAKEHOLDER INTERVIEWEES

The WSP Team conducted 10 interviews with a diverse set of individuals and organizations familiar with Cleveland, Cuyahoga County, and RTA’s economic, market and political situation. **Table 4-1** presents the list of stakeholder interviewees with their organization and role.

Table 4-1: List of Stakeholder Interviewees

Interviewee	Organization	Role
Justin Bibb	Key Bank	VP, Corporate Strategy RTA Board Member
Floun’say Caver, PhD	RTA	Interim CEO (at time of interview)
Gina Cheverine	GCP	VP, Commission on Economic Inclusion
Grace Gallucci	Northeast Ohio Areawide Coordinating Agency	Executive Director
Deb Janik	GCP	Senior VP, Real Estate and Business Development
Terry Joyce	Laborers Local 310	Business Manager RTA Board Member
Jeff Lechack	QCI Group	Director of Project Services RTA Task Force Member
Valarie McCall	City of Cleveland	Chief of Communications, Government & International Affairs RTA Board Member
Brad Whitehead (with Bethia Burke and Dominic Mathew)	Fund for Our Economic Future	President (Vice President and Urban and Regional Planner for Mobility Innovations)
Brian Zimmerman	Cleveland Metroparks	CEO

4.3 FINDINGS

Qualitative findings from the interviews are subdivided into four categories:

- **Funding:** What opportunities and risks does RTA face when it comes to their ongoing funding, grant opportunities? What is RTA’s strategy for local, state, and federal funding?
- **Operations:** What opportunities and risks does RTA face internally? How can RTA update or change their operations to be more transparent and efficient?
- **Assets:** What opportunities and risks does RTA own? How can RTA’s assets benefit them monetarily in the future?
- **Regional Trends:** What are the risks and opportunities that RTA face externally? What are the regional economic and market trends that could affect RTA’s funding, ridership, or operations?

Table 4-2 below outline the major risks and opportunities identified throughout the project process, including potential high-level strategies to mitigate risks.

Table 4-2: Major Risks and Opportunities

Category	Topic	Description	Mitigations
Funding			
Opportunity	State-level lobbying	RTA is in the process of establishing a state-level lobbyist, which could help ensure continued support at state level.	Not applicable
Risk	Federal funding	Transportation agencies around the country are facing reduced federal funding opportunities (including (both formula funds and discretionary funding).	RTA should create and follow a detailed funding strategy that is tied to each priority project within their capital program. Federal grant opportunities are competitive, and it is important to develop strategies to pursue these opportunities.
Risk	Fare revenue	Fares are highly correlated with the Cleveland population and the number of jobs available in the RTA service area. Population and/or job decline has a direct impact on fare revenue.	RTA should develop a robust and multifaceted funding strategy that relies on multiple funding mechanisms.
Risk	Reliance on sales and use tax	RTA is too reliant on sales and use tax for funding. When this revenue source deteriorates, RTA may need to cut service.	RTA should develop a robust and multifaceted funding strategy that relies on multiple funding mechanisms.

Category	Topic	Description	Mitigations
Operations			
Opportunity	Ridership	Downtown Cleveland has been growing in population, especially with millennials. This concentration of young, urban professionals provides an opportunity for RTA to attract young professionals, as well as transit-dependent riders, and affluent travelers who want more access to efficient transit.	Not applicable
Opportunity / Risk	System Redesign Study	<p>The system redesign study that is in progress is an excellent step towards understanding how RTA can best serve its users and opportunities associated with potential changes in system operations.</p> <p>Implementation of study recommendations comes with risk; it is important to ensure that the system redesign considers equity.</p>	Title VI analysis will contribute to check the equity effects of the local bus system redesign.
Opportunity / Risk	New CEO	<p>A new CEO provides an opportunity to establish new vision, strategy, and both internal and external perceptions of RTA.</p> <p>A new CEO also represents a potential risk to RTA. Organizational changes can cause friction. Strategic decisions need to reflect RTA's direction and focus.</p>	Ensure a smooth transition with senior leadership, leverage the Board and conduct employee engagement.

Category	Topic	Description	Mitigations
Risk	Public perception of RTA	RTA organizational goals and future plans are unclear to many stakeholders, including agency priorities and how internal decisions are made. This lack of understanding results in an ongoing risk of misunderstanding between RTA and community expectations (e.g., more money for RTA does not mean more service).	RTA should develop clear and transparent outreach strategies for both internal and external communications, demonstrating that RTA has established strategic goals for the future of the organization. Additionally, this strategy should include details on internal decision-making, specifically for those that affect stakeholders and the community.
Risk	RTA employee composition	The current composition (age / time to retirement) of RTA employees could be a risk to RTA. Does RTA plan for and hire enough younger employees to learn from and replace the potentially soon-to-retire knowledge base?	RTA maintains an internal staffing and succession plan; it includes initiatives for strategic recruitment and selection, partnerships with training resources, and development opportunities throughout RTA.
Risk	Rail Car Costs	There is a potential risk associated with the new rail car acquisition costs suggested in the rail car study and the reliability of those cost projections when considering RTA's purchasing power.	Assess how costs outlined in the Rail Car Study consider this risk and whether additional contingency funding should be included in the cost estimate.
Assets			
Opportunity	RTA owned property	RTA exploring ways to capitalize on RTA-owned property (e.g., P3 development, leasing, selling). This represents an excellent opportunity for new funding sources and potentially lower operational costs.	Not applicable
Opportunity	Appraisal of current office space	RTA could potentially relocate to a more cost-effective office space to reduce overhead costs. An internal analysis should be undertaken to understand if the office space is currently the best fit for RTA employees given current and future staffing levels.	Not applicable.

Category	Topic	Description	Mitigations
Risk	Aging transportation infrastructure & assets	The state of RTA's aging infrastructure and assets pose a risk to operations and performance.	Recapitalize rail infrastructure and assets to support ridership recovery and transit-oriented development.
Regional Trends			
Risk	Dispersed transit-dependent population and job destinations	The geographic dispersion of transit riders, desired origins, and destinations poses challenges to providing adequate service for the entire RTA service area.	<p>It is expected that the outcomes from the System Redesign Study (in progress) will mitigate this risk by determining the best corridors and areas for focusing RTA service.</p> <p>RTA should continually reference modeling of current and future population and developments in Cuyahoga County when considering service plan modifications.</p>
Opportunity	Transit-oriented development	Young professionals are moving into downtown Cleveland and are potentially interested in utilizing transit services. How can RTA better serve downtown Cleveland residents?	The Bus Redesign Study should provide recommendations regarding service to the residential population growth in the urban core.
Opportunity / Risk	Millennial population growth	TNCs pose a moderate risk to RTA's ridership base, but could also be an opportunity for partnership and associated reductions in operating cost.	RTA should Identify opportunities to partner with and capitalize on TNC expansion in region, as well as better analyze what it would look like for RTA to transition to a Mobility as a Service provider operational model.
Risk / Opportunity	TNCs and New Mobility Services	Multiple stakeholders referenced the siloed nature of regional strategies for economic development and RTA. Separate decision-making conversations and processes are not in the best interest of RTA or its potential development partners.	RTA needs to be a part of all economic development discussions that include new or relocating businesses. Additionally, the regional economic development plan needs to incorporate goals and strategies to maximize public transportation options for workers in the region.

Category	Topic	Description	Mitigations
Risk	City of Cleveland and Cuyahoga County Economic Development Strategy	Young professionals are moving into downtown Cleveland and are potentially interested in utilizing transit services. How can RTA better serve downtown Cleveland residents?	The Bus Redesign Study should provide recommendations regarding service to the residential population growth in the urban core.

4.4 CONCLUSIONS

RTA is facing major risks regarding its funding sources. While several opportunities exist to redesign and rethink operations, public perception of decision-making and goals, internal governance, and demographic changes and development patterns affect RTA's prospects. Aging assets are a major concern, both for rail vehicles and for rail infrastructure. Leveraging growth in central urban areas and potential transit-oriented development could be additional priorities.

5 FINANCIAL OUTLOOK

5.1 OVERVIEW

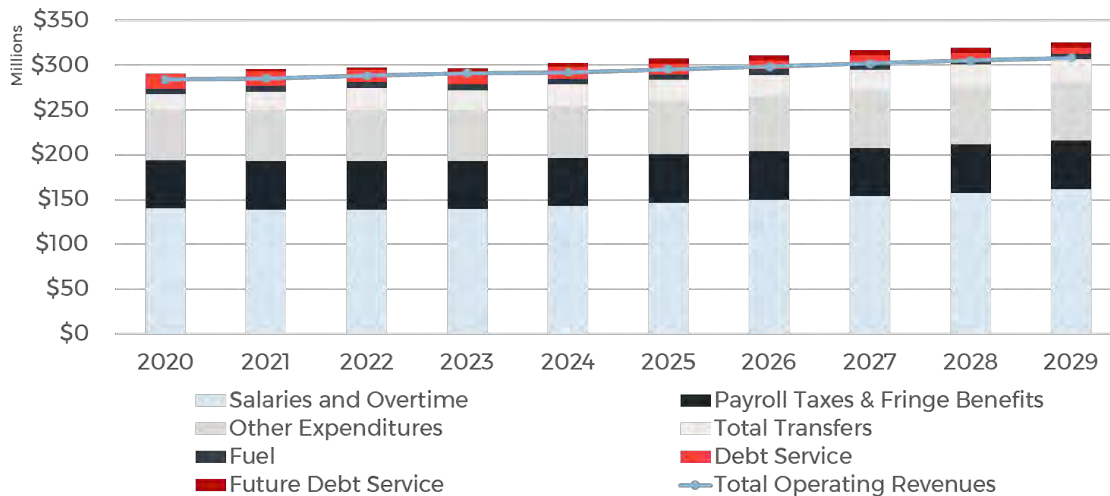
A high-level financial review and analysis was conducted to understand the financial issues that RTA is facing and expected to encounter over the next 10 years. WSP examined RTA’s financials by analyzing the current and forecasted funding structure and costs for both capital and operating expenditures to verify the amount and timing of potential anticipated financial gaps over the next 10 years.

5.2 FINANCIAL OUTLOOK

5.2.1 OPERATIONS

RTA’s operating costs forecast data for the next 5 years was provided by RTA to provide a baseline understanding of operations. The growth assumptions adopted for the different cost categories were used to forecast the 10-year operating cost horizon. Based on this analysis, it was evident that RTA’s highest cost category is Salaries & Overtime, followed by Other Expenditures, Payroll Taxes & Fringe Benefits, Total Transfers, Debt Service (which includes current and future), and Fuel. Using RTA’s growth assumptions, the cost categories show limited growth over the 10-year period as shown in **Figure 5-1**.

Figure 5-1: 10-Year Operating Costs and Revenues Profile



Source: RTA Budget Data, WSP Estimates

RTA’s operating revenue forecast was analyzed in a similar manner. The 10-year operating revenue forecast shows the major contributor to operating revenues is the sales and use tax source which is assumed to continue growing at a slow rate of 1.5% based on RTA’s assumptions. This is followed by fare revenues which are assumed to decrease slowly through the 10-year analysis period due to an

expected decline in ridership. Federal grants are another source of operating revenues and they are assumed to grow slowly over time, with a one-time decline due to 10-year Census results in FY24. Non-operating revenues constitute only a small share of the available resources. As illustrated in the graph above, where the operating revenue total is represented by the blue line, the 10-Year Operating Costs and Revenues Forecast shows limited deficits in a moderate economic growth scenario. This deficit becomes slightly higher when the cost of servicing three new debt issuances planned by RTA in FY21, FY23, and FY25 is included in the analysis.

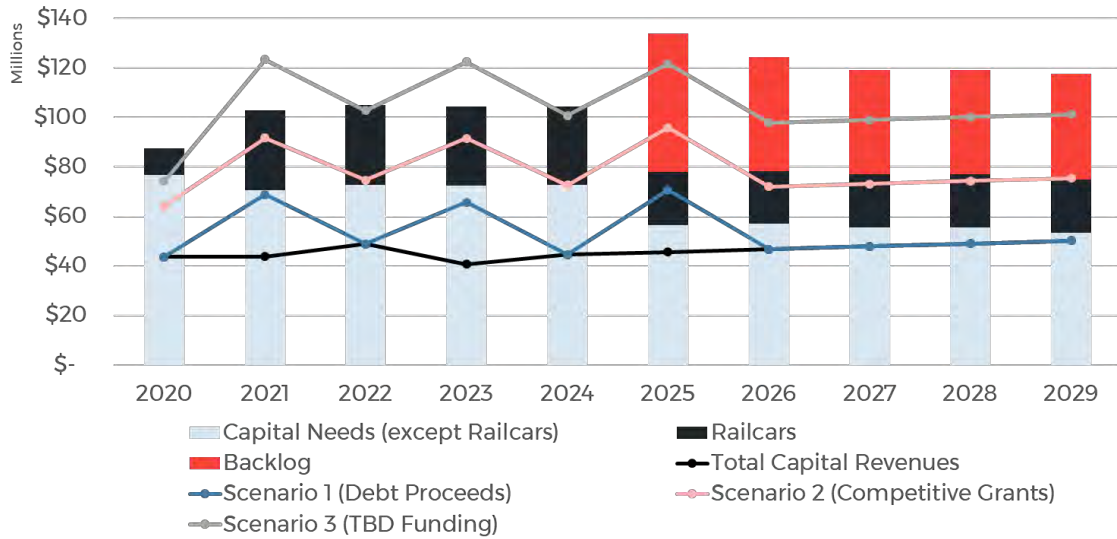
5.2.2 CAPITAL

The assessment of capital costs consists of an analysis of costs based on capital needs documentation and forecasts, railcars study results, and RTA's estimate of its system's backlog of capital investment needs required to achieve a state-of-good repair. The analysis results yield a 10-year forecasted capital cost profile where capital needs (excluding railcars) decrease slightly over the period starting in FY25. However, the railcar replacement initiative adds significant financial need across the 10-year cost profile. Additionally, RTA's capital needs backlog appears to be deferred to outer years and begins to be addressed starting FY25.

RTA's 10-year baseline capital revenue profile constitutes of a small share of the sales and use tax contribution, federal formula grants, and a limited amount of state Urban Transit Program (UTP) grants. The total capital revenue profile resulting from these three sources is represented by the black line in the graph. These revenue sources constitute baseline revenues that RTA is most likely to receive over the 10-year period. As represented in the graph, the forecasted capital costs are significantly higher than these baseline revenues in all years.

Figure 5-2 presents this capital profile with three scenarios including additional revenue sources with varying probabilities were included in the analysis. The first scenario results in three spikes in revenues on top of the baseline revenues due to debt proceeds that are contingent upon RTA issuing debt in FY21, FY23, and FY25. The second scenario builds on the first and assumes that uncertain federal, state, and regional competitive grants are also secured. This scenario results in an upward shift of the revenue profile and reduces the deficits in the early years. Finally, the third scenario builds on the second and assumes that an unidentified funding source "to be determined" that is included in RTA's capital plan is secured. This third scenario further shifts the revenue profile upwards and causes the deficits to begin in later years only. The 10-Year Capital Costs and Revenues Forecast analysis summarized in the graph above shows that a deficit still exists under all scenarios, including debt proceeds, competitive grants, and funding yet to be identified in RTA's CIP.

Figure 5-2: 10-Year Capital Costs and Revenues Profile



Source: RTA Budget Data, WSP Estimates

5.3 CONCLUSIONS

This financial analysis of operating costs, which is based on RTA’s inputs and assumptions, shows that RTA’s operating financial profile will have limited deficits, with debt service payments exceeding revenues in outer years. However, issuing future debt will further increase these operating deficits.

Regarding capital costs, the guaranteed revenue sources are much lower than the projected costs. This will lead to significant deficits in all years. Even when capital revenue scenarios with additional revenue sources are considered, deficits remained due to high capital needs for rail service. Refining capital cost forecasts and identifying potential strategies to bridge deficits by spreading out backlog costs and including inflation risks is addressed later in this report (Section 8).

6 COST EFFICIENCIES AND REVENUE ENHANCEMENT STRATEGIES

6.1 OVERVIEW

To assess opportunities for RTA to achieve cost efficiencies and increase revenue, the agency's operational practices, asset utilization and planning practices were compared to the strategies employed and metrics achieved by peer agencies, along with historical targets achieved by RTA and its peers, and current and emerging industry best practices. The eight strategies identified below suggest potential changes RTA can implement along with the anticipated increase in revenue that would likely occur if enacted successfully.

OPERATIONAL STRATEGIES

- 1 Reduce administrative expenses and expand use of part-time employees
- 2 Expand use of privatized and other innovative approaches to improve efficiency and performance, and reduce costs
- 3 Implement network redesign recommendations that further adapt the transit network to fast, frequent service in transit priority corridors
- 4 Develop partnerships with taxi and TNC companies to cost-effectively serve residential areas and provide connections to jobs in lower-density areas
- 5 Partner with other Northeast Ohio transit providers

ASSET-BASED STRATEGIES

- 1 Reinvest in the rail infrastructure and vehicles to increase reliability and generate additional ridership/fare revenues
- 2 Leverage RTA's property holdings as a revenue source

PLANNING-BASED STRATEGIES

- 1 Convene regional partnership to promote redevelopment and location of jobs in rapid station areas and along existing and future BRT corridors

The eight identified strategies vary considerably in effort associated with implementation and their potential for cost savings, service or efficiency benefits. In some cases, overcoming significant contractual and legal barriers is required to make significant impacts. In other cases, the primary obstacles are allocation of administrative resources to implement the changes. In many cases, the will and desire to make the required changes may run against long-standing agency and industry practices. A common thread that connects these strategies is the need for RTA to think of itself as a transportation *provider* that seeks to meet the transportation needs of county residents as efficiently and cost-effectively as possible, rather than as a transportation *operator* that operates and maintains buses, trains and infrastructure. This change in mindset is critical to meeting the changing and increasingly diverse needs of RTA's service area and capitalize on the increasingly wide range of options for providing transportation services in the 21st century.

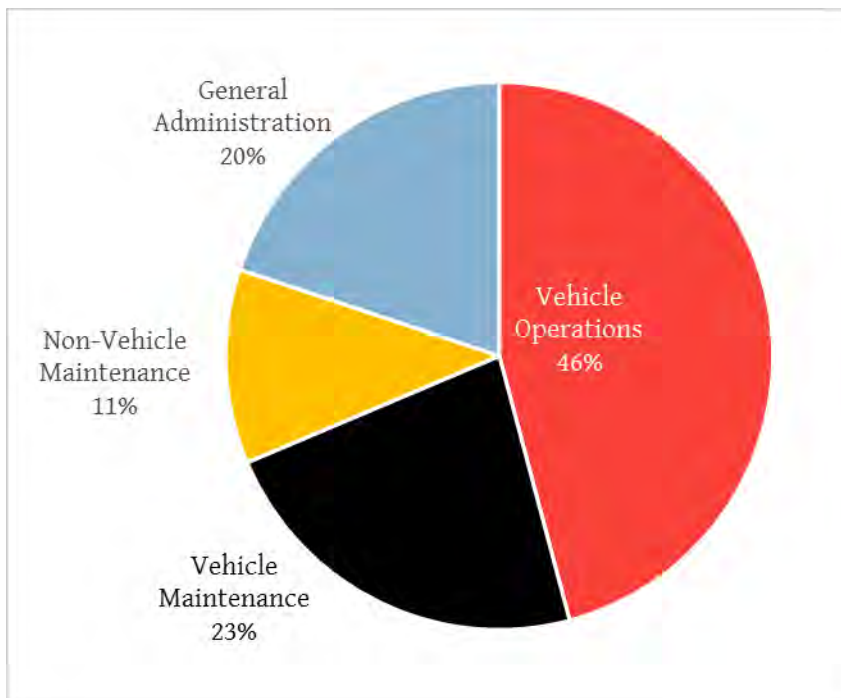
6.2 OPERATIONS

The following recommendations present strategies to achieve cost efficiencies through improvements to RTA services and operations, including administration, privatizing service and redesigning its network and service approach.

6.2.1 ADMINISTRATION

RTA can redirect funding to service improvements or system state of good repair investments if it reduces administrative costs. RTA's share of administrative expenses (20% of the total budget) is higher than its peer agencies which average 16%. Administrative expenses reduce the pool of funds that the agency can draw upon for operations and maintenance, causing RTA's operational budget (46% of the total) to be significantly lower than that of its peer agencies which average 54%. RTA's expenses by category are shown below in **Figure 6-1**.

Figure 6-1: RTA's expenses by category



Source: NTD.

Note: All costs expressed in Year-of-Expenditure (YOE) dollars.

Strategy 1: RTA can recover up to \$13 million for operations and maintenance if it reduces its administrative budget to peer agency levels

RTA's current staffing arrangement presents several opportunities to trim administrative costs. As an increasing number of older employees retire, the agency is positioned to make cost-minded staffing changes. RTA has about 20% more administrative staff than its peer agencies. Strategies that may be effective in bringing RTA's administrative costs and headcount into line with the average of its peers, include:

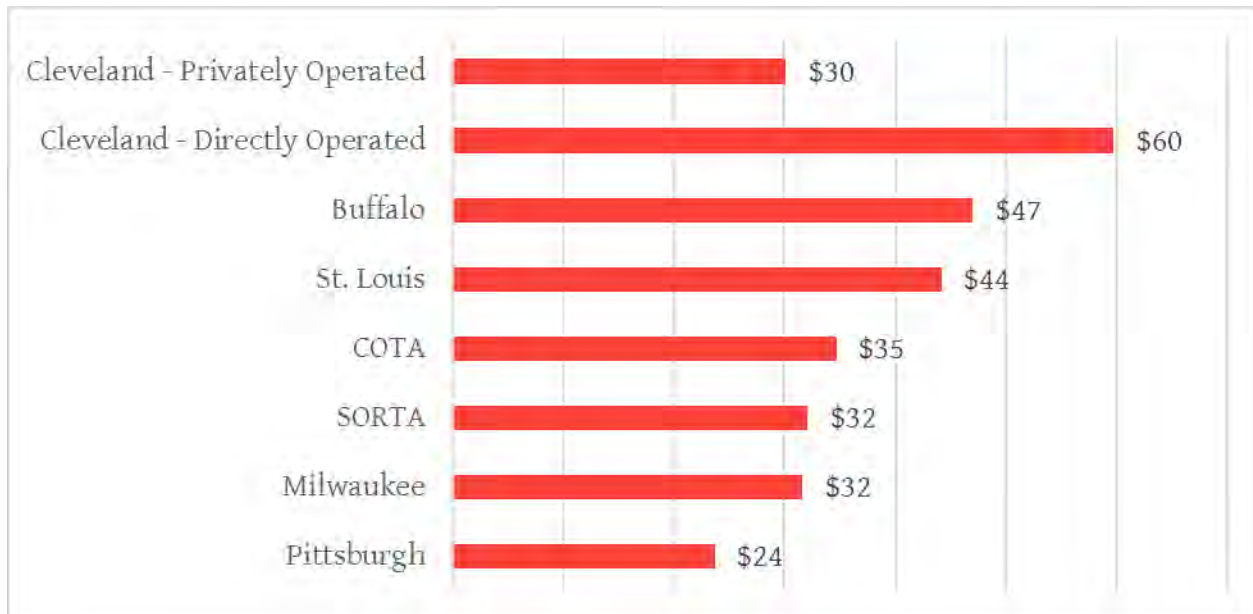
- 1 Streamlining the agency's administrative structure
- 2 Combining responsibilities as appropriate to adjust the number of positions to actual agency needs
- 3 Eliminating redundant positions and levels of management or support staff
- 4 Evaluating ways to restructure administrative responsibilities to expand the use of part-time employees

RTA's current use of part-time employees is limited to operations and vehicle maintenance, with few part-time employees in non-vehicle maintenance and administration. Growth in the number of retirees provides the opportunity for transit agencies to expand the use of part-time employees to reduce cost and improve service quality in all areas of agency operations.

6.2.2 PRIVATIZATION

Paratransit is one of the most expensive and challenging services for any transit agency to provide. RTA is mandated to provide individual, origin-to-destination service under Federal law, which strictly regulates service provision. RTA currently contracts 55% of its paratransit trips to private companies; the remaining 45% of trips are operated by RTA's its own drivers and fleet. These directly operated trips comprise a disproportionate 62% of RTA's paratransit budget, and cost twice as much to operate as the contracted trips. The average paratransit costs per trip of RTA and its peer agencies are presented in **Figure 6-2**.

Figure 6-2: Paratransit costs per-trip across peers, privately and agency operated



Source: NTD.

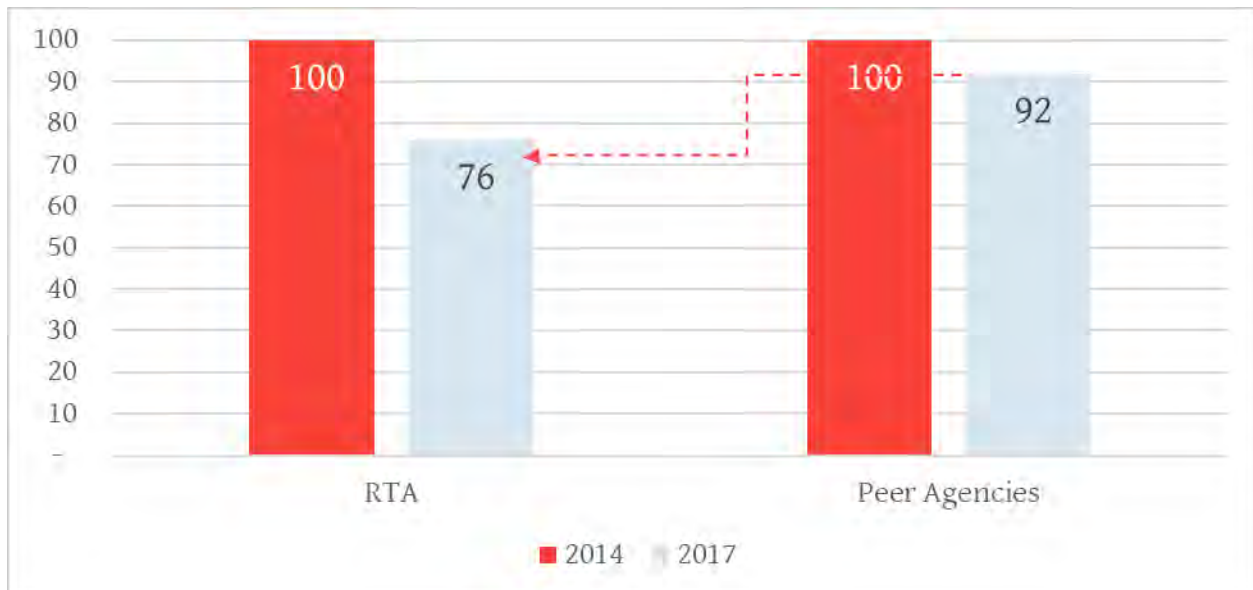
Strategy 2: RTA would recover \$7.9 million per year for operations and maintenance if all of RTA's paratransit trips were privately operated.

Shifting more paratransit trips to private operators and privatizing other areas of RTA's operation would reduce costs, allowing RTA to expand service, explore innovative service offerings, and increase state of good repair investments. Privatization of some fixed-route local bus routes and services, maintenance functions, system security and policing, and administrative functions, presents additional opportunities for cost efficiencies. Although many privatization efforts are constrained by collective bargaining agreements covering RTA workers, many others remain unexplored and untapped, offering RTA a potential opportunity to reduce costs while further enhancing its reputation as one of the industry's most innovative operators.

6.2.3 NETWORK

RTA's ridership has fallen significantly in recent years. Transit ridership has been in decline for most US transit agencies, large and small, for the past 5-7 years. Explanations for this decline include the strong economy and robust job growth; historically low and stable fuel prices and sub-prime financing for private vehicles; changes to the way people work, like teleworking, flex-time and increasing part-time employment; and trips shifted to walking, bicycling, and TNCs like Uber and Lyft. Even so, RTA's ridership loss has been particularly steep. For example, light rail ridership in 2017 is only 76% of 2014 levels, as shown in **Figure 6-3**. Ridership declined 31% from 2007 to 2017, despite the historically small population declines in Cleveland and Cuyahoga County over the same period (minus two percent and minus four percent, respectively).

Figure 6-3: Decline in light rail ridership, indexed to 2014 levels



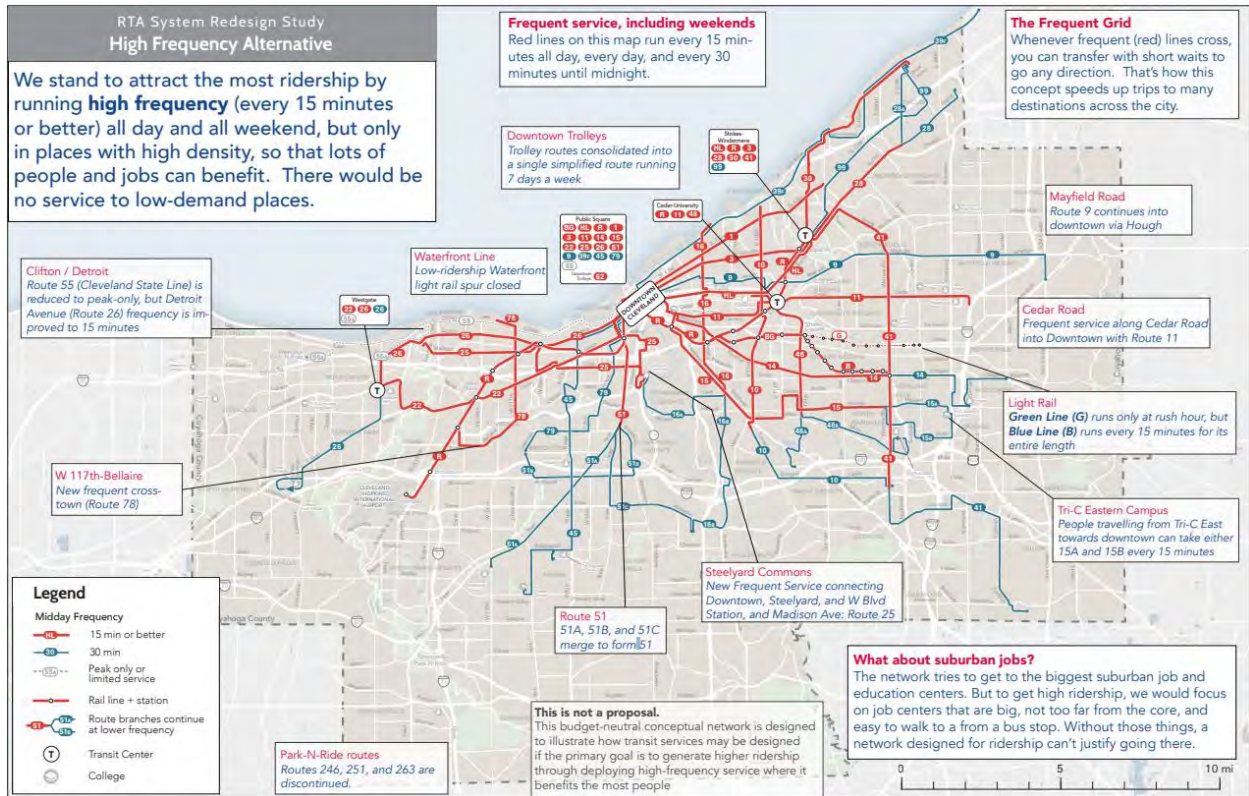
Source: NTD

RTA is undertaking a system redesign project to develop specific recommendations for improving its fixed-route transit services and stemming ridership losses. This process will give RTA the opportunity to realign its service to current demand patterns and levels and highlight less productive, circuitous and poorly performing routes that the agency can consider reducing or eliminating, to free up resources that can be shifted to increasing service frequencies on more productive routes.

Strategy 3: RTA’s revenue would grow by \$6 million if a network redesign led RTA’s local bus ridership to recover to peer levels.

The High Frequency Alternative of the redesign study (as presented in July 2019) proposes a fast, frequent network serving high density locations, primarily consisting of routes with 15 minute headways, with service provided seven days a week. This structure would also shorten transfer wait times between intersecting routes, enabling faster travel across the city. The routes in this alternative focus on large job and education centers that are located not very far from downtown Cleveland, eliminating routes serving the periphery of the region. The High Frequency Alternative’s suggested network is shown in **Figure 6-4**.

Figure 6-4: High Frequency Alternative from RTA System Redesign Study



Source: RTA System Redesign Study (2019), Jarrett Walker and Associates

Other transit agencies pursuing similar projects recently have focused on developing fast, frequent service with headways of 15 minutes or less on most of their key routes. This best-practice approach has generated increased ridership and productivity at many US transit agencies, and offers RTA the opportunity to further streamline its fixed-route transit network while slowing or reversing the recent sharp ridership losses.

RTA can evaluate opportunities to cost-effectively serve riders on peripheral local bus routes operating in areas with limited transit markets, which may be eliminated or have their service levels reduced. These opportunities are described in the next section, Task 6.2.4, “Alternative Service”.

6.2.4 ALTERNATIVE SERVICE

As the distribution of population and job centers changes in the Greater Cleveland region, as discussed in Chapter 2, RTA must consider new solutions to optimally serve the region, including low-density areas that RTA cannot serve cost-effectively with traditional fixed-route local bus service. These new solutions potentially include partnerships with other transportation providers.

Strategy 4: If RTA partners with other transportation providers, the agency can expand its customer base and recover costs from ineffective fixed-route services.

RTA can consider partnering with Transportation Network Companies (TNCs), local taxi companies and auto rental companies to more effectively connect its fixed-route network to residents and jobs located in lower-density parts of the region. RTA may find that offering alternative service options allows it to address service requests from lower-density areas more cost-effectively than operating fixed-route local bus service, while offering a better service option more appropriate to the needs of these areas. Microtransit⁶ or subsidized taxi and TNC services could connect residents of lower-density areas to fixed-route transit services, and provide residents of higher density areas with access to jobs in lower-density locations. Implementation of this strategy could help RTA significantly expand its coverage at a relatively low cost, freeing up resources to improve service in core areas of the region. WSP has identified a list of potential sites for trial alternative services, based on demographics and employment growth. These locations include:

- Solon Industrial Area
- Landerhaven Corporate Center
- Rockside Road at I-77 in Independence
- Crocker/Bassett Road Corridor in Westlake

Furthermore, offering a variety of mobility solutions and connections to RTA’s fixed routes may attract new riders to the system, especially those with mobility challenges who live and work in sparsely served areas. It also offers RTA with a cost-effective option to serve employers who request service to workplaces located in remote or difficult-to-access parts of the service area, potentially with employers sharing the cost of the additional service provided. These options may incentivize additional riders to purchase monthly passes and commit to utilizing the system more frequently. Several transit agencies and municipalities nationwide have successfully operated similar programs in mid- and low-density environments. These programs often are designed to provide “first-mile” and “last-mile” trips, that fill gaps between transit stops or stations and the homes or workplaces of transit users that are located beyond the reach of fixed-route transit service.

⁶ Microtransit is defined by the US Department of Transportation as IT-enabled private multi-passenger transportation services, such as Via, that serve passengers using dynamically generated routes, and may expect passengers to make their way to and from common pick-up or drop-off points (<https://www.transit.dot.gov/regulations-and-guidance/shared-mobility-definitions>).

6.2.5 INTERAGENCY PARTNERSHIPS

While RTA is Ohio's largest transit agency by a large margin, Ohio has public transit operators in nearly every one of its 88 counties, and each of the six counties surrounding Cuyahoga County has public transit service. RTA cooperates with public transit agencies throughout the state through the Ohio Public Transit Association (OPTA), and saves money on fuel, bus parts and other goods and services through various one-off and on-going cooperative arrangements with other transit operators. However, there may be additional opportunities for RTA to reduce costs and improve service efficiency and effectiveness through partnerships with other transportation providers in Greater Cleveland and throughout Northeast Ohio. The economies of scale achieved by actively participating in a consortium of transit agencies, as RTA currently does for purchases of fuel and buses, may enable RTA to improve its efficiency if applied to service planning and other aspects of its operations and development.

Strategy 5: If RTA forms partnerships with other Northeast Ohio transit providers, it may find opportunities to reduce costs by coordinating or consolidating both new and existing services.

6.3 ASSETS

The following recommendations present strategies to achieve cost efficiencies through leveraging RTA's assets, including reinvestment in its network infrastructure as well as its real property holding.

6.3.1 REINVESTMENT

While RTA's fixed-route bus and paratransit fleet is within acceptable vehicle age limits, as noted in Chapter 4, Opportunities and Risks, RTA's rail fleet is more than thirty years old, the FTA-recognized useful life of a rail vehicle. In addition, RTA's HealthLine buses are in the process of being replaced at the end of their twelve-year useful life, and RTA's rail system and other infrastructure requires millions in additional investment in state of good repair improvements. Reductions in service levels on RTA's rail services and a mid-life rehab of the rail vehicles between 2000 and 2010 has resulted in the rail vehicles remaining reliable. However, the rail system has suffered chronic reduced train speed and periodic partial shutdowns due to state of good repair challenges (for example, the Summer 2019 shutdown of the Red Line between the West Boulevard Station and the airport to allow for shoring of a retaining wall). Reinvestments in the system infrastructure and vehicles will marginally increase the system's speed and reliability, and reduce both planned and unplanned shutdowns, which would cause ridership and fare revenue to marginally grow. Improved service reliability could improve the culture of transit ridership in the region, attracting riders to the system on a more frequent basis.

Strategy 6: RTA could increase its revenues by up to \$2.1 million if reinvestment in the RTA system led to significant ridership recovery.

Red Line (heavy rail) ridership has been declining since 1980, and has fallen by nearly two million users in the last decade. The Red Line had 7.6 million riders in 2008, and only 5.9 million riders in 2017, with most of this decline occurring between 2008 and 2014 (**Figure 6-5**). If reinvestment in the Red Line caused ridership to grow by 20%, growing to above seven million annual riders, the agency would gain an additional \$1.5 million in revenue.

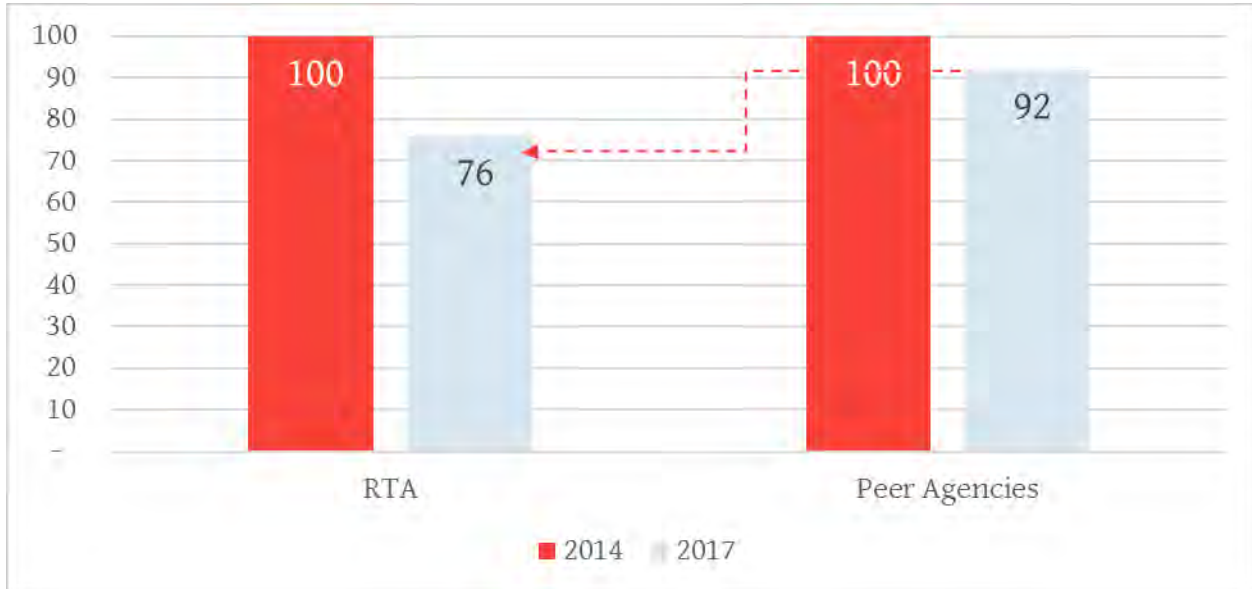
Figure 6-5: Heavy rail ridership decline, 2008-2017



Source: NTD.

Light rail ridership has also declined at a faster rate than peer agency averages in recent years. Peer systems have only lost 8% of their light rail ridership between 2014 and 2017, while RTA lost 24% of its ridership in that period. If reinvestment in light rail led ridership to recover to peer levels, the agency would gain an additional \$0.6 million in revenue. The decline in RTA’s light rail ridership compared to peer levels is depicted in **Figure 6-6**.

Figure 6-6: Light rail ridership decline, 2014-2017



Source: NTD.

Note: Ridership indexed to 2014 levels

6.3.2 PROPERTY

RTA has a significant portfolio of real estate holdings in Greater Cleveland, which it could potentially leverage to increase the agency’s revenue. RTA’s real estate holdings include hundreds of parcels—rail stations, rail yards, rail and bus storage and maintenance facilities, bus loops (off-street lots where buses turn around at the outer end of the route and park during layovers), transit centers, and other facilities. RTA also owns its headquarters office building, the former Root-McBride warehouse located at 1240 West Sixth Street in the Warehouse District, which RTA rehabilitated and has occupied since 1997.

RTA is currently evaluating opportunities to redevelop or liquidate its properties to assess whether a property’s sale or reuse would increase its value to the agency on a case-by-case basis. The agency also may find opportunities to generate a one-time or ongoing influx of capital if it explores creative financing options of its properties.

Strategy 7: If RTA leverages its real property assets, the agency can generate additional revenue and reduce costs.

RTA has made several key property sales in recent years, including the sale of two garages as well as parcels at the West 65th and Triskett Red Line Stations. The development community has expressed interest in properties located near stations, such as the West 25th corridor, and in developing housing along transit corridors. By partnering with local developers, RTA can leverage their development expertise to maximize the value of its property holdings.

RTA's main office building in Downtown Cleveland is among its most valuable real estate holdings. Given the agency's reduced office space requirements, RTA may wish to explore the sale or rental of all or part of its main office property.

6.4 PLANNING

The following recommendations present strategies to achieve cost efficiencies through regional planning and coordination efforts that involve RTA as an integral development partner, and the agency's bus and rail networks as key components of the region's economic development strategy.

6.4.1 DEVELOPMENT

Cleveland has the most extensive rail and Bus Rapid Transit system for an American urban area of its size. It is the smallest urban area in North America to have both Heavy (the Red Line) and Light rail (Blue, Green and Waterfront lines) transit systems. The HealthLine has features superior to BRT systems in Boston, Chicago, Los Angeles and New York.

Cleveland's rail transit and BRT systems are invaluable assets to the region that offer significant potential for development opportunities, if they are perceived as such by regional stakeholders who could collaborate with RTA to support development along transit corridors. RTA's Red Line uses the same basic technology as the New York subway system and the Washington D.C. Metro. When not hobbled by track shutdowns and slow orders, the Red Line can travel from Hopkins Airport to downtown Cleveland in less than 30 minutes and could transport more than 10,000 people per hour in each direction if operating at its peak capacity. RTA has estimated the cost of replacing its rail lines at approximately \$4 billion. Many peer and larger cities nationwide are investing billions of dollars to develop comparable rail and Bus Rapid Transit networks, confident that the transportation benefits of rail transit systems and the transformative community benefits with the additional tax revenues generated by new development around rail and Bus Rapid Transit stations will more than compensate for the capital investment and ongoing operating costs.

RTA's investment in the system has successfully encouraged development in various parts of the city. The HealthLine, a nationally acclaimed Bus Rapid Transit corridor, has been a significant factor in attracting more than \$9 billion in development to the Euclid Corridor since 2008. The recent reconstruction of the Cedar-University station and relocation of the Mayfield-Little Italy station on the Red Line have caused ridership to increase and attracted hundreds of millions of dollars in redevelopment in the surrounding areas, like the 27 Coltman townhouse development. A TOD project is ongoing on RTA-owned and adjacent property at the West 25th Street Station in Ohio City, and development plans exist for many other RTA Red and Blue Line stations. However, the response of the private development community at most RTA rapid stations has been limited considering the transportation potential of the rapid transit lines. This is particularly true for many of the Red Line stations which offer fast, convenient service to Downtown Cleveland, Hopkins Airport and University Circle, and have, in many cases,

adjacent unoccupied or under-utilized land that is prime for redevelopment—land that, in other cities with rail or Bus Rapid Transit lines, would be valued in the millions of dollars per acre.

Strategy 8: The creation of a regional partnership to promote development along transit corridors will offer numerous benefits to Greater Cleveland businesses and residents.

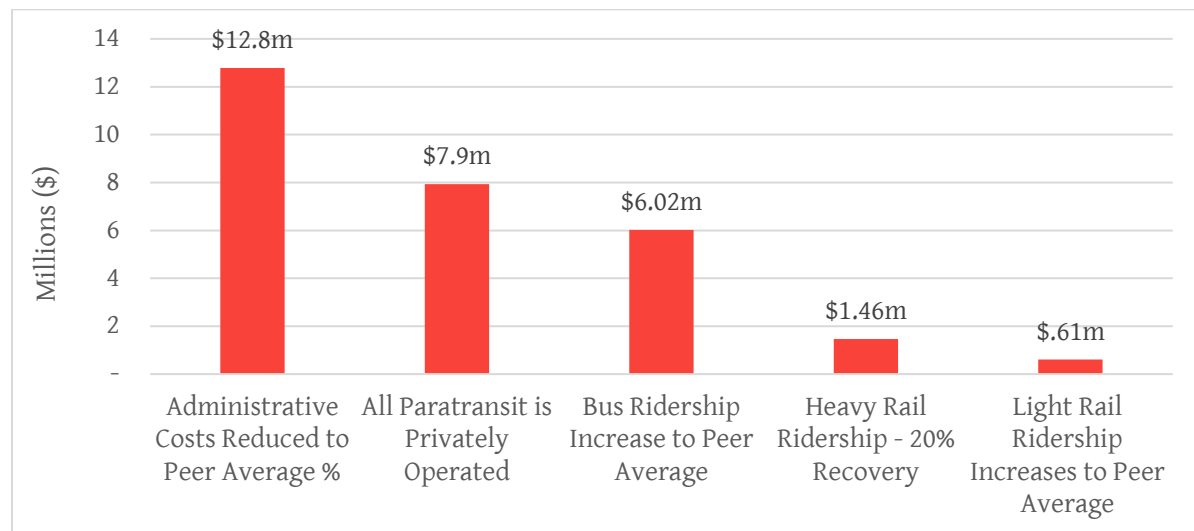
Civic leaders could spearhead a regional partnership to develop a vision for transit-oriented development in the Greater Cleveland area, leveraging RTA’s rail and Bus Rapid Transit network to create economic development opportunities. This community-based partnership can connect major private employers, municipal leaders, the not-for-profit sector and development finance institutions, such as the Port of Cleveland, to create a nuanced and unified vision for Cleveland’s as a transit-oriented region.

This regional partnership can assess the RTA network’s integral role in enhancing regional economic development, especially by bringing jobs back to downtown Cleveland and attracting higher-density, mixed use development to RTA rail and BRT stations and adjacent under-utilized properties. The partnership will improve communication between integral stakeholders in the region, fostering the dialogue to encourage changes to support transit-oriented development, such as a transit-supportive zoning code and the attraction of private and public employers from within and outside the region who need young professionals who value transit access.

6.5 CONCLUSIONS

As **Figure 6-7** indicates, implementation of the strategies above for which benefit estimates could be developed could provide RTA with more than \$25 million each year in reduced costs or added revenue. If successfully implemented, the other strategies could generate millions more in additional revenue and/or reduced costs to RTA, as well as other transportation, environmental and development benefits.

Figure 6-7: Cost Efficiency and Revenue Enhancement Strategies



Source: NTD, RTA Budget, WSP Estimates

By evaluating opportunities to improve the agency and system's operational efficiency, maximizing utilization of its assets and fostering a consortium of regional advocates of transit-oriented developments, RTA can refine or eliminate inefficient and poorly performing elements of its system while achieving cost efficiencies that enable it to provide improved mobility throughout Greater Cleveland. Development along transit corridors can be beneficial to the business community and other private and public employers, RTA, and to residents of Greater Cleveland, as new mobility options enable mixed-use development opportunities.

7 KEY PERFORMANCE INDICATORS

7.1 OVERVIEW

Key Performance Indicators (KPIs) are powerful tools used in the implementation and evaluation phase of performance-based planning to monitor, evaluate, and report progress towards an agency's targets and goals.⁷

KPIs should be tied directly to an organization's goals set through its strategic plan. Each goal should be measurable, with target metrics assigned to each item. Effective KPIs provide simple ways for agencies to track its performance and identify areas in need of additional resources.

Best practices state that transportation KPIs should be 1) Trackable over time; 2) Have a storytelling potential; 3) Be meaningful for types of service measured; 4) Be related to transportation goals; and 5) Have available data.⁸

The WSP Team completed an in-depth review of RTA's current KPIs and performance management tracking system to understand how these tools are being used, and how they can be improved to strengthen the health – and perception – of the organization.

To complete this task, the WSP Team first performed an external review of publicly available information related to the agency's performance management to assess what information was available to the average RTA rider. This included information provided via the website, included the:

- Performance management section in the FY2019 budget,⁹
- Imagine RTA 2010-2020 Strategic Plan,¹⁰ and
- 2016-2018 Vital Few Objectives (VFO)¹¹.

The WSP Team also obtained detailed information from the agency's performance management program architect and conducted an interview with the program's current lead.

7.2 PEER ASSESSMENT

WSP assessed and compared metrics in four primary criteria for publicly available KPIs and performance management programs for nine peer agencies and four agencies recognized as best in class for performance management by their peers. The peer agency review was based entirely on publicly available information, while RTA's assessment, as noted, includes information provided by the agency.

⁷ Federal Highway Administration. Performance-Based Planning and Programming Guidebook. 2013. https://www.transit.dot.gov/sites/fta.dot.gov/files/Performance_Based_Planning_and_Programming_Guidebook.pdf

⁸ Florida Department of Transportation. Best Practices in Evaluating Transit Performance Report. 2014. https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/content/transit/pages/bestpracticesinevaluatingtransitperformancefinalreport.pdf?sfvrsn=48878730_0

⁹ Greater Cleveland Regional Transit Authority, 2019 Budget Book. Page 77. <http://www.riderta.com/budget/2019>

¹⁰ Greater Cleveland Regional Transit Authority. Imagine RTA- Strategic Plan 2010-2020.

¹¹ 2019 VFOs are not found on the website

7.2.1 PEER FINDINGS

The review focused on nine peer agencies:

- Buffalo (Niagara Frontier Transportation Authority, NFTA) –¹²
- Pittsburgh (Port Authority of Allegheny County)¹³
- Detroit (Department of Transportation, DOT)¹⁴
- Milwaukee (Milwaukee County Transit System, MCTS)¹⁵
- Cincinnati (Southwest Ohio Regional Transit Authority, SORTA)¹⁶
- Norfolk/Virginia Beach (Hampton Roads Transit, HRT)¹⁷
- Baltimore (Maryland Transit Administration, Maryland MTA)¹⁸
- Philadelphia/Camden, NJ (Port Authority Transit Corporation, PATCO)¹⁹
- Kansas City (Kansas City Area Transportation Authority, KCATA)²⁰

As shown in **Table 7-1** and **Table 7-2**, RTA is leading its peers in performance tracking. However, this assessment only includes publicly available information for peers, so it is possible that the peer agencies have a more robust tracking system available internally. Regardless, RTA has designed a comprehensive and functional performance tracking system with KPIs that are clearly tied to its strategic plan, include achievable targets, and designate ownership to ensure staff accountability.

The assessment found that RTA leads its peers in defining ownership of KPIs, particularly because it houses a centralized KPI office which monitors and disseminates information internally and because RTA has established a clear KPI owner for each metric. When compared to peers, RTA could improve practices with respect to the purpose and tracking of KPIs. The assessment found that some peer agencies, including Maryland MTA (Baltimore), NFTA (Buffalo), and KCATA (Kansas City) publish the data source or data tracking tool utilized to measure each KPI. Additionally, both Maryland MTA and Detroit DOT establish a tracking frequency for KPIs.

The assessment found that RTA can improve publication of KPIs. While RTA currently produces publicly facing reports to disseminate information about KPIs, RTA does not have a centralized public dashboard. Several peer agencies, including Baltimore MTA, HRT, and Detroit DOT have publicly available dashboards, which serve as a one-stop location for riders to gather information about the

¹² Niagara Frontier Transportation. 2018-2019 Annual Performance Report. http://www.nfta.com/pdfs/2019/public_info/2019-metro_annual_performance_report.pdf

¹³ Port Authority of Allegheny County. 2018 Performance Report. <https://www.penndot.gov/Doing-Business/Transit/InformationandReports/Documents/BPT%20Annual%20Report%202016-17.pdf>

¹⁴ Detroit Department of Transportation. Public Dashboard. 2019. <https://detroitmi.gov/departments/detroit-department-transportation/ddot-performance-dashboard>

¹⁵ Milwaukee County Transit System. 2018 Year in Review Report. <https://www.ridemcts.com/getattachment/About-MCTS/2018-Annual-Report-FINAL.pdf?lang=en-US>

¹⁶ Southwest Ohio Regional Transit Authority. About SORTA. 2019. <https://www.go-metro.com/about-metro/about2/about-metro-2>

¹⁷ Hampton Roads Transit. Performance Dashboard. 2019 <https://gohrt.com/agency/performance-metrics/>

¹⁸ Maryland Transit Administration Public Dashboard. 2019. <https://www.mta.maryland.gov/performance-improvement>

¹⁹ PATCO. From the General Manager. 2019. <http://www.ridepatco.org/about/fromGM.asp>

²⁰ Kansas City Area Transportation Authority. Strategic Plan. 2018. https://www.kcata.org/documents/uploads/KCATA_Strat_Plan.pdf

agency's progress and key areas that need improvement. RTA, however, is a leader among peers with respect to capturing a breadth of KPI categories.

Table 7-1: Peer Assessment Authority & Tracking

Peer Agency	Authority		Purpose & Tracking			
	Centralized KPI office	Dedicated KPI owner	Stated KPI purpose	Stated KPI target	Stated KPI tracking frequency	Data collection method
GC RTA	✓	✓	✓	✓		
MD MTA		✓	✓	✓	✓	✓
HRT			✓	✓		
PATCO						
KCATA		✓		✓		✓
Buffalo NFTA			✓			✓
Pittsburgh				✓		
Detroit DOT					✓	
Milwaukee MCTS						
Cinn. SORTA				✓		

Source: Produced by WSP

Table 7-2: Peer Assessment Publications & Categories

Peer Agency	Publication		KPI Categories					
	Public dash-board	Public report	Operational performance	Fiscal responsibility	Customer service	Safety	Innovation	Improvement
GC RTA		✓	✓	✓	✓	✓	✓	✓
MD MTA	✓	✓	✓	✓	✓	✓		
HRT	✓	✓	✓	✓	✓	✓		
PATCO								
KCATA		✓	✓	✓	✓			
Buffalo NFTA		✓	✓	✓	✓	✓		
Pittsburgh		✓	✓	✓				
Detroit DOT	✓		✓					
Milwaukee MCTS					✓			
Cinn. SORTA		✓	✓	✓				

Source: Produced by WSP

7.2.2 BEST IN CLASS FINDINGS

WSP also compared RTA to four known “Best in class” agencies at performance management reporting:

- Boston (MBTA)
- San Francisco (BART)
- Austin (Cap Metro)
- Washington, DC (WMATA)

These four agencies were selected based on WSP’s experience in the field and RTA’s input on peers they have identified as leaders in performance tracking.

The assessment—which yielded similar results to the peer benchmarking task—found that RTA is on par with “best in class” agencies in terms of defining ownership of KPIs. However, RTA could improve purpose and tracking of KPIs by stating the frequency of tracking each KPI and the data source or collection methods utilized to inform KPI progress. The results of the assessment are provided in **Table 7-3**.

Table 7-3: Best in Class Assessment Authority and Purpose Categories

Agency	Authority		Purpose & Tracking			
	Centralized KPI office	Dedicated KPI owner	Stated KPI purpose	Stated KPI target	Stated KPI tracking frequency	Data collection method
GC RTA	✓	✓	✓	✓		
MBTA	✓	✓	✓	✓	✓	✓
WMATA	✓	✓	✓	✓	✓	✓
Cap Metro			✓		✓	
BART	✓	✓	✓	✓	✓	✓

Source: Produced by WSP

RTA could also strengthen tracking and transparency of KPIs by creating a centralized public dashboard to facilitate easy access of information for riders. Among MBTA, WMATA, Cap Metro, and BART, RTA is the only agency that does not maintain a public-facing dashboard.

Table 7-4: Best in Class Assessment Publication & Categories

Peer Agency	Publication		KPI Categories					
	Public dash-board	Public report	Operational performance	Fiscal responsibility	Customer service	Safety	Innovation	Improvement
GC RTA		✓	✓	✓	✓	✓	✓	✓
MBTA	✓	✓	✓	✓	✓	✓		✓
WMATA	✓	✓	✓	✓	✓	✓		✓
Cap Metro	✓	✓	✓	✓	✓	✓		✓
BART	✓	✓	✓	✓	✓	✓		✓

Source: Produced by WSP

7.3 TRACKING AND REPORTING

RTA has an extensive system for tracking and reporting KPIs, including Balance Scorecards, Vital Few Objectives and TransitStat. While the agency’s KPIs are deliberately linked to its strategic goals, and its data monitoring program, **TransitStat**, is advanced, the agency lacks a single internal and external reporting mechanism to disseminate its continued progress.

RTA uses **Balance Scorecards** to review its plan for short-term and long-term performance. The Balanced Scorecard includes RTA’s areas of focus and **Vital Few Objectives (VFOs)**, which are used as used integral goals the Executive Team sets at the beginning of the year to measure its progress.

RTA tracks VFOs in four categories: 1) Fiscal Responsibility; 2) Voice of the Customer; 3) Continual Process Improvements and Innovation and Learning.

With the help of an external consultant, internal dashboards are updated each month and distributed to the leadership team to track progress. These dashboards are not available to all staff, and are not made publicly available until the agency’s annual budget is released when the annual dashboards are included. Each VFO includes a target as well as indicators to RTA’s success.

TransitStat is RTA’s performance monitoring program. It is characterized by “frequently scheduled performance monitoring forums, embracing the use of data, statistics, and metrics as a means to exceed customers’ expectations, as well as achieve operational excellence. It is a critical link to achieve high-level performance directed towards RTA’s mission, Vision, and Values.”²¹ RTA follows four performance management principles: to provide timely accurate data; analyze data and develop effective solution for emerging issues; deploy resources quickly to address issues; and follow up and assess each assignment and commitment relentlessly.²²

²¹ RTA. FY 2019 Budget. Page 58. 2019.

²² RTA. Performance Management – Transit State. FY 2013 Budget.

<http://www.riderta.com/sites/default/files/pdf/budget/2015/2-2-PerformanceManagement.pdf>

Annual metrics are created each January by the Executive Management Team²³ and weekly performance meetings with the leadership panel occur with specific departments on a rotating schedule. The TransitStat leadership Team includes the Chief Executive Officer (CEO), the Deputy General Manager (DGM) of Operations, the DGM of Human Resources, the Director of Human Resources, the Executive Director(ED) of Internal Audit and the ED of the Office of Management & Budget (OM). Topics of weekly meetings can be altered to focus on high priority items that may arise.

The three most critical objectives of TransitStat are to:

- 1 Maintain Financial Health
- 2 Improve Customer Service
- 3 Enhance the Image of RTA²⁴

With small adjustments, RTA can leverage its existing program to improve communication with the public. Adopted in 2007, the program has resulted in \$97 million in RTA savings since 2008.²⁵ This figure is not published on RTA's website for riders to quickly appreciate.

Additionally, RTA incentivizes staff to perform to target with an employee program called **Together Everyone Achieves More (TEAM)** designed to reward eligible employees for meeting certain goals related to safety, reliability, customer satisfaction, and ridership/revenue. Financial incentives range from \$10 - \$40 monthly, for measures such as preventable collision and boardings between complaints, and a \$100 annual payout if RTA's Farebox Recovery Ratio goal is met.

RTA has other resources available to staff to ensure they effectively manage change and agency performance.

7.4 CONCLUSION

RTA is well on its way to being considered "best in class" in performance management tracking, having developed a thorough and effective system to monitor RTA's performance and progress through strategic KPIs. However, RTA falls short in providing a transparent centralized reporting mechanism for all employees and available to the public.

By being more transparent both internally and externally, RTA can react more quickly to issues and can garner additional appreciation from its riders and the public at large. When issues arise, riders feel more in control when agencies are transparent about identified issues and planned solutions. Lack of communication and transparency can cause riders to feel like the agency is not working as hard as it can to improve, even if that is not the case.

²³ See <http://www.riderta.com/emt> for a current list of Executive Management Team members.

²⁴ RTA. Performance Management – Transit State. FY 2013 Budget. <http://www.riderta.com/sites/default/files/pdf/budget/2015/2-2-PerformanceManagement.pdf>

²⁵ Savings sourced from internal document provided by RTA.

RTA could consider the following:

- 1 Streamline internal tracking and reporting efforts.** Currently, certain KPIs are reported through multiple channels to small groups of staff. This system was designed to ensure that each team is aware of relevant KPIs to its mission. However, the absence of a singular internal performance management resource reduces the ability for RTA staff to be informed about the agency's financial and operational health. Creating a centralized KPI reporting hub through RTA's intranet that is updated daily, weekly, or monthly, can help employees become more proactive when a problem arises. Ensuring all teams are informed about the KPIs that directly affect their team's metrics and of each department's standing would also help inspire staff to ensure its individual goals are met, knowing they will be publicly reported.
- 2 Develop a centralized public facing dashboard.** If RTA published its monthly VFO reports on its website, the public would be better informed on RTA's performance and progress. As a rider, if something about a system appear to be working at sub-optimal standards, it is reassuring to see through easily digestible data that either RTA is performing on target most of the time, or that the agency is in fact aware of the issue, and is actively working to meet its target metric.²⁶

²⁶ Savings sourced from internal document provided by RTA.

8 FUNDING OPTIONS

8.1 OVERVIEW

As discussed in Section 5, existing revenue streams dedicated to public transportation in Cuyahoga County are insufficient to support RTA's O&M and capital needs. Deficits stemming from the Cuyahoga County Sales & Use tax shortfalls, in addition to the growing capital needs of a transit agency facing an aging asset base, necessitate an evaluation of alternative new funding options for RTA.

To advise GCP and the broader Cleveland region on the best funding options available, the WSP Team identified a full range of potential revenue sources. The sources include existing revenue sources used to fund local transit in Ohio, existing revenue sources used by local governments in Cuyahoga County, and revenue sources used to fund transit in other states. The full list of identified sources is provided in **Figure 10-1** of the Appendix.

8.2 PROMISING NEW REVENUE SOURCES

Potential revenue sources were evaluated according to the assessment criteria summarized in **Table 8-1**. The criteria assess each source relative to ease of implementation, economic, political and administrative conditions. The scoring criteria are summarized in the appendix, with full circles representing high (positive) scores, empty circles representing low (negative) scores, and half-filled circles representing medium scores.

Table 8-1: Revenue Sources Assessment Criteria

Criterion	Description	Rating
Revenue potential	Amount of funding source may yield for RTA annually	<ul style="list-style-type: none"> ● High (>\$20M) ◐ Medium (\$10-20M) ○ Low (<\$10M)
Keep pace with inflation	Source keeps pace or is correlated with general price inflation	<ul style="list-style-type: none"> ● Indexed and/or keeping pace with inflation ◐ Sometimes keeping pace with inflation ○ Not indexed/not keeping pace with inflation
Equity	Proportionate impact across income levels	<ul style="list-style-type: none"> ● Progressive (consistent with incomes) ◐ Neutral ○ Regressive (higher burden on lower incomes)
Nexus with beneficiaries	Correlation with beneficiaries of RTA service	<ul style="list-style-type: none"> ● Directly related to the beneficiaries ◐ Some relation ○ No relation
Stability/predictability	Annual stability and predictability	<ul style="list-style-type: none"> ● Generally stable/predictable ◐ Varies but generally predicable ○ Relatively unpredictable/volatile
Administration	Administrative, collection, and enforcement costs	<ul style="list-style-type: none"> ● Already collected at some level/low cost ◐ Moderate administration and collection costs ○ New administration and collection mechanisms/costly
Political Feasibility	Overall feasibility/support for using funding source for RTA	<ul style="list-style-type: none"> ● High (existing local tax, used for transit) ◐ Moderate (existing local tax, but not used for transit) ○ Weak (not an existing tax)

Source: WSP Estimates

These scores were subsequently used to rank the full list of potential revenue sources (see Table 2 in the Appendix). Further analysis identified revenue sources that would not be feasible for funding local transit capital needs in Cuyahoga County, based on an evaluation of restrictions within current Ohio state law. Based on the ranking and feasibility analysis, the WSP Team selected a short list of the most promising potential revenue sources.

RTA currently levies a 1% County-wide Sales & Use Tax, which makes up 73.6% of the agency's revenues.²⁷ The tax was approved by voters in 1975. The combined county sales tax rate is 8%, which includes a 5.75% state levy, a 1.25% county levy and the 1% RTA levy.²⁸ RTA has the authority to place a ballot measure before county voters to raise the existing levy.

Advantages of a Sales & Use Tax hike include the source's large revenue potential – each 0.10% increase would net approximately \$20.7 million in additional revenues, based on 2019 RTA Sales & Use Tax revenue data. However, Sales & Use taxes are regressive, placing the highest burden on low-income households, and any additional levy would require a successful countywide ballot initiative, including the costs associated with any tax increase campaign.

Cleveland's overall sales tax rate is average among its peer cities. Cincinnati levies a 7% combined rate, Columbus a 7.5% rate, and Buffalo an 8.75% rate.²⁹ A detailed summary is presented in **Table 8-2**.

Table 8-2: Sales & Use Tax Evaluation Results

Criterion	Description and comments	Rating
Revenue potential	Each 0.1% Increase would net approx. \$20.7M annually	●
Keep pace with inflation	RTA projects slower-than-inflation growth	○
Equity	Regressive	○
Nexus with beneficiaries	Inasmuch as all County residents & visitors benefit from RTA	○
Stability/predictability	Vulnerable to economic downturn	○
Administration	Already exists	●
Political Feasibility	Existing tax, used for RTA	●

Source: WSP Estimates

²⁷ RTA FY19 Operating and Capital Budget

²⁸ Sales & Use Tax, Ohio Department of Taxation.

²⁹ Ernst and Young Cleveland Tax Benchmarking Study

8.2.1 PROPERTY TAX

In addition to its authority to levy a Sales & Use Tax, RTA can levy ad valorem property taxes. While there is no existing County property tax levy for transit, there are other levies in place at the County and taxing district-level (e.g. the Cleveland Metropolitan Park District, or the Cuyahoga Community College District).

Advantages of a new Property Tax levy include the source's large revenue potential – a one-mill levy would net approximately \$30 million, based on 2019 total assessed property value numbers from Cuyahoga County. However, there is no existing property tax levy for transit. Further, a new Property Tax levy would require a successful countywide ballot initiative, including any associated campaign costs.

Cleveland's overall effective real residential property tax rate exceeds that of most of its peers. Cleveland's 2.84% effective rate is higher than the rate in Columbus and Cincinnati (2.09% and 2.47%, respectively), but lower than the rate in Detroit (3.44%).³⁰ A detailed summary is presented in **Table 8-3**.

Table 8-3: Property Tax Evaluation Results

Criterion	Description and comments	Rating
Revenue potential	A new 1-mill levy would net approx. \$30M annually	●
Keep pace with inflation	Property values somewhat correlated with inflation	○
Equity	Somewhat progressive if based on percentage of property value	○
Nexus with beneficiaries	Inasmuch as all County residents benefit from RTA	○
Stability/predictability	Vulnerable to real estate cycle	○
Administration	Already exists at county-level	●
Political Feasibility	Existing tax, not used for transit	○

Source: WSP Research

³⁰ Ernst and Young Cleveland Tax Benchmarking Study.

8.2.2 COMMERCIAL PROPERTY TAX

The WSP Team also included a *commercial* Property Tax levy in its final list, given that a commercial-only tax levy may be able to garner more local voter support. However, given its more limited scope, a commercial-only levy would net less in revenue than a general Property Tax.

Cleveland's overall effective real commercial property tax rate exceeds that of most of its peers. Cleveland's 3.55% effective rate is higher than that in Columbus and Cincinnati (2.87% and 3.27%, respectively), but lower than the rate in Detroit (4.34%).³¹ A detailed summary is presented in **Table 8-4**.

Table 8-4: Commercial Property Tax Evaluation Results

Criterion	Description and comments	Rating
Revenue potential	Substantial revenue base, but less than a general property tax levy	D
Keep pace with inflation	Property values somewhat correlated with inflation	D
Equity	Somewhat progressive, but impacts both small and large businesses	D
Nexus with beneficiaries	Inasmuch as all County businesses benefit from RTA	D
Stability/predictability	Vulnerable to real estate cycle	D
Administration	Already exists at county-level for general property tax	D
Political Feasibility	Existing tax, not used for transit	D

Source: WSP Research

³¹ Ernst and Young Cleveland Tax Benchmarking Study.

8.3 ALTERNATIVE SCENARIOS

The Baseline Scenario that is discussed in Section 5, “Financial Outlook”, used revenues and costs as provided by RTA. However, there are many internal and external factors that can affect these values, such as the health of the local and national economy. This section describes the alternative scenarios that were explored in which various inputs are adjusted based the factors described below in **Table 8-5**.

Table 8-5: Alternative Growth Scenarios

Scenario	Operating Cost Growth	Capital Cost Contingency	Backlog	Sales & Use Tax Growth	Additional Revenue Source	Additional Revenue Source Contribution to Operating
Scenario 1 - Baseline	RTA inflation assumptions	Low Contingency	Not Prioritized	1.50%	None	None
Scenario 2 - High Inflation	Cost Growth 2.5%	High Contingency (15%), inflated CIP	Not Prioritized	1.50%	None	None
Scenario 3 - High Inflation with Sales Tax	Cost Growth 2.5%	High Contingency (15%), inflated CIP	Not Prioritized	1.50%	Additional Sales & Use Tax 0.60%	30%
Scenario 4 - High Inflation with Sales Tax/Updated Backlog	Cost Growth 2.5%	High Contingency (15%), inflated CIP	Prioritized	1.50%	Additional Sales & Use Tax 0.60%	30%
Scenario 5 - Low Inflation with Sales Tax/Updated Backlog	RTA inflation assumptions	High Contingency (15%), inflated CIP	Prioritized	1.50%	Additional Sales & Use Tax 0.50%	15%
Scenario 6 - High Inflation with Property Tax	Cost Growth 2.5%	High Contingency (15%), inflated CIP	Not Prioritized	1.50%	Property Tax 0.45%	30%

Source: RTA Budget Data, WSP Estimates

8.3.1 SCENARIO 2 – HIGH INFLATION

The baseline scenario summarized in Section 5 assumes low cost growth and contingency. Scenario 2 depicts a more conservative financial outlook by altering two of RTA’s key assumptions:

- 1 The operating costs are assumed to grow at 2.5% per year from 2020 onwards. This contrasts with RTA’s cost growth assumptions, which vary from one year to the next, but are on average lower than 2.5% per year.
- 2 Scenario 2 considers a 15% contingency on new railcar expenditures, rather than RTA’s assumption of approximately 5.7% contingency in the CIP.

In this scenario, RTA’s operating costs grow at a higher rate than operating revenues. The result is an operating deficit of \$362 million over the ten-year period, which is more than triple that of the baseline scenario.

On the capital side, the higher railcar contingency means that the deficit over the ten-year period increases from nearly \$658 million in the baseline scenario to \$855 million. Additionally, since backlog expenditure is not scheduled until 2024, the annual capital deficit will be greater in the later years.

8.3.2 SCENARIO 3 – HIGH INFLATION WITH SALES TAX

Both the Baseline Scenario and Scenario 2 show large funding gaps for operations and capital expenditures over the next ten years. The WSP Team reviewed various funding options to bridge the gap, detailed earlier in this section, “Funding Options”. Scenario 3 considers an additional Sales & Use Tax. RTA is restricted when increasing a Sales & Use Tax to 0.1% increments. In this case, a 0.6% increase was chosen because that amount will provide enough additional funding to cover both the operating and capital deficits shown in Scenario 2; because the tax must be an increment of 0.1%, there is some resulting surplus funding. This scenario also assumes that 30% of the additional funds from the Sales & Use Tax will be allocated to operations, while 70% will be allocated to capital.

This scenario does not lead to any capital deficit over the ten-year period (see **Figure 8** in the Appendix). However, there is a large variation in the surplus/deficit on an annual basis. In 2021, funding will exceed expenditure by just under \$24 million. In contrast, in 2025, the capital expenditure increase results in an annual deficit of \$16.4 million. The additional revenue source can be difficult to justify when there is such a surplus of funds in the early years, even if the surplus/deficit evens out over a longer period.

The annual deficit in 2025 and onward is mainly due to backlog expenditure, which is postponed to the last five years of the period. If the backlog is spread over the entire 10-year period, the expenditure would be more consistent each year, resulting in a more reliable funding surplus/deficit each year. A prioritized backlog is addressed by Scenario 4 below.

8.3.3 SCENARIO 4 - HIGH INFLATION WITH SALES TAX/UPDATED BACKLOG

Similar to Scenario 3, Scenario 4 considers the additional revenue sources necessary to bridge the funding gap in a conservative financial scenario. In addition to these assumptions, this scenario includes a prioritized backlog, in which backlogged projects have been spread over the ten-year period based on the priorities in **Table 8-6**. These rankings are based on RTA's own priorities.

Table 8-6: RTA Project Priorities

Project Category	Priority Ranking
Rail Infrastructure	1
Systems	2
Bus Rapid Transit	3
Passenger Facilities	4
Facilities	5
Admin	6
Other	7

Source: RTA Budget Data, WSP Estimates

Since the only difference between Scenario 3 and Scenario 4 is a prioritized backlog, the revenue and expenditure for operations remains unchanged. However, spreading out the backlog expenditure according to RTA's priorities over the period from 2021-2029 results in much steadier expenditure from one year to the next. This is a more realistic scenario, where the additional Sales & Use Tax revenue will not result in large surpluses in the earlier years.

8.3.4 SCENARIO 5 - LOW INFLATION WITH SALES TAX/ UPDATED BACKLOG

While Scenarios 2 through 4 have assumed a conservative financial outlook, Scenario 5 differs from Scenario 4 by assuming a more optimistic financial outlook. In Scenario 5, the operating cost growth assumption is taken from the 2019 budget, as it is in the Baseline Scenario. This scenario depicts the slower operating cost growth. However, this scenario still assumes a higher contingency of 15% on new rail car expenditure (see **Figure 12** in the Appendix).

Since operating costs grow at a slower rate, a 0.6% Sales and Use Tax is no longer necessary to bridge the funding gap. Instead, this scenario assumes a lower 0.5% additional Sales and Use Tax, with only 15% of revenue directed to operating, and 85% directed towards capital.

8.3.5 SCENARIO 6 – HIGH INFLATION WITH PROPERTY TAX

Although the additional Sales & Use Tax is a strong option to bridge the RTA’s funding deficit over the 10-year period, the WSP Team also explored the option of levying a Property Tax. Scenario 6 builds from Scenario 2, but includes a Property Tax of 0.45%. This percentage was chosen because it is high enough to fund the deficit without resulting in large surpluses.

The level of Property Tax revenue is dependent upon Cuyahoga County’s property values, which are reappraised every 3 years. Historical data show that property values can vary significantly, especially in a reappraisal year. For instance, the projected growth in assessed property value in 2019 is 11%. In contrast, the growth has not exceeded 1% since 2010.

8.4 CONCLUSION

RTA’s existing revenue streams, consisting primarily of revenue from a dedicated 1% countywide Sales & Use Tax levy, are insufficient to support the agency’s O&M and capital needs. Capital funds used consist essentially of federal and local funds. Additional non-Federal funds will be necessary to meet the existing and future needs of the transit system, if heavy rail and light rail are to be maintained as viable transportation options.

The WSP Team reviewed a comprehensive list of potential revenue options and identified three sources as the most feasible for implementation: a Sales & Use tax hike, a new Property Tax levy and/or a new commercial-only Property Tax levy. All these sources have been mentioned in the public conversation on the agency’s funding needs over the past few years.

The Baseline scenario shows gaps between funding and need, particularly for capital: the gaps become larger when the assumed inflation rate is higher. Two additional revenue sources could help bridge the gap: an Additional Sales & Use Tax or a Property Tax, both around .5%. These additional capital revenues would reduce the need to issue debt, resulting in lower costs for RTA and the region. Reprioritizing the backlog can optimize the use of additional funds.

9 CONCLUSIONS AND NEXT STEPS

CONCLUSIONS

For this Financial Analysis and Economic Forecast for the Greater Cleveland Regional Transit Authority, WSP reviewed six key areas related to RTA's performance and financial situation:

- 1 **Benchmarking:** RTA's operational performance offers a mixed picture, with high-performing services (Bus Rapid Transit: the HealthLine) countered by services that are not in line with peers with respect to costs (local bus) or ridership (rail services). Additionally, administrative costs at the agency level appear to be higher than most peers. From a governance standpoint, RTA's Board would benefit from limiting the number of terms and eliminating the stipend for Board members.
- 2 **Economic and Market Risks:** RTA is facing risks related to its funding (reliance on federal grants and local sales and use tax), its operations (declining ridership), its assets (underfunded rail infrastructure and need for costly rail vehicle replacement) and broad regional trends (dispersion of jobs and population centers). Opportunities to mitigate these risks, based on stakeholder input, include new CEO leadership who could foster positive change within the agency; the local bus redesign study that could improve operational efficiencies, especially if done collectively with transportation network companies (i.e. -Uber, Lyft); and, while less certain, the recent population growth in downtown Cleveland that could be create more interest in using transit.
- 3 **Financial Issues:** RTA's financial outlook shows limited deficits in the operating budget. However, projected costs of replacing new rail vehicles (\$240 million, per RTA) and meeting other unfunded maintenance needs, primarily related to the rail system, far exceed available capital revenues.
- 4 **Cost Efficiencies and Revenue Enhancement Strategies:** Cost reduction strategies, relying on privatization and internal reorganization, could lead to potential savings of \$21 million per year, while additional revenues could amount to \$8 million through ridership recovery with local bus system redesign and reinvestment in the rail system. To support its rail infrastructure, the region should consider as a priority long-term coordination of RTA's service development and capital investments with governmental, business, and non-profit entities to direct economic development toward rail station areas, which are currently underutilized.
- 5 **Key Performance Indicators:** RTA has successfully developed advanced performance reporting systems. To enhance its performance-based management, reputation and transparency, RTA should share its goals and results both internally with all its employees and externally with its riders and the public.
- 6 **Revenue Sources and Options to Bridge Funding Gaps:** Among various local revenue sources used to fund transit across the U.S., RTA has the ability to levy sales-and-use and property taxes at the county level. Based on RTA's assessment of its capital needs, substantial funding increases are needed to recapitalize its rail infrastructure and replace its trainsets. What is uncertain is if that increased funding to cover the capital shortfall will yield a high return-on-investment in terms of increased ridership.

NEXT STEPS

RTA and the Greater Cleveland region are at a crossroads. Based on this report, the business community will be able to weigh the trade-offs among the available options for transit operations. Without additional

funding, RTA's rail service risks being gradually curtailed as key infrastructure becomes unsafe for operation, eventually limiting its services to Bus Rapid Transit (BRT), local bus services, and paratransit service for people with disabilities. With additional funding and coordination across sectors (government, business, non-profit), the region could reorient economic development toward areas served by the region's rail infrastructure asset.

Many metropolitan areas in the United States are currently investing billions of dollars to develop rail transit systems similar to the network that already exists in Cleveland. For significantly less investment, RTA could bring their rail infrastructure to a high performing standard. RTA's HealthLine BRT provides a local example of the ability of a transit system to generate economic benefits and to attract and shape transit-oriented development. Scaling this type of development strategy across the rail infrastructure is needed to maximize the investment. Greater Cleveland needs an aligned economic development strategy to enhance the use of RTA's rapid transit system. Regional support for additional transit funding should be coupled with other reforms and investment along the rapid transit corridors.

10 APPENDIX

Figure 10-1: List of Revenue Sources Identified

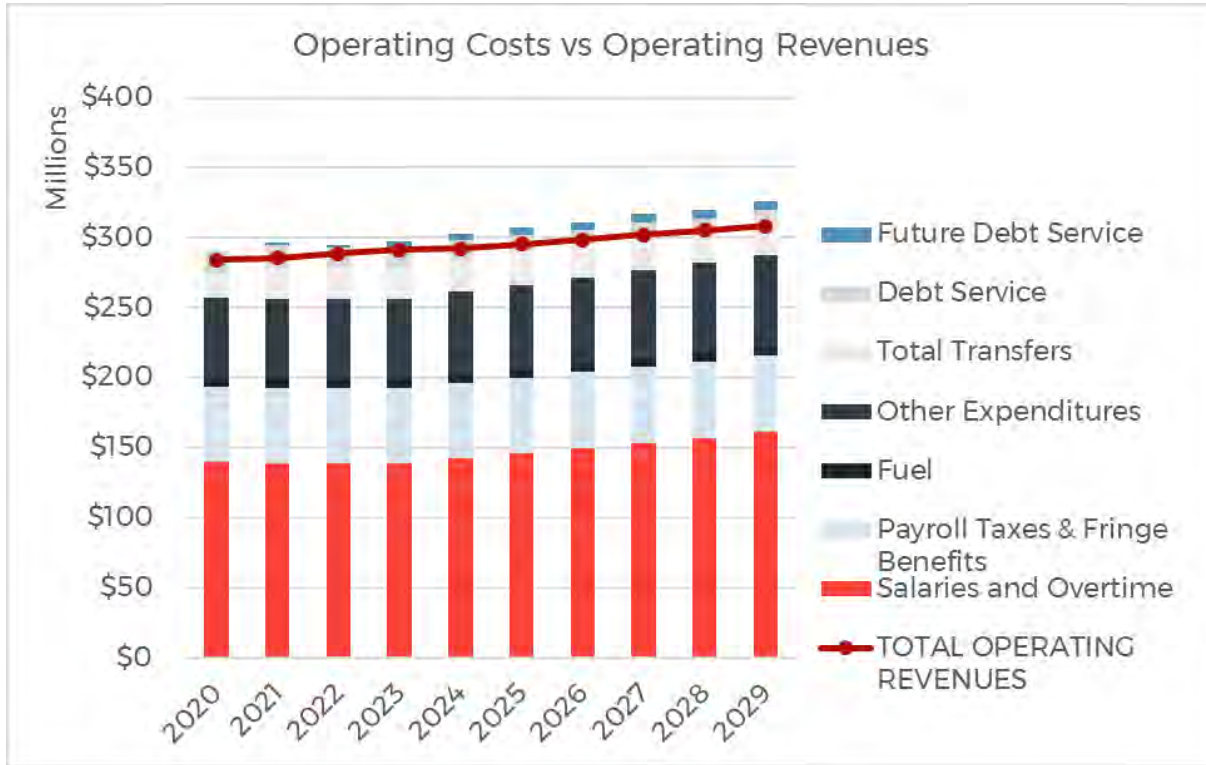
- Existing Revenue Sources Used to Fund Local Transit in Ohio
 - County Sales and Use Tax
 - City Income Tax (Cincinnati)
- Revenue Sources used to Fund Local Transit in Other States
 - Vehicle Tax (personal property tax)
 - Head Tax (# of Employees)
 - Tolls/Congestion Fees
 - Fee on TNCs (e.g. Uber)
 - Development Impact Fees
 - Local Fuel Tax
 - Lottery
- Existing Revenue Sources used in Cuyahoga County
 - County
 - Property Tax
 - Hotel/Bed Tax
 - Excise Tax on Alcohol, Cigarettes
 - Utility Service Tax (not currently levied, but authority exists)
 - Vehicle License/Registration Fee
 - Real Property Transfer Tax
 - City
 - Admissions Tax for Entertainment/ Convention Events
 - Metered/Street Parking Fee
 - Rental Car Tax
 - Parking Tax (levied on commercial parking receipts)
 - Casino Tax

Table 10-1: Evaluation Results Summary Table

Source	Revenue potential	Keeps pace with inflation	Equity	Nexus with beneficiaries	Stability/predictability	Administration	Political Feasibility
Sales & Use Tax	●	○	○	○	○	●	●
Property Tax	●	○	○	○	○	●	○
Commercial Property Tax	○	○	○	○	○	○	○
City Income Tax	●	○	○	○	○	○	○
Excise Tax on Alcohol, Cigarettes	○	●	○	○	●	○	○
Admission Tax for Entertainment Events	○	●	●	○	○	○	○
Metered/Street Parking Fees	○	●	○	●	○	○	○
Rental Car Tax	○	○	○	○	○	○	○
Utility Service Tax	○	○	○	○	●	○	○
Vehicle Tax (personal property)	○	○	○	○	●	○	○
Commercial Head Tax (# of employees)	○	○	○	○	○	○	○
Tolls/Congestion Fees	○	○	○	●	○	○	○
Hotel/Bed Tax	○	●	●	○	○	○	○
Parking Tax (on commercial receipts)	○	●	○	●	○	○	○
Fee on TNCs	○	○	○	○	○	○	○
Development Impact Fees	○	○	●	●	○	○	○
Vehicle License/Registration Fees	○	○	○	○	●	○	○
Casino Tax	○	○	○	○	○	○	○
Local Fuel Tax	○	○	○	○	○	○	○
Lottery Revenues	○	○	○	○	○	○	○
Real Property Transfer Tax	○	○	○	○	○	○	○

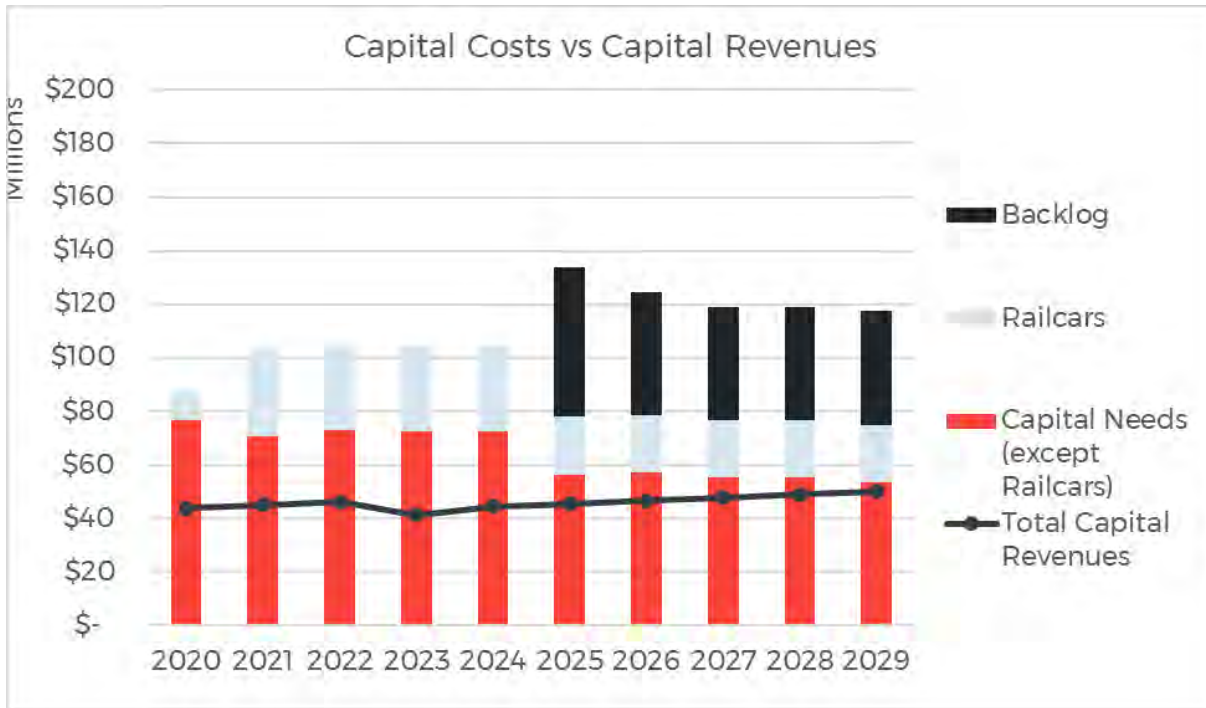
Source: WSP Research

Figure 10-2: Scenario 1: Baseline - Operating



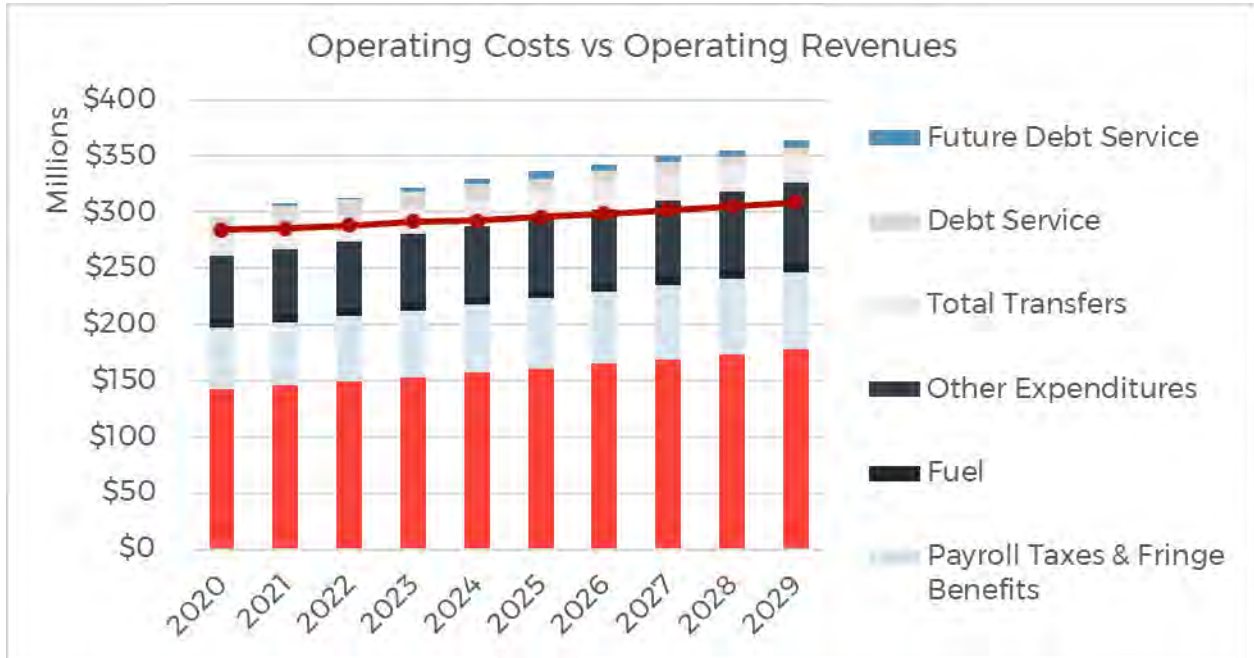
Source: RTA Estimates

Figure 10-3: Scenario 1: Baseline - Capital



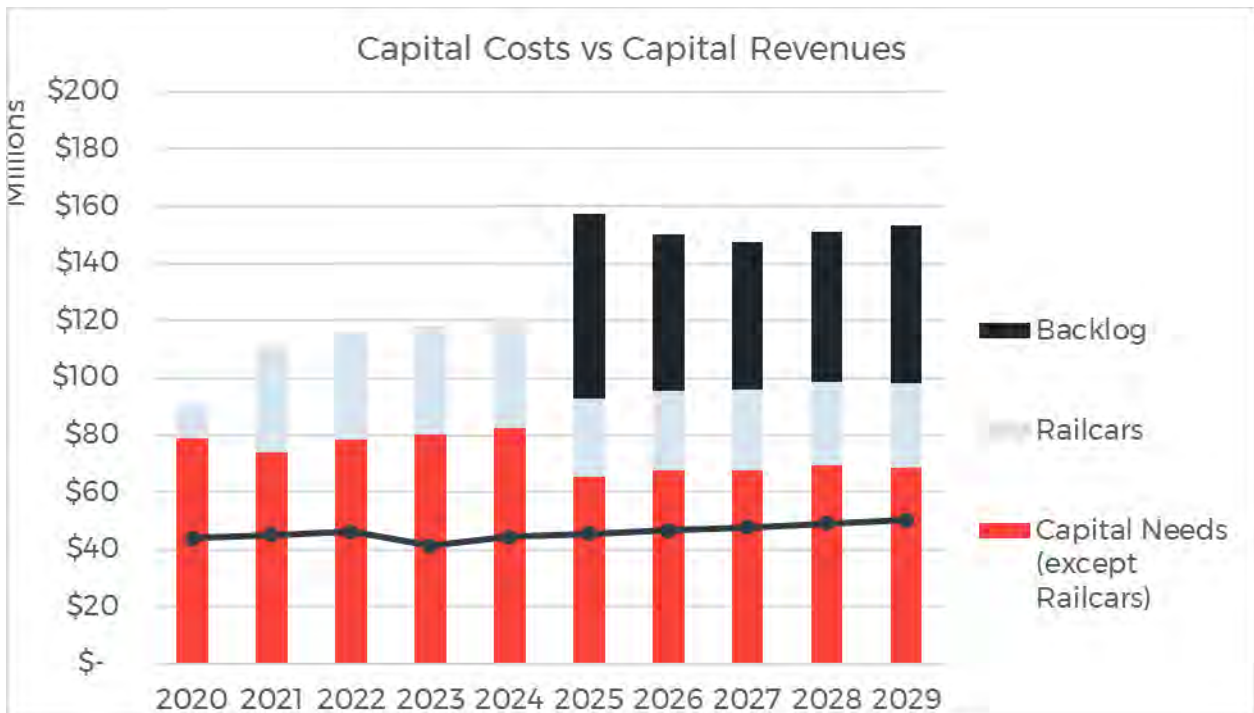
Source: RTA Estimates

Figure 10-4: Scenario 2: High Inflation - Operating



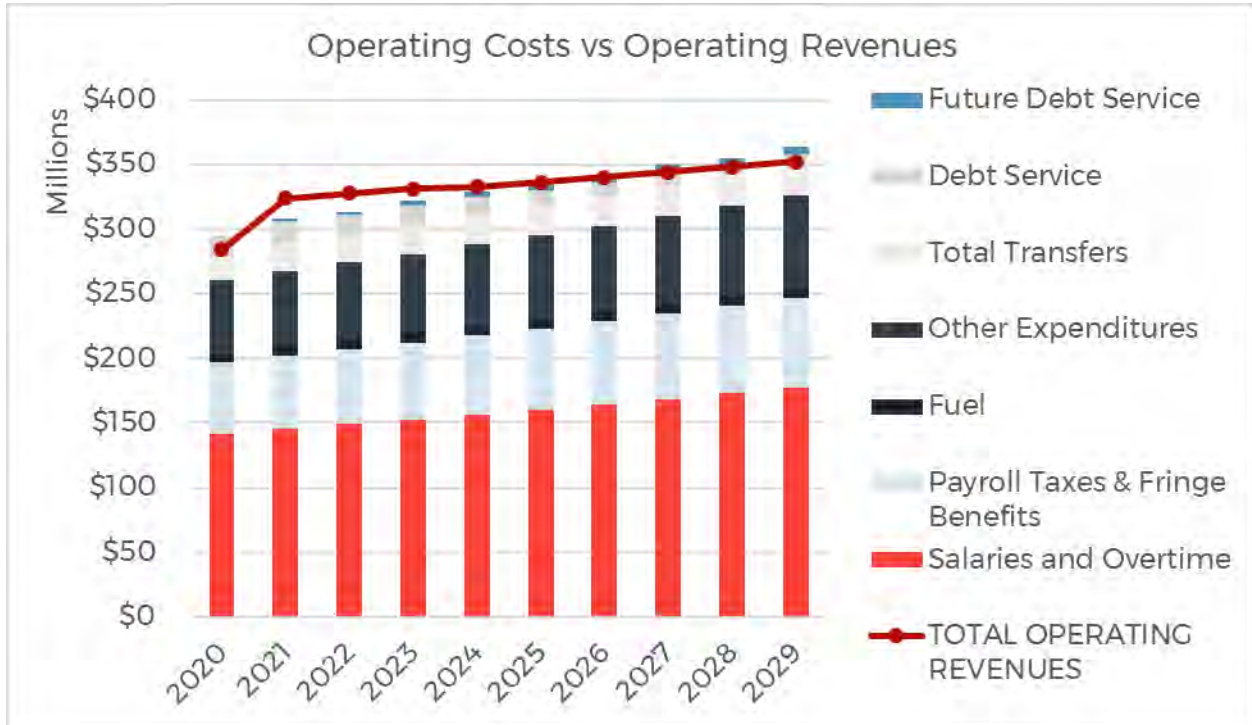
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-5: Scenario 2: High Inflation - Capital



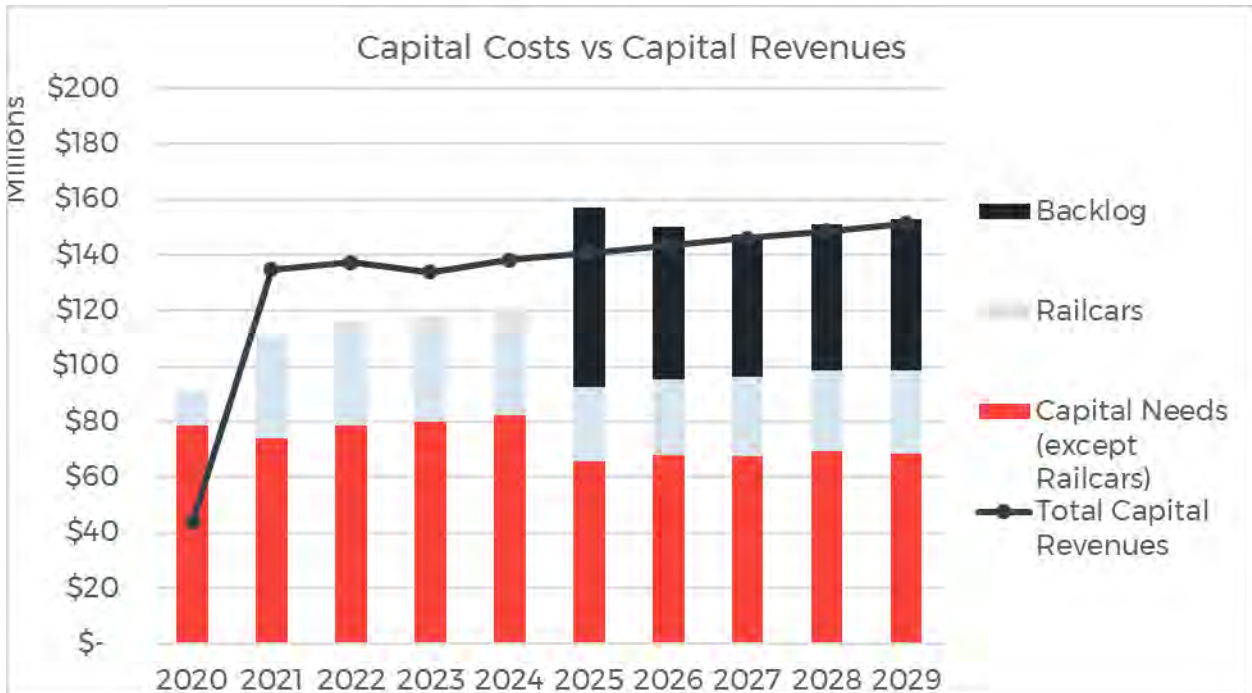
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-6: Scenario 3: High Inflation with Sales Tax - Operating



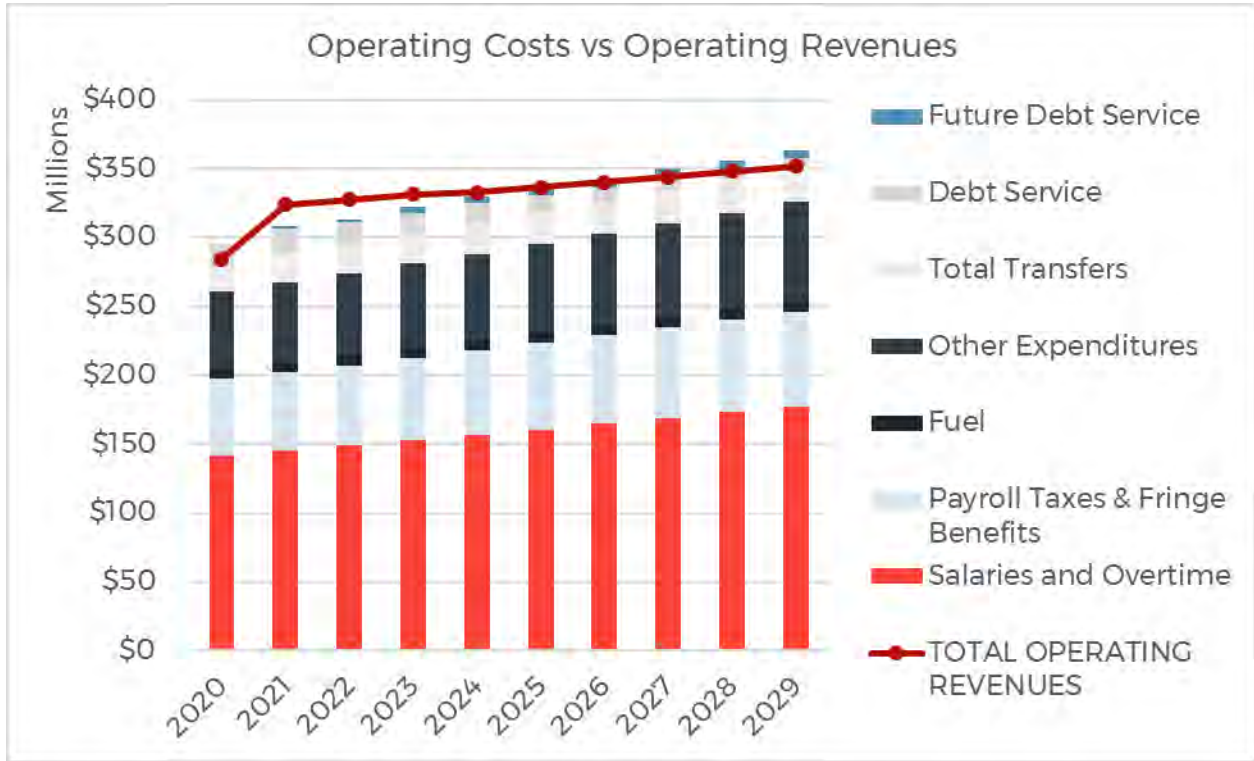
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-7: Scenario 3: High Inflation with Sales Tax - Capital



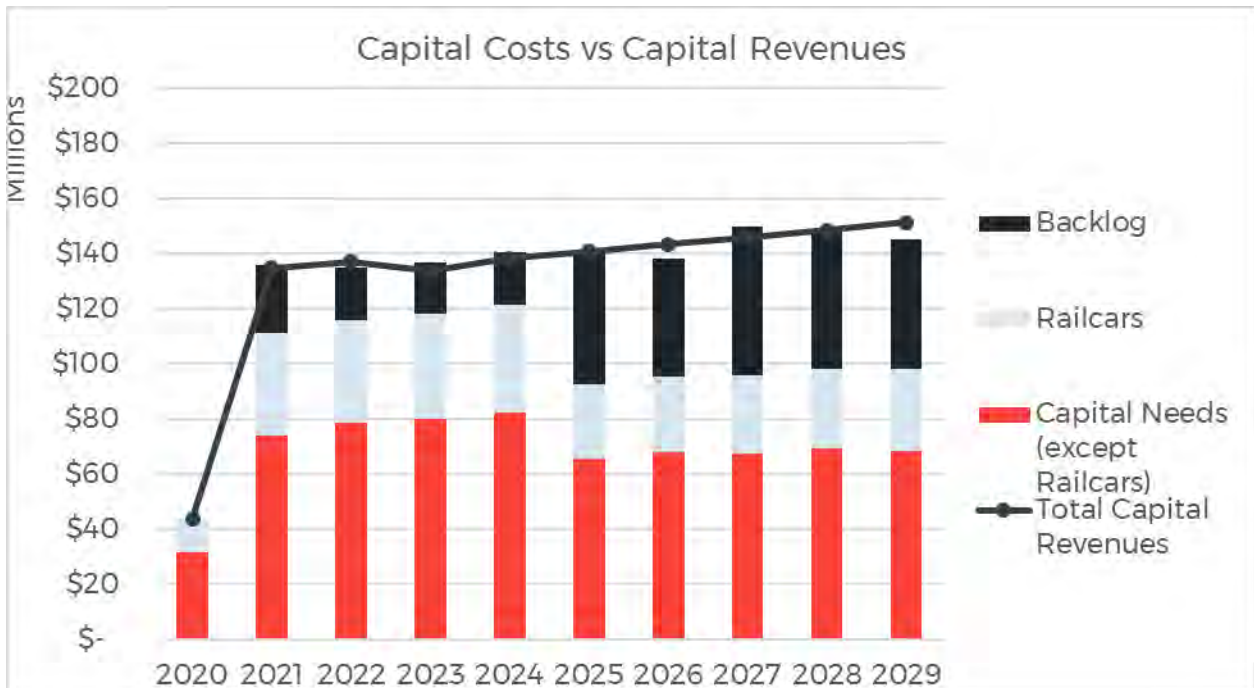
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-8: Scenario 4: High Inflation with Sales & Use Tax/Updated Backlog - Operating



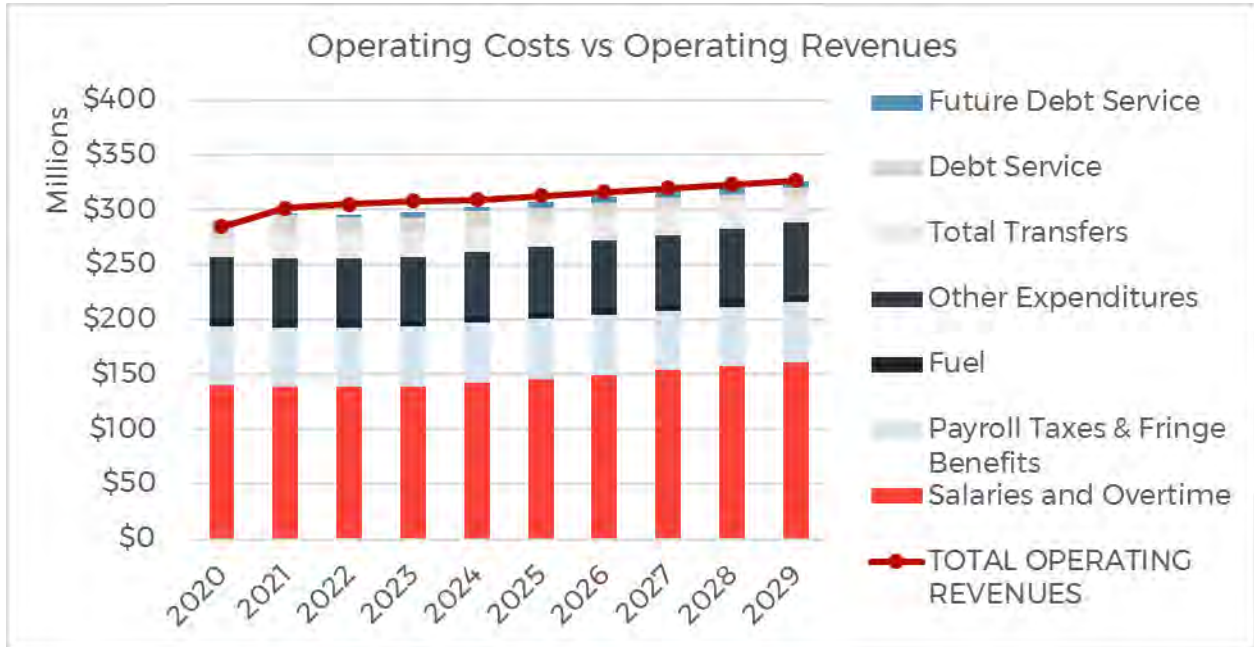
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-9: Scenario 4: High Inflation with Sales & Use Tax/Updated Backlog - Capital



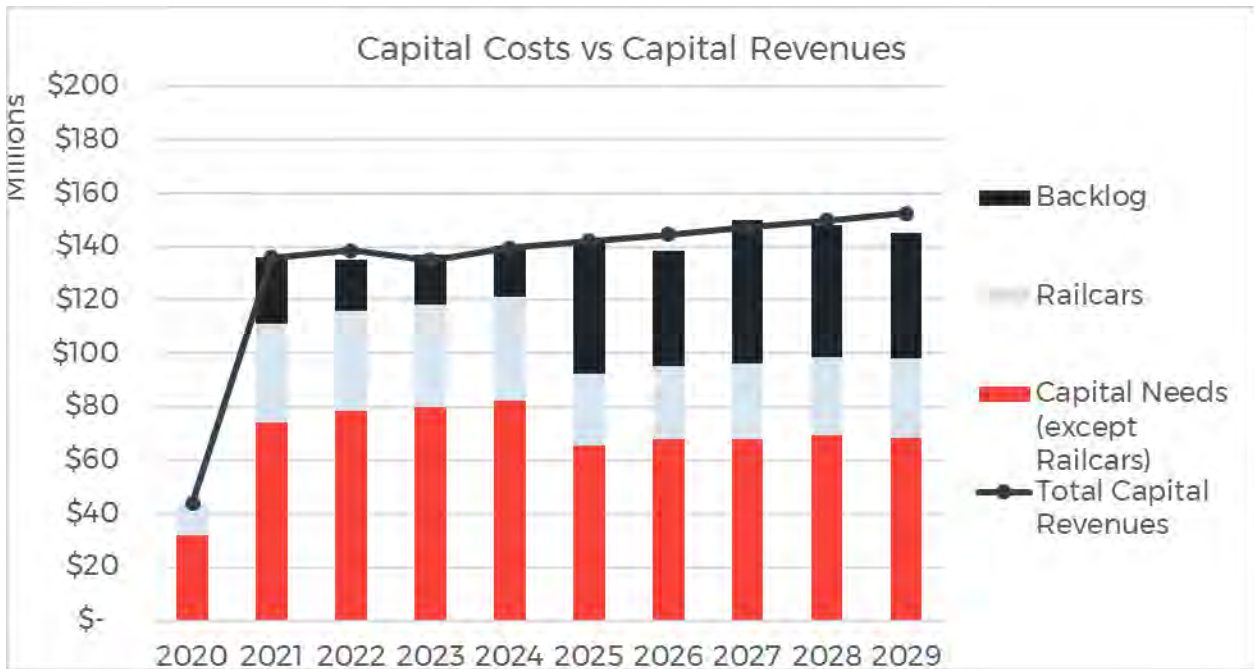
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-10: Scenario 5: Low Inflation with Sales Tax/Updated Backlog - Operating



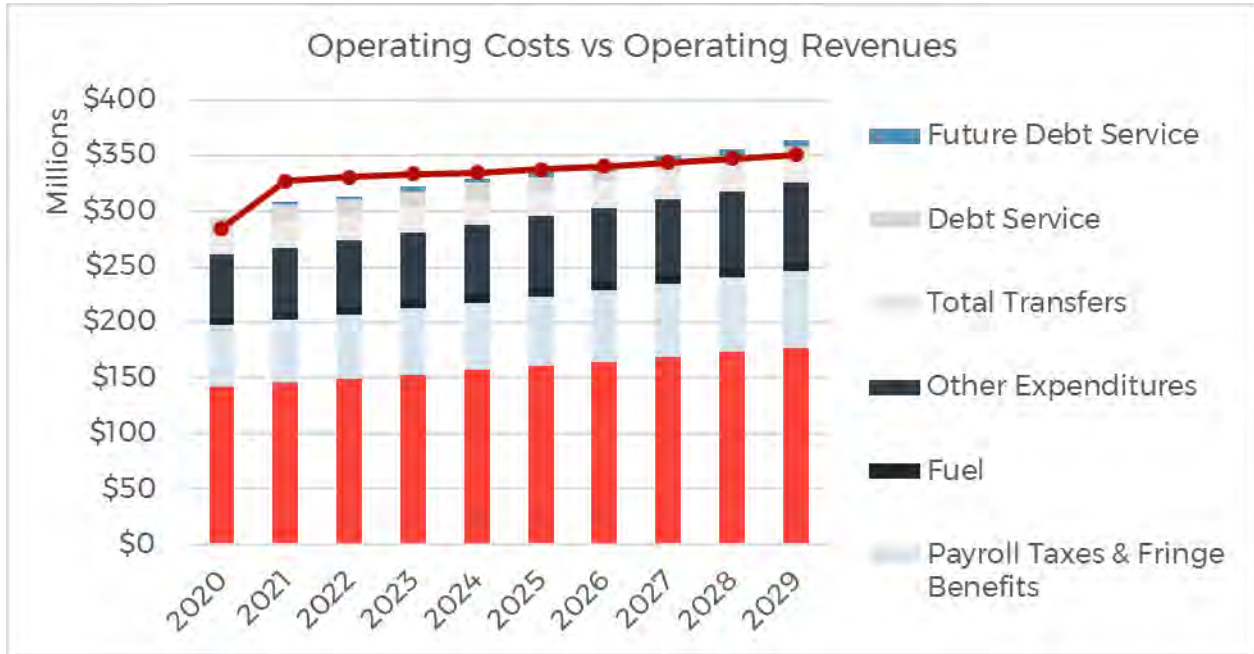
Source: RTA Estimates

Figure 10-11: Scenario 5: Low Inflation with Sales Tax/Updated Backlog - Capital



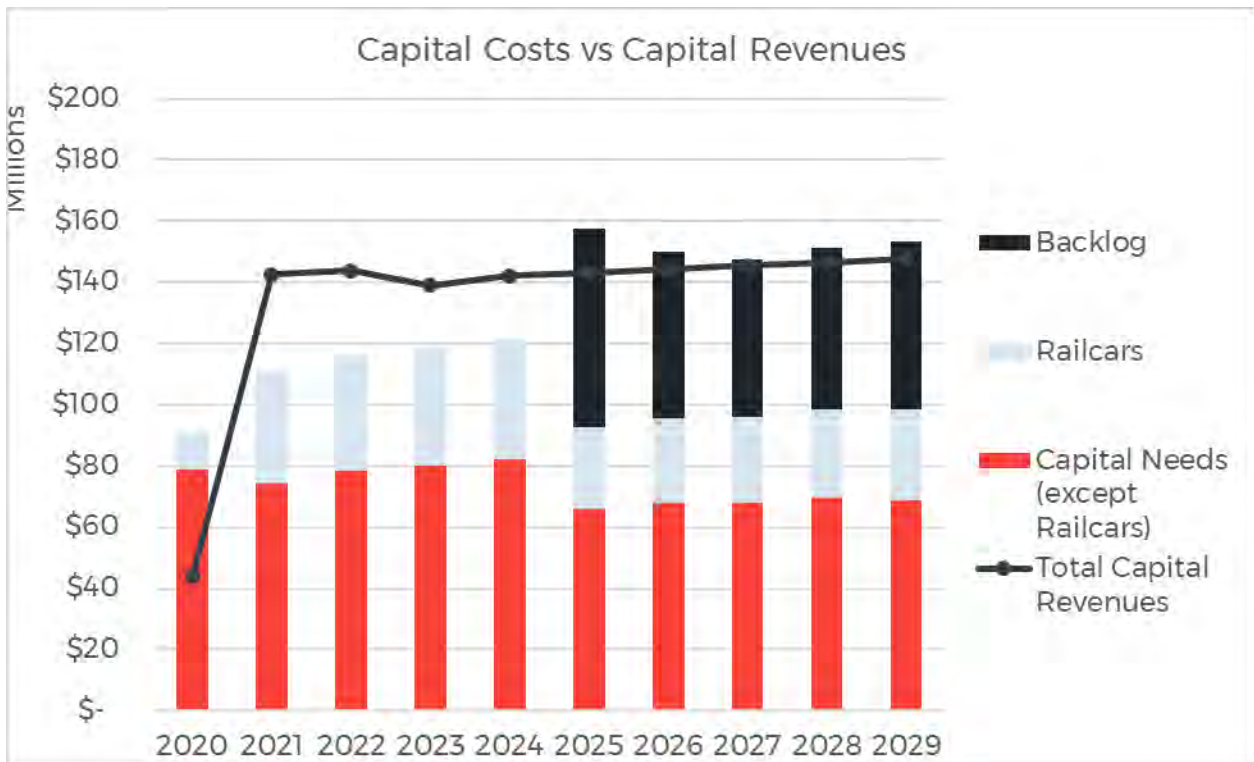
Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-12: Scenario 6: High Inflation with Property Tax: Operating



Source: RTA Estimates. Additional inflation and contingency factors were included.

Figure 10-13: Scenario 6: High Inflation with Property Tax - Capital



Source: RTA Estimates. Additional inflation and contingency factors were included.



Appendix H

Economic Impact Pillar Study



GCRTA Economic Impact and Contributions to Local Economy

Presentation to RTA External Stakeholders & Advocacy Committee

Dr. Iryna V. Lendel

Dr. Obed Pasha

Dro Sohrabian

Matthew B. Ellerbrock

March 5, 2019

CLEVELAND STATE UNIVERSITY
CENTER FOR ECONOMIC DEVELOPMENT



Levin.

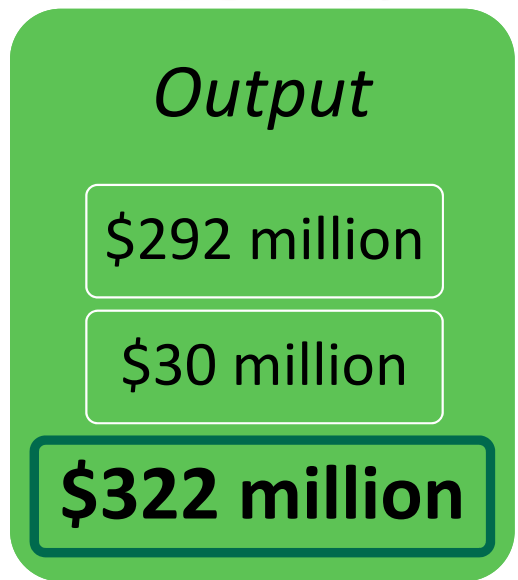
2017 ECONOMIC IMPACT OF GCRTA ON CUYAHOGA COUNTY



OPERATIONS

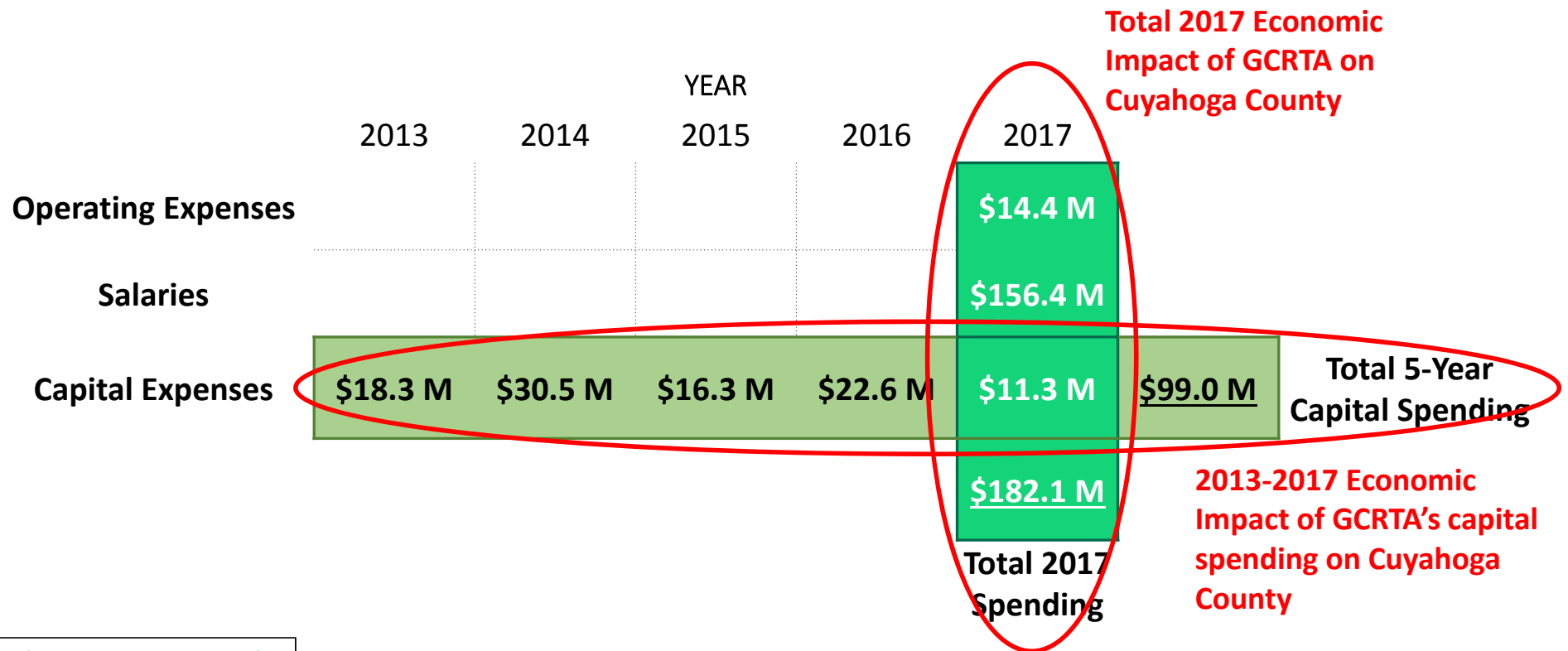
CAPITAL INVESTMENTS

TOTAL



All monetary values in 2019 millions of dollars

GCRTA SPENDING IN CUYAHOGA COUNTY



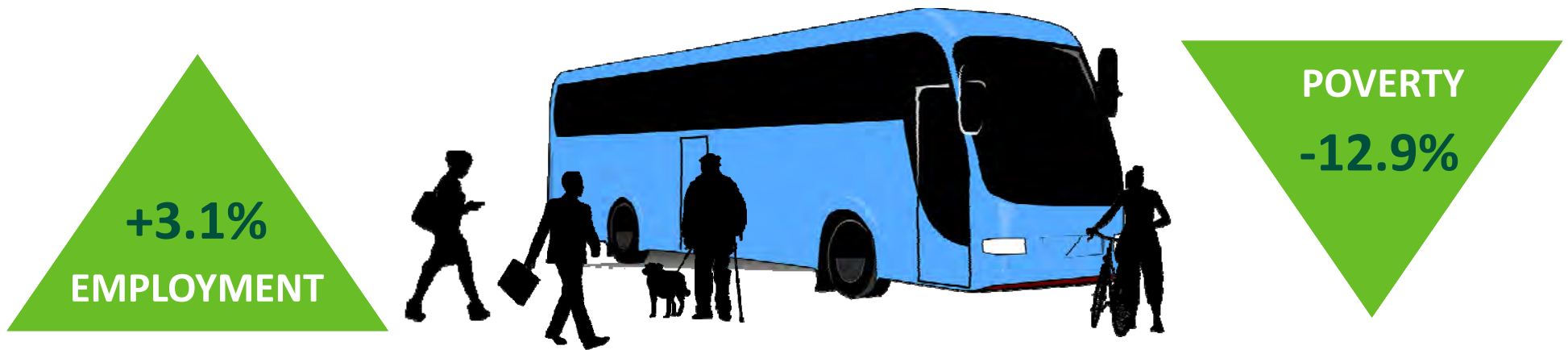
**Salaries include benefits*

TRANSIT IMPACT ON CUYAHOGA COUNTY PROPERTY VALUES



- Property values increase by **3.5%** within a decade for previously unserved 429 census tracts which received some transit service
- 2010 median-based estimate of property value for those 429 census tracts is **\$65.7** billion in 2019 dollars
- The derived property value increase attributed to transit access is **\$2.2** billion in 2019 dollars

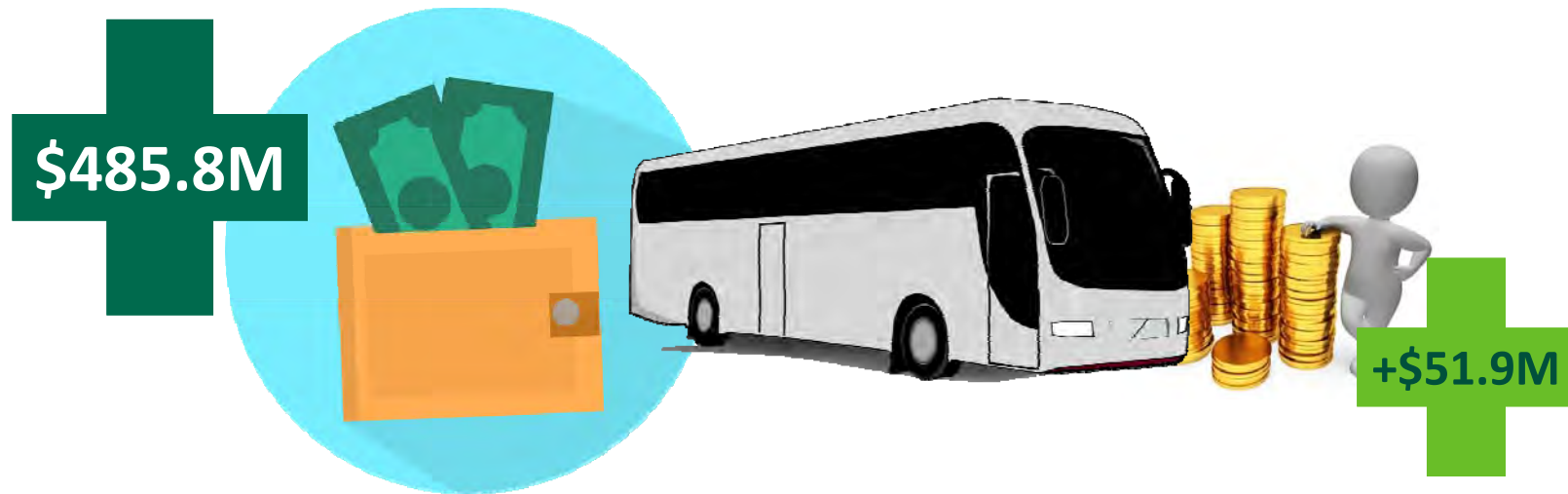
TRANSIT ACCESS, EMPLOYMENT AND IMPACT ON POVERTY



Within a decade, for previously unserved areas that gain transit access:

- Employment increased by **3.1%**
- Poverty decreased by **12.9%**

TRANSIT ACCESS AND CUSTOMERS



- An estimated **\$485.8 million** of annual earnings is brought home by those who depend on GCRTA transit services to get to work
- Direct annual savings for GCRTA passengers is **\$51.9 million**

TRANSIT AND STUDENTS



25% of GCRTA riders tend to be students

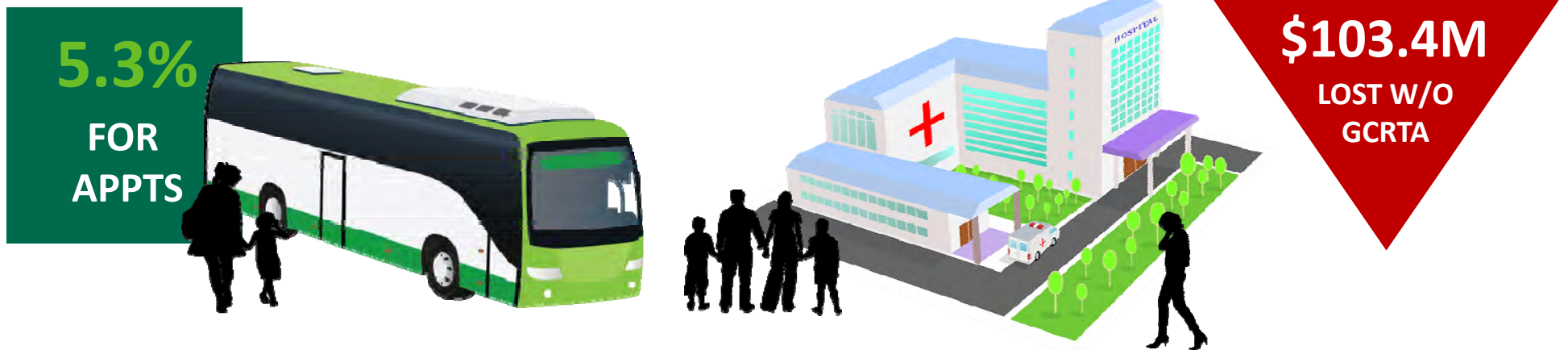
- 77% of those are dependent on transit services

If GCRTA services are suspended, impact would affect **16,872** college and K-12 students

The current saving for the CMSD due to the GCRTA services is about **\$28.7** million annually

- Approximately **6,000** 7th and 8th grade CMSD students ride GCRTA

TRANSIT AND HEALTH CARE



- About **5.3%** commuters use GCRTA to get to their medical appointments; **89%** of them depend on RTA
- Healthcare institutions in the regions **may lose \$103.4 M annually** when patients dependent on transit miss or cancel appointments

THIS PRESENTATION

- Economic impact of GCRTA on Cuyahoga County
 - Economic impact: (1) 2017 operation + operating/capital spending; (2) cumulative 5-year capital
 - IMPLAN modeling
 - Direct, indirect and induced economic impact
- Descriptive Analysis of GCRTA Wage Distribution
- Local Contributions to the Economy - Statistical Models
 - Historical System Maps processing
 - Service Level model
- Job Access and Spatial Mismatch Analysis
- Other Contributions

ECONOMIC IMPACT OF GCRTA: ASSUMPTIONS

- Economic impact is created by GCRTA operations and expenditures made within the region of impact – Cuyahoga County
- Despite the fact that GCRTA is funded by local money, the substitution effect is not applicable due to the nature of GCRTA services
- Economic impact is calculated based on a question how Cuyahoga County's economy would be affected if GCRTA suspends its services
- Total spending in 2017 in Cuyahoga -- \$182.1 million

MEASURES OF ECONOMIC IMPACT

- Employment impact measures the number of jobs created and supported in the region as a result of GCRTA operations and expenditures
- Labor income impact measures the additional labor earnings created in the region due to GCRTA operation and expenditures
- Value added impact measures the additional economic value created in the region as a result of GCRTA operations and expenditures. Value added is calculated as output less the value of intermediary goods (such as security services or gasoline)
- Output impact measures the additional value of all goods and services produced in the region as a result of GCRTA operations and expenditures
- Tax impact measures the additional federal, state, and local tax revenues collected in the region as a result of GCRTA operations and expenditures

TOTAL 2017 ECONOMIC IMPACT OF GCRTA ON CUYAHOGA COUNTY

All monetary values in 2019 millions of dollars

	Employment	Labor Income	Value Added	Output	State & Local Tax
Direct	1,800	\$156.4	\$169.5	\$182.1	\$7.0
Indirect	433	\$14.8	\$21.2	\$35.0	\$1.0
Induced	744	\$36.3	\$64.9	\$104.6	\$5.7
Total	2,977	\$207.5	\$255.6	\$321.7	\$13.8

- Spending of \$182.1 million for operation and purchases triggered increase of economic activity by \$321.7 million
- 60% (1,800) of the total impact is due to the direct RTA employment
- 25% (744) of total employment impact is created as an induced effect – spending done by GCRTA’s employees and the employees of its suppliers by buying goods and services in the region of impact
- Local spending at consumer-driven industries generated 41% (\$5.7 M) of the collected taxes

COMPONENTS OF TOTAL 2017 IMPACT

		Employment	Labor Income	Value Added	Output	State & Local Tax	
		Operations & Operational Expenditures		Direct	1,800	\$156.4	\$163.7
		Indirect	322	\$8.3	\$12.5	\$20.2	\$0.6
		Induced	715	\$34.9	\$62.4	\$100.6	\$5.5
		Total	2,837	\$199.6	\$238.6	\$291.5	\$13.1
+							
		Employment	Labor Income	Value Added	Output	State & Local Tax	
		2017 Capital Expenditures		Direct	0	\$0.0	\$5.8
		Indirect	111	\$6.5	\$8.7	\$14.8	\$0.4
		Induced	29	\$1.4	\$2.5	\$4.1	\$0.2
		Total	140	\$7.9	\$16.9	\$30.2	\$0.6
TOTAL		Total	2,977	\$207.5	\$255.6	\$321.7	\$13.8

Spending
\$2017

\$170.8 million

\$11.3 million

\$182.1 million

TOP INDUSTRIES AFFECTED BY TOTAL 2017 IMPACT: EMPLOYMENT

All monetary values in 2019 millions of dollars

Industry	Employment	Labor Income	Output
Transit and ground passenger transportation	2,039	\$159.9	\$176.0
Construction of other new nonresidential structures	82	\$4.6	\$10.2
Hospitals	48	\$4.3	\$8.5
Full-service restaurants	40	\$1.0	\$2.0
Limited-service restaurants	38	\$0.7	\$3.1
Real estate	32	\$0.5	\$8.3
Retail - Food and beverage stores	22	\$0.6	\$1.4
Services to buildings	21	\$0.5	\$1.0
Individual and family services	21	\$0.7	\$0.8
Home health care services	21	\$0.7	\$0.9

- There are two types of industries affected by operations and spending of GCRTA:
 - GCRTA-driven -- those in transportation, construction and related professional, trade, and financial services (supply chain industries)
 - Population-driven in consumer goods and services industries: healthcare, retail, real estate, and other population services

TOTAL IMPACT OF GCRTA CAPITAL EXPENDITURES ON CUYAHOGA COUNTY, 2013-2017

All monetary values in 2019 millions of dollars

	Employment	Labor Income	Value Added	Output	State & Local Tax
2013	235	\$13.6	\$19.2	\$32.3	\$1.1
2014	382	\$21.9	\$31.2	\$53.2	\$1.8
2015	201	\$11.5	\$16.3	\$27.8	\$0.9
2016	278	\$15.9	\$22.6	\$37.9	\$1.3
2017	140	\$7.9	\$11.2	\$18.9	\$0.6
Average	247				
Total		\$70.9	\$100.5	\$170.1	\$5.8

<i>Spending, \$2017</i>
<i>\$18.2</i>
<i>\$30.5</i>
<i>\$16.3</i>
<i>\$22.5</i>
<i>\$11.3</i>
<i>\$19.8</i>
\$98.8

GCRTA WAGE DISTRIBUTION

- Out of \$137 million spent on salaries by GCRTA, \$112 million are paid to workers residing in Cuyahoga County (82%)
- 65% of salaries paid in Cuyahoga County are distributed to workers living in top 10 municipalities in Cuyahoga
- 31.5% of locally paid salaries are paid to workers who live in Cleveland

Derived from descriptive analysis

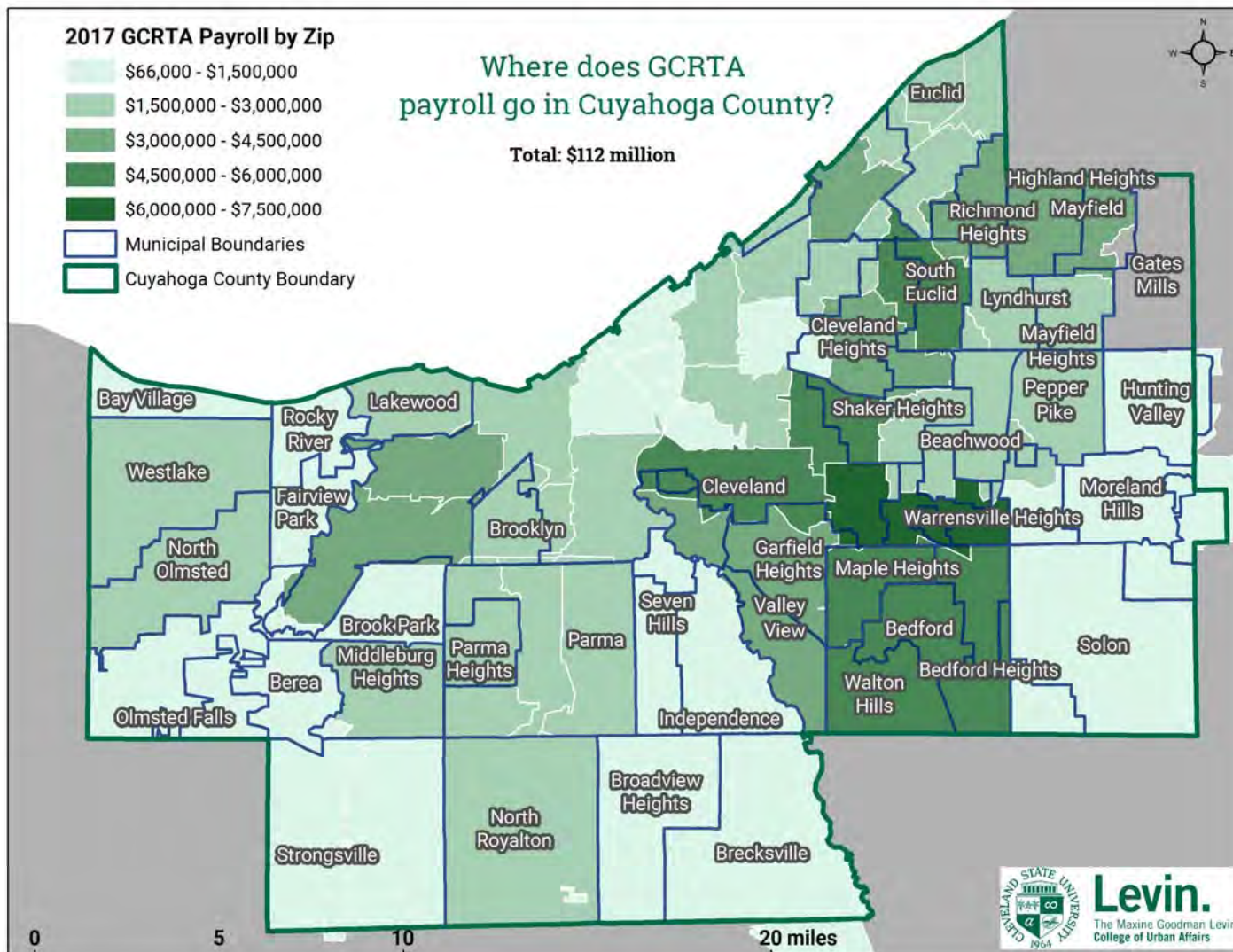
GCRTA SALARY DISTRIBUTION IN CUYAHOGA COUNTY

Top 10 Municipalities

- **\$137 million GCRTA salaries** in 2017
- **\$112 million salaries** in Cuyahoga County
- 82% salaries are paid in the county

MUNICIPALITY	AREA-BASED PROPORTIONAL SALARY
Cleveland	\$35,278,333
Euclid	\$7,874,021
Maple Heights	\$5,100,236
Parma	\$4,610,463
Cleveland Heights	\$4,221,016
Walton Hills	\$3,771,076
Shaker Heights	\$3,741,882
South Euclid	\$3,149,444
Warrensville Heights	\$2,763,235
North Olmsted	\$2,370,678

All monetary values in 2017 millions of dollars



CONTRIBUTIONS TO LOCAL ECONOMY

Within a decade, for previously un-served areas that gain transit access:

- Employment increases by 3.1%
- Poverty decreases by 12.9%
- Property values increase by 3.5% (\$2.3 billion)

Derived from statistical modeling

CONTRIBUTIONS TO LOCAL ECONOMY

- Methods
 - Statistical models were run on 462 Cuyahoga County census tracts from 1970 to 2010
 - Socioeconomic data from LTDB (Longitudinal Tract Data Base)
 - Uses measure of “access to transit”
- Investigate effects on:
 - Poverty rates and employment
 - Part-time and minimum wage workers along transit
 - Housing and property values
 - Access to jobs

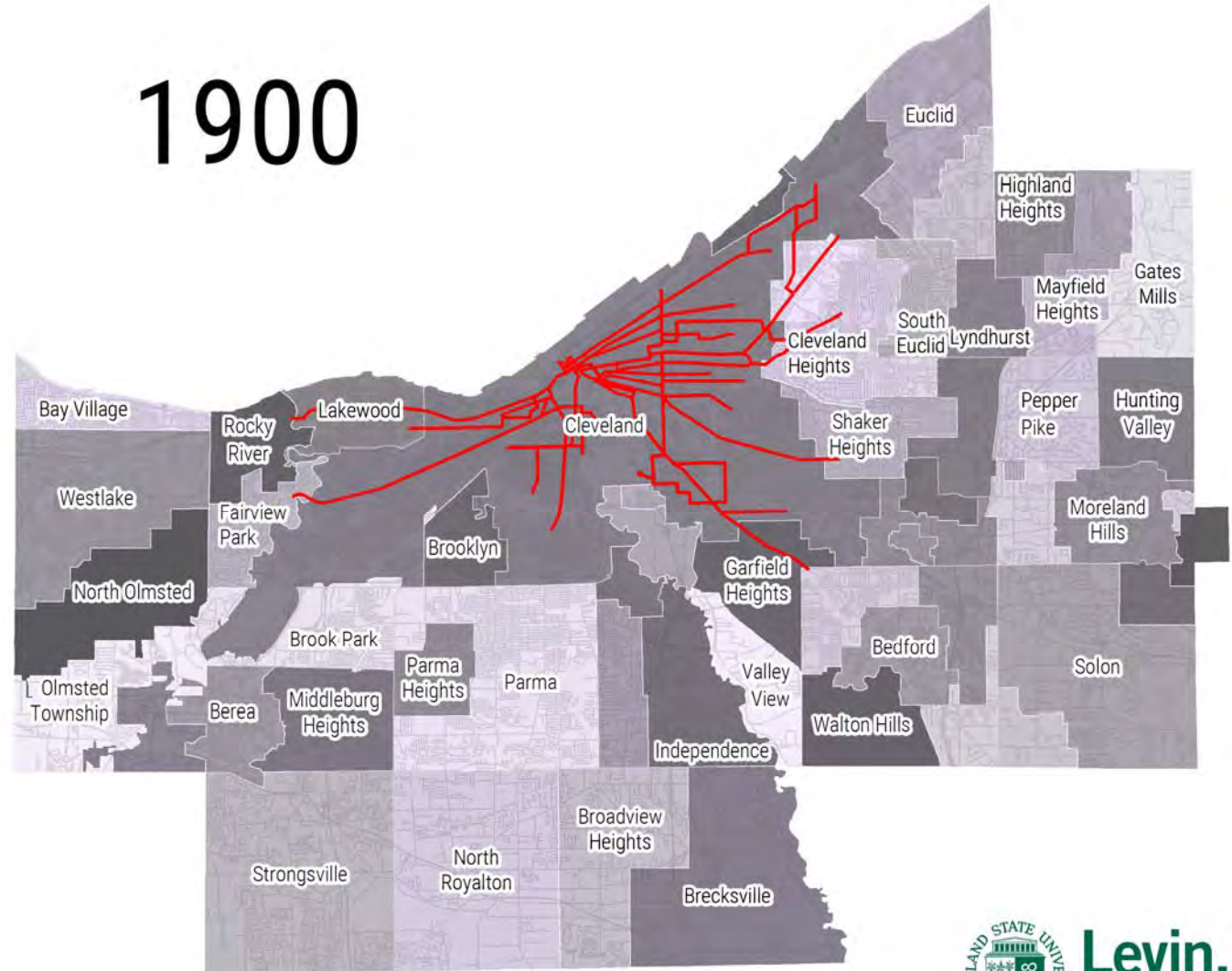
LOCAL CONTRIBUTIONS: ACCESS TO TRANSIT

- Historical system maps
- Manually convert to shapefiles of networks
- Can say if census tract had “access to transit”
- “Access to transit” = route running through the tract
- No digital stop or frequency info before 2009 makes detailed models impossible



TRANSIT NETWORK CHANGE OVER THE YEARS

1900



Center for Economic Development



Levin.
The Maxine Goodman Levin
College of Urban Affairs

IMPACT OF GCRTA SERVICES ON DYNAMICS OF EMPLOYMENT: LONG TERM

Table A5: Dependent variable – Employment (long-term impact)

	(1)	(2)	(3)	(4)	(5)
TR_ACCESS		0.330*** (0.052)	0.043*** (0.013)	0.028*** (0.010)	0.031*** (0.011)
POPDENS	0.777*** (0.029)		1.041*** (0.019)	0.782*** (0.029)	0.775*** (0.029)
H30OLD	0.014** (0.007)		0.0320*** (0.008)	0.011* (0.006)	0.011* (0.007)
RENTVAL	0.106*** (0.035)		0.128*** (0.047)	0.103*** (0.035)	0.103*** (0.035)
MANUF	0.241*** (0.023)			0.245*** (0.023)	0.240*** (0.023)
HH_BLACK	0.005* (0.003)				0.005* (0.003)
Constant	-1.495*** (0.239)	6.975*** (0.049)	-2.534*** (0.281)	-1.549*** (0.239)	-1.466*** (0.237)
Census Tract FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,143	2,214	2,211	2,208	2,143
R-squared (within)	0.873	0.127	0.835	0.875	0.873
No. of Census Tracts	443	443	443	443	443

Employment increases by 3.1% within a decade for previously un-served areas that gain transit access

IMPACT OF GCRTA SERVICES ON POVERTY: LONG TERM

Table A8: Dependent variable – Poverty (long-term impact)

	(1)	(2)	(3)	(4)	(5)
TR_ACCESS		-0.162*** (0.046)	-0.124*** (0.046)	-0.111** (0.044)	-0.129*** (0.043)
POPDENS	0.023 (0.095)		-0.087 (0.070)	0.122 (0.096)	0.031 (0.095)
H30OLD	0.014 (0.024)		-0.001 (0.024)	0.012 (0.024)	0.023 (0.024)
RENTVAL	-0.437*** (0.113)		-0.454*** (0.112)	-0.451*** (0.116)	-0.423*** (0.114)
MANUF	-0.214*** (0.051)			-0.196*** (0.051)	-0.207*** (0.050)
HH_BLACK	0.072*** (0.009)				0.072*** (0.009)
Constant	4.657*** (0.763)	1.913*** (0.043)	4.772*** (0.704)	4.063*** (0.792)	4.537*** (0.780)
Census Tract FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,143	2,215	2,211	2,208	2,143
R-squared (within)	0.381	0.320	0.342	0.356	0.384
No. of Census Tracts	443	443	443	443	443

Poverty decreases by 12.9% within a decade for previously un-served areas that gain transit access

IMPACT OF GCRTA SERVICES ON PROPERTY VALUES: LONG TERM

Table A10 : Dependent variable – Property Value (long-term)					
	(1)	(2)	(3)	(4)	(5)
TR_ACCESS		0.040* (0.023)	0.042** (0.020)	0.037* (0.020)	0.035* (0.021)
POPDENS	0.069* (0.035)		0.110*** (0.027)	0.040 (0.033)	0.066* (0.035)
H30OLD	-0.067*** (0.013)		-0.059*** (0.012)	-0.066*** (0.012)	-0.070*** (0.012)
RENTVAL	0.237*** (0.059)		0.253*** (0.061)	0.236*** (0.058)	0.232*** (0.059)
MANUF	0.076*** (0.018)			0.072*** (0.018)	0.075*** (0.018)
HH_BLACK	-0.018*** (0.004)				-0.018*** (0.004)
Constant	8.222*** (0.345)	9.918*** (0.022)	8.116*** (0.327)	8.412*** (0.326)	8.262*** (0.344)
Census Tract FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	2,135	2,205	2,203	2,200	2,135
R-squared (within)	0.932	0.926	0.933	0.935	0.932
No. of Census Tracts	443	443	443	443	443

- Property values increase by 3.5% within a decade for previously un-served tracts that gain transit access
- 2010 median-based estimate of property value for those 429 Census Tracts is \$65.7 billion in 2019 dollars
- The derived property value increase attributed to transit access is \$2.2 billion in 2019 dollars

JOB ACCESS AND SPATIAL MISMATCH

- GCRTA services reduce effects of spatial mismatch between people and jobs
- The quicker GCRTA services are, the more likely individuals from high-poverty areas are to find work at low-skill jobs
- GCRTA may be facilitating workforce participation in the economy

Derived from descriptive analysis

SPATIAL MISMATCH INVESTIGATION

Spatial Mismatch in Cuyahoga County

Top 20 Census Tracts: Most Entry-Level Jobs (< \$15k annual), 2015

- 1,355 - 3,299 jobs
- 3,300 - 5,243 jobs
- 5,244 - 7,187 jobs
- 7,188 - 9,131 jobs
- 9,132 - 11,075 jobs

56,822 entry-level jobs

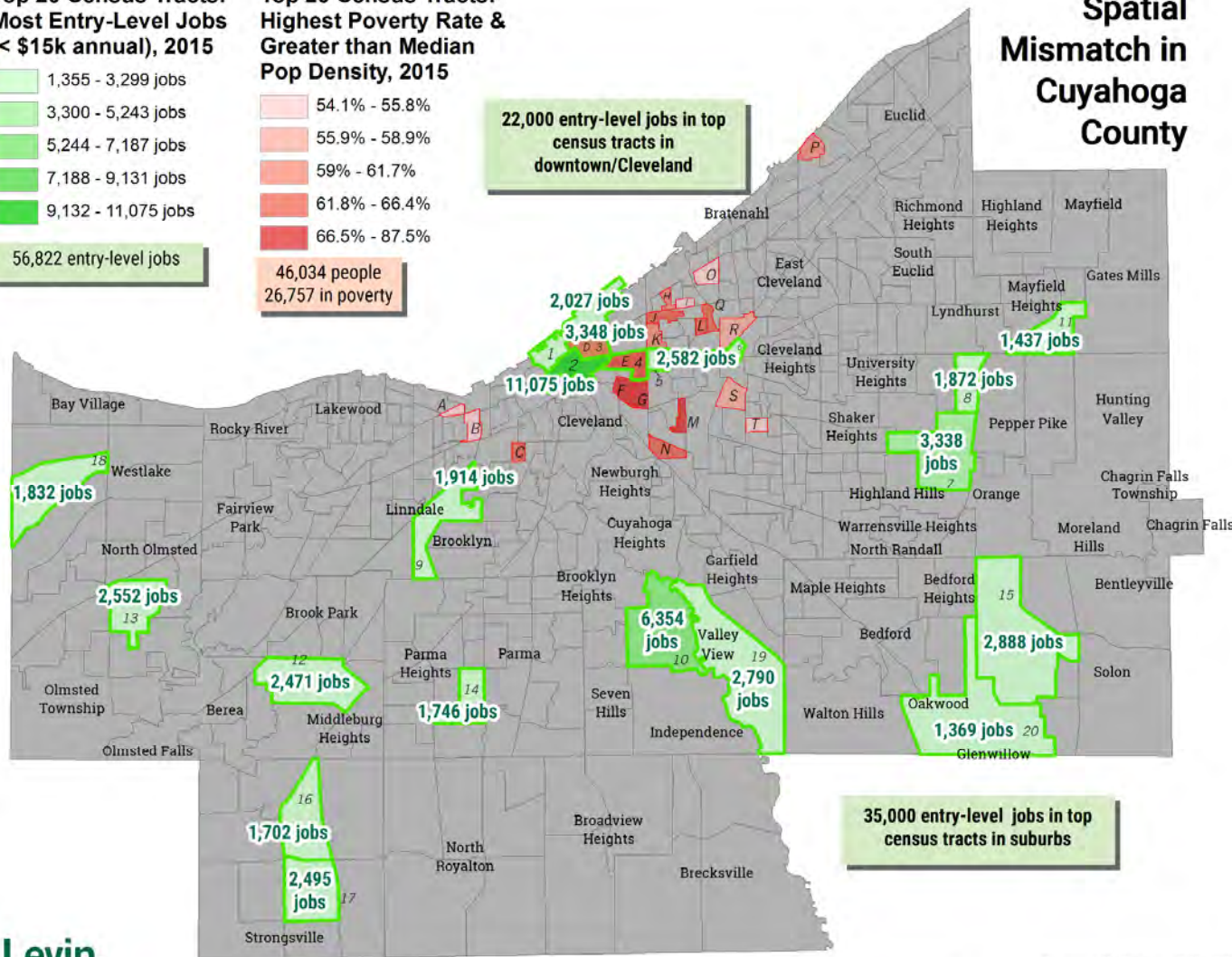
Top 20 Census Tracts: Highest Poverty Rate & Greater than Median Pop Density, 2015

- 54.1% - 55.8%
- 55.9% - 58.9%
- 59% - 61.7%
- 61.8% - 66.4%
- 66.5% - 87.5%

**46,034 people
26,757 in poverty**

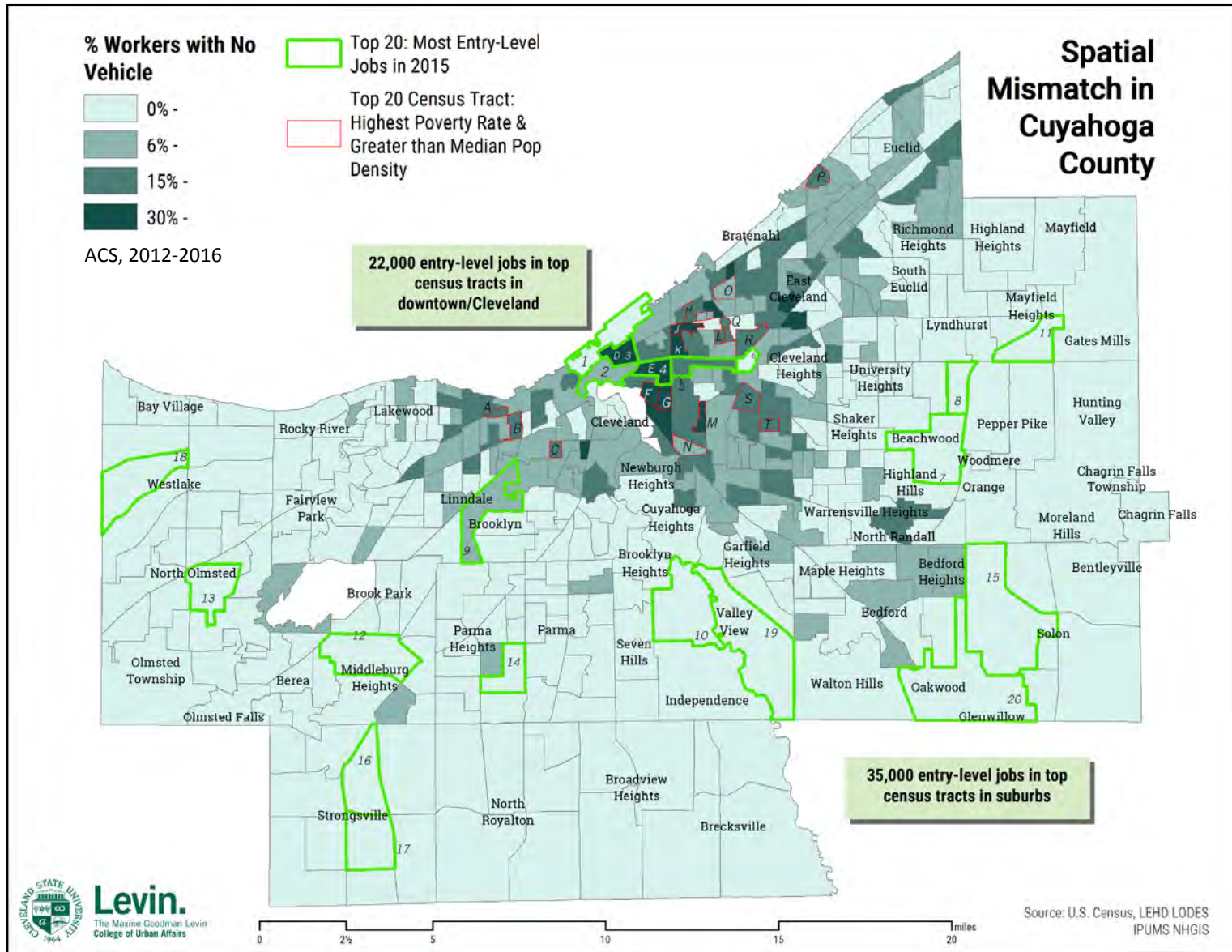
22,000 entry-level jobs in top census tracts in downtown/Cleveland

35,000 entry-level jobs in top census tracts in suburbs



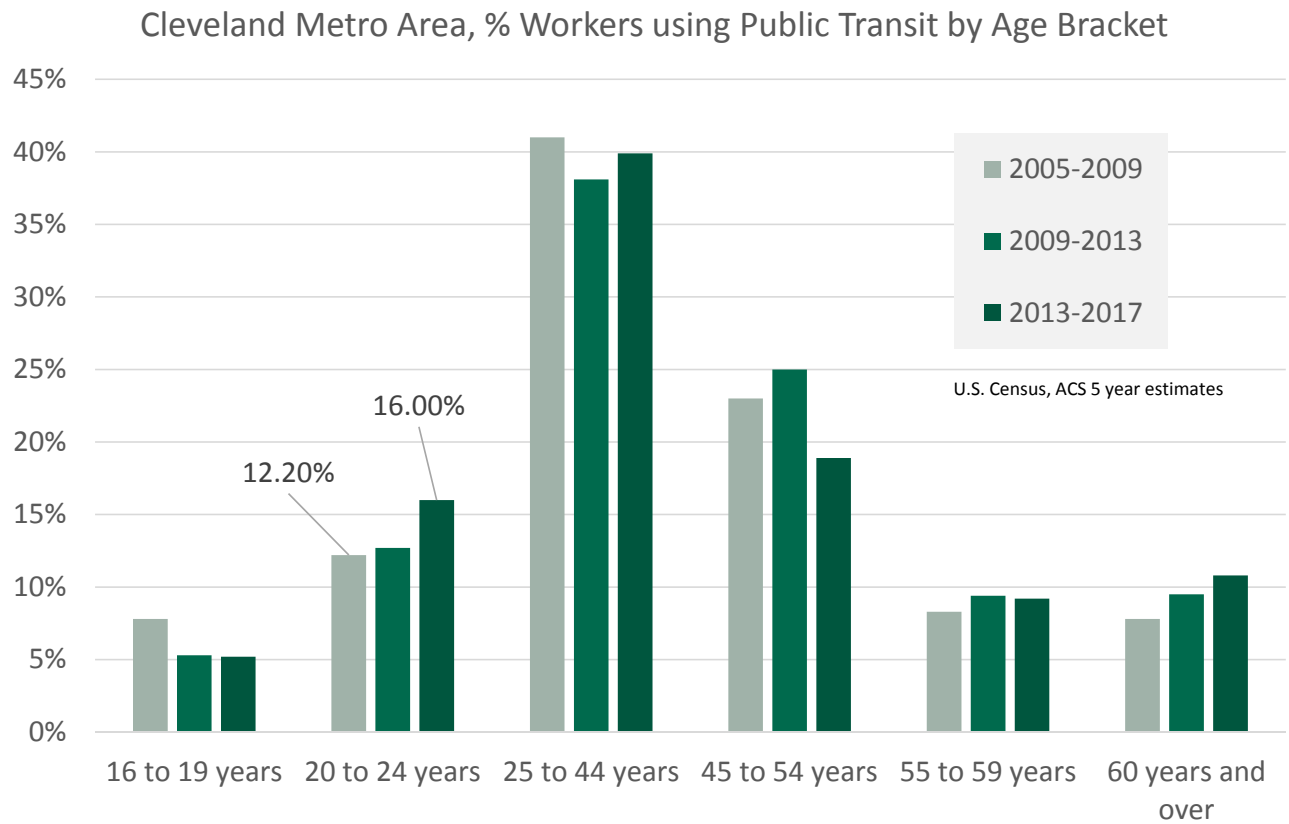
SPATIAL MISMATCH INVESTIGATION

DISTRIBUTION OF AREAS WITH LOW VEHICLE OWNERSHIP



JOB ACCESS: EVOLVING COMMUTING TREND

- Number of total transit commuters is falling
- The percent of riders composed of younger millennials (20-24) saw a noticeable uptick
- It signals preferences of future workers



OTHER LOCAL CONTRIBUTIONS

- Based on 2013 On-Board GCRTA Surveys (31,753 observations)
- Estimates in this section are speculative

OTHER CONTRIBUTIONS: MAIN FINDINGS

- GCRTA helps **34,202** people (14%) in Cuyahoga Country get to their jobs daily; they bring home about **\$485.8 million** in wages and salaries
- Over **5% (1,700 people)** commuters use GCRTA to get to their medical appointments
- GCRTA commuters save **\$51.9 M** on transportation cost
- **25%** of GCRTA riders (about 17,000 people) tend to be students
- The current saving for the CMSD is about **\$28.7 million** annually

Derived from direct calculations

OTHER CONTRIBUTIONS: DATA SOURCES

- There were 31,753 observations in 2013 GCRTA On-Board Transit Survey
- Based on 2013 National Transit Database (NTD), there were **67,406** estimated daily riders, assuming all roundtrips
- The number of observations in survey is statistically significant. Ratios can be applied to the estimated daily riders figure

OTHER CONTRIBUTIONS: WORKFORCE AND TRANSIT

- Half of GCRTA riders (50.7%) are headed to a workplace
- GCRTA helps **34,202** people in Cuyahoga County get to their jobs every day
 - Of these, **24,721** are dependent of GCRTA services
 - Of these, **14,611** are highly dependent on GCRTA services to commute
- Such individuals will be at a risk of losing their current jobs if GCRTA ceases to exist
- An estimated **\$485.8 million** of annual earnings is brought home by those who depend on GCRTA transit services to get to work

OTHER CONTRIBUTIONS: HEALTHCARE SERVICES

- About **5.3%** commuters use GCRTA to get to their medical appointments
- Healthcare institutions in the regions **may lose \$103.4 M annually** when patients dependent on transit miss or cancel appointments

OTHER CONTRIBUTIONS: COST SAVINGS FOR COMMUTERS

- Commuters collectively paid **\$45.4 M** (2017) in fares to GCRTA
- If GCRTA passengers traveled those miles by car, it would have cost them **\$97.4 M**
- Direct annual savings for RTA passengers is **\$51.9 M**

OTHER CONTRIBUTIONS: COST SAVINGS TO CMSD

- **25%** of GCRTA riders tend to be students and **77%** of them are dependent on transit services
- The current saving for the school district due to the GCRTA services is about **\$28.7 million annually**
- If there were no contract between CMSD and GCRTA, CMSD would probably modify its policy to only transport to the state medium requirements, which is of 7th and 8th graders, of which there are approximately 6,000 students



SUMMARY: ECONOMIC IMPACT

- In 2017, GCRTA employed 1,800 from Cuyahoga County (82% of their total employment)
- In addition, \$156.4 million was spent in 2017 on local salaries and benefits
- In 2017, it spent \$25.7 million locally from capital and operational budgets (not including salaries). Over the last five years, on average, GCRTA spends \$34 million locally on operating and capital expenses



SUMMARY: ECONOMIC IMPACT

- In 2017, GCRTA's operation and spending created economic impact in Cuyahoga County equivalent to:
 - Almost 3,000 jobs
 - \$208 million in labor income
 - \$256 million in value added
 - \$322 million in output
 - \$14 million in state and local taxes



SUMMARY: ECONOMIC CONTRIBUTIONS

- GCRTA service access is associated with a 3.1% increase in employment in the long-term
- GCRTA service access is associated with a 12.9% decrease in neighborhood poverty in the long-term
- GCRTA service access is associated with a 3.5% increase in property values in the long-term, totaling \$2.2 billion
- GCRTA facilitates connecting low-income population to entry-level jobs



SUMMARY: OTHER CONTRIBUTIONS

- Commuters spend 53% less in transportation costs by using GCRTA transit verses driving, saving \$51.9 million
- GCRTA helps 34,202 people in Cuyahoga Country get to their jobs every day; 24,721 commuters depend on GCRTA to get work
- 3,599 individuals are using GCRTA for medical purposes daily; 3,219 of them would be at risk of canceling/missing their medical appointment in the absence of GCRTA
- CMSD saves nearly \$28.7 million annually with GCRTA services
- If GCRTA services are suspended, the mobility of 16,872 students will be adversely affected in Cuyahoga County