METRO Futures Task Force

More than half of all trips taken on Metro are work-related.

Metro Futures Task Force Final Report

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March 14, 2016

Chairman Jason Dunn
SORTA Executive Committee
602 Main St., Suite 1100
Cincinnati, OH 45202

Dear Chairman Dunn and the SORTA Board Executive Committee:

On behalf of the members of the Metro Futures Task Force ("Task Force"), it is our pleasure to provide this comprehensive report of our work over the past six months. In particular, we are pleased to share six "Key Learnings" and six "Recommendations" for further consideration by the Southwest Ohio Regional Transit Authority (SORTA) Executive Committee and Board of Trustees.

We hope that our input helps inform your decisions about the future of public transportation in our region. We thank you for this opportunity to be of service to our community and those who choose or require Metro's services to get to and from work, healthcare services, education and more.

The Task Force met six times and heard from more than a dozen experts about public transportation, generally and Metro, specifically. We hosted 12 community listening sessions and carefully considered the results of more than 1,200 surveys. The Task Force took its work on your behalf very seriously. As Co-Chairs, we were impressed with the personal engagement and time commitment of Task Force members. In addition, the input provided by your CEO, Dwight Ferrell, and your planning and communications staffs was very helpful. We were impressed by the professionalism of your team and know you share our confidence in their strategic and operational capabilities.

We are pleased to provide the following "Key Learnings" and "Recommendations" with the understanding that more context for each is provided in the Learnings and Recommendations section included in Tab 6 of this report:

METRO
FUTURES TASK FORCE

Key Learnings

1. SORTA's current business model is not sustainable at current funding levels.
2. SORTA is, on a comparative basis with Cincinnati's peer cities, an efficiently run system.
3. SORTA understands and is committed to community engagement, transparency, outreach and public input.
4. SORTA's public transportation service is an important factor in regional talent attraction and retention, especially for Millennials, and for the overall competitiveness of our region.
5. SORTA embraces regional considerations regarding public transportation even though the vast majority of service it now provides is limited to Hamilton County, and its primary current public funding source is from a City of Cincinnati earnings tax.
6. SORTA has embraced its role as operator of the new streetcar and is integrating that service with its bus services while maintaining separation and segregation of public funds used for its operations from streetcar operating funds.

Recommendations

1. SORTA should continue its balanced scorecard strategic planning efforts and future decision-making should be based, whenever possible, on metrics and measurable outcomes.
2. SORTA should continue to seek innovative ways to expand services throughout Hamilton County and implement key elements of its go*FORWARD vision, with particular emphasis on connecting people to jobs and services.
3. SORTA's long-term sustainability and future growth require permanent public funding through a sales tax that extends to the borders of Hamilton County or beyond. An expanded funding structure may require changes in SORTA's governance structure as well.
4. If funded countywide, SORTA should collaborate with the Mayor, Cincinnati City Council and the citizens of Cincinnati to eliminate all of the portion of the city earnings tax that it now receives.
5. SORTA, per its statutory authority and in consultation with City and County leaders, should decide if and when to present Hamilton County voters with a ballot issue for a sales tax increase for permanent public transportation funding.
6. SORTA must clearly communicate that its current business model is unsustainable and, without additional funding in the future, it could be forced to seek fare increases, reduce services, or both after FY2017.

Next Steps

1. The SORTA Executive Committee should brief the SORTA Board on the Task Force report.
2. Upon receipt of the report, it should be made public via Metro's website and shared with employees, elected officials and local media organizations. It should also be promoted on Metro's social media channels.
3. SORTA should arrange briefings on the Task Force report for the Mayor, City Council, City Manager, County Administrator and Board of Hamilton County Commissioners and others as it deems appropriate.
4. SORTA should consider the Task Force report in the context of its ongoing strategic planning activities.

Members of the Task Force include Baby Boomers, Gen Xers and Millennials, urban core and suburban community residents, business and labor leaders, faith leaders, social service community professionals and leaders of nonprofit organizations. Many Task Force members regularly choose to use Metro, while people they know and serve require Metro to function daily. All members of the Task Force care about the future of the Greater Cincinnati region, which they believe is directly tied to the quality of public transportation services available to all of its residents.

Again, on behalf of each member of the Task Force, thank you for this opportunity to be of service to our community. We are hopeful that our service adds value to your important role leading this region's largest public transportation organization.

Sincerely,

George H. Vincent, Co-Chair
Managing Partner, Dinsmore & Shohl

Delores Hargrove-Young, Co-Chair
COO, XLC Services

METRO Futures Task Force

Metro Futures Task Force Members

George H. Vincent
Managing Partner & Chairman
Dinsmore & Shohl

Vincent counsels businesses with regard to strategic growth, through acquisitions, mergers and funding, and regulatory oversight, whether by state and local authorities or nationally by agencies such as the SEC or FTC. As managing partner, Vincent has driven Dinsmore's significant expansion in recent years and continues to lead the firm's strategic efforts. He serves on numerous area business and community organization boards, including Cincinnati State, ArtsWave, Dan Beard Council, The Christ Hospital and the Cincinnati USA Regional Chamber. He is a graduate of Leadership Cincinnati Class 19. Vincent received his Juris Doctorate from University of Michigan Law School in 1982.

Delores Hargrove-Young
President & COO
XLC Services, LLC

Hargrove-Young is President and COO of XLC Services, LLC. She has guided XLC to winning the Cincinnati USA Supplier Diversity Circle of Excellence Award, the Eli Lilly & Company Supplier of the Year, the Procter & Gamble Minority Supplier of the Year Award and the African American Chamber of Commerce Small Business of the Year Award. She has served the community for years with a variety of organizations, including the Urban League of Greater Cincinnati, the Cincinnati USA Regional Chamber, Jobs for Cincinnati Graduates, YWCA of Greater Cincinnati, United Way of Greater Cincinnati, Cincinnati USA Convention & Visitors Bureau, ArtsWave, American Red Cross and The Greater Cincinnati Foundation.

Ed Babbitt
Vice President & Senior Counsel
Western & Southern Financial Group

Babbitt brings a strong background in transportation, having served as chief counsel of the Urban Mass Transportation Administration in Washington, D.C.; deputy assistant secretary and director of congressional relations for the U.S. Department of Transportation in Washington, D.C.; and assistant counsel for the U.S. House of Representatives' Committee on Public Works & Transportation. A graduate of Leadership Cincinnati Class 20, Babbitt is a past president and board member of SORTA. He has also been a member of the Cincinnati USA Regional Chamber Government Affairs Executive Committee and is a past chairman of Greater Cincinnati United Way Campaign (Major Firms C).

Dr. Karen Jones Bankston
Associate Dean Clinical Practice, Partnership and Community Engagement
University of Cincinnati

Working in UC's College of Nursing, Bankston is responsible for developing and maintaining partnerships and collaborations with nursing and other disciplines to provide leading-edge clinical experiences for students and effective and efficient environments that support practice and teaching for College of Nursing faculty/staff. She served as CEO of Drake Center from 2005-2011. Bankston is actively involved in numerous boards, including the United Way, the Urban League of Greater Cincinnati, Interact for Health and the Children's Home. She was previously chair of the Cincinnati USA Regional Chamber's Diverse by Design Steering Committee. Bankston is a graduate of Leadership Cincinnati Class 27.

Metro Futures Task Force Members

Nia Baucke
Community Impact Manager
StrivePartnership

Baucke serves as Community Impact Manager for the StrivePartnership where she manages communications and community engagement, ultimately sharing the message of supporting every child, every step of the way, cradle to career in the urban core of Greater Cincinnati. Baucke also advances the Partnership's efforts to increase academic outcomes for all children by identifying and supporting equitable strategies. In 2013, she received the Oscar Armstrong, III Service Award from BRIDGES for a Just Community. The honor recognizes emerging leaders who tirelessly pursue their own dreams, exhibit an unwavering commitment to their families, and demonstrate a passion for serving their communities.

Derrick Braziel
Co-founder
MORTAR Cincinnati

A social entrepreneur who moved to Cincinnati from Indianapolis in 2013, Braziel supports MORTAR by identifying, initiating and deepening relationships with various community stakeholders, providing opportunities for external partners to support local entrepreneurs and their ideas. He previously founded an Indianapolis non-profit named Dreamapolis, which raised thousands of dollars to support launching urban businesses; organized 16 workshops attended by 237 urban entrepreneurs; and two financial literacy summer camps for Indianapolis youth. He earned a bachelor's degree in Political Science from Wittenberg University. Braziel originally moved to Cincinnati to work as a project manager at StriveTogether.

Joseph Byrum
President & CEO
Ohio Valley Goodwill Industries

Byrum has served as president and CEO for 35 years and was honored in August by the Cincinnati Business Courier with a C-Suite Award, which goes to top executives whose leadership skills helped shape their companies. During his tenure, Ohio Valley Goodwill has served more than 50,000 men and women with disabilities or disadvantages and helped a significant percent to obtain economic self-sufficiency. Examples of programs and services implemented by Byrum include the Homeless Veterans Reintegration Program in the early 1990s and the launch of the award-winning Center for Advocacy, Recreation and Education (CARE) program.

Alfonso Cornejo
Owner
AC & Consulting Associates

With a particular focus on manufacturing and human resources, Cornejo has worked for a number of Fortune 500 companies, including P&G (Mexico City, Mexico and Cincinnati), Clorox International (Oakland, Calif.) and Chiquita Brands International (Cincinnati). Cornejo is on the board of directors of the Freedom Center, United Way, ArtsWave and the Northern Kentucky International Trade Association. He also is the founder of Hispanics Avanzando Hispanics, which organizes the Cincy-Cinco Latino charity festival. Cornejo served as president of the Hispanic Chamber, Cincinnati USA for six years. He has a Bachelor of Science in chemical engineering from Universidad Nacional Autónoma de México.

Metro Futures Task Force Members

Bishop Dr. Victor Couzens
Senior Pastor
Inspirational Baptist Church-City of Destiny

Couzens was the recipient of the Ohio Humanitarian Award from former Ohio Gov. George Voinovich, a member of the Governor's Task Force on welfare reform and a community liaison concerning non-violence. Couzens has also served as a member of the Northern Kentucky University African American Advisory Board, Springfield Township Strategic Planning Committee and National Heritage Advisory Board. He has been a featured guest on Black Entertainment Television (BET) and The Word Network. Couzens was named "Bishop of the Year" by his colleagues and local religious leaders in October 2007. His church has grown from 300 active members to more than 5,000 in the past 10 years.

Colin Groth
President
Charter Committee of Greater Cincinnati

Groth is the Director of Innovation at StriveTogether, a subsidiary of KnowledgeWorks. Groth provides leadership for StriveTogether's Innovation strategy, supporting education partnerships in more than 60 cities across the U.S. Previously, Groth served as Government Relations Director for the Southwest Ohio Regional Transit Authority (SORTA), where he oversaw the organization's government affairs, served as liaison to elected officials and government bodies and developed relationships with local business and civic groups to advance public transportation issues. He is also president of the Charter Committee of Greater Cincinnati and a graduate of the Cincinnati USA Regional Chamber's C-Change leadership development program.

Darin C. Hall
Vice President of Real Estate Development
Port of Greater Cincinnati

Hall directs real estate development for the Port Authority, with a focus on restoring value to sites that advance the growth of Hamilton County and City of Cincinnati communities through adherence to comprehensive community development models designed to address social, economic and environmental forces that contribute to health and income disparities. Hall serves on boards of the Corporation for Findlay Market, Cincinnati Development Fund and Episcopal Church Foundation of Southwest Ohio. He also serves on the Management Committee for the Urban Land Institute Cincinnati and Advisory Board for LISC Greater Cincinnati & Northern Kentucky. Hall is a graduate of Leadership Cincinnati Class 37.

Barbara Hauser
Community Relations
The Procter & Gamble Company

Hauser has been in P&G's external relations department since 2008. She currently serves as manager of community relations. She previously was the director of marketing at Cincinnati Ballet for nearly two years. Hauser also was a member of the Cincinnati USA Regional Chamber's C-Change program in 2011 (Class 6). She is the executive committee chair of the Over-the-Rhine Chamber of Commerce and is a director on the board of Downtown Cincinnati Inc. Hauser launched a pop-up art gallery in Over-the-Rhine called the Red Door Project, which features art from amateur artists during the neighborhood's Final Friday event.

Metro Futures Task Force Members

Eric Kearney
Owner
Company Kearney, LCC

Kearney is an attorney, entrepreneur and former state senator. He served as Ohio Senate Minority Leader for two years. He championed a number of causes including adoption, children's health, small business development and pension reform. Kearney sponsored bills to make February Black History Month in Ohio, create an adoption loan program, fight childhood obesity, establish Adoption Day in Ohio, reform Ohio's pension system and create Ohio's Poet Laureate. Kearney was a member of President Obama's national finance committee when he ran for U.S. Senate and President. Kearney founded and built one of the largest African American-owned publishing companies, Sesh Communications.

Robert Koehler
Deputy Executive Director & Director of Transportation
OKI Regional Council of Governments

Koehler joined OKI in October 1985 and was named Deputy Executive Director in January 2006. He is primarily responsible for transportation planning activities and program budgeting. Prior to OKI, Koehler served as design engineer for the L.B. Foster Company and Kaiser Engineers. During his tenure with OKI, Koehler has served as project manager for multiple transportation studies, including the Campbell County Transportation Study, the Northwest Butler Transportation Study, the Uptown Transportation Study and the I-471 Corridor Study. Koehler has served as chair of the Ohio Association of Regional Councils Transportation Subcommittee and is currently vice chair of the Kentucky MPO Council.

Peter McLinden
Southwest Ohio Regional Director
AFL-CIO

McLinden is an experienced labor and employment attorney who has worked with the AFL-CIO since 1998, advancing from assistant general counsel to associate general counsel to regional director. He has also served as executive secretary-treasurer. Prior to that, the University of Akron graduate was a law clerk for the United Steelworkers of America. McLinden's experience includes contract drafting, negotiation and interpretation; legal expertise in all aspects of labor and employment, administrative and contract law; legal research and analysis; and dispute resolution and creative problem solving, including extensive mediation and arbitration experience. He is a member of the current Leadership Cincinnati Class 39.

Johnmark Oudersluys
Executive Director
CityLink Center

Since October 2010, Oudersluys has served as a part of the CityLink team, which breaks down barriers for the working poor to progress out of poverty by creating a scalable, integrated center. Oudersluys was responsible for formulating strategy, enlisting partners, developing the program, securing financing, overseeing facility design and construction, and launching the center. The 60,000-square-foot facility opened Nov. 13, 2012, and began fulfilling its mission of transforming lives and our community. Oudersluys previously worked for Centric Consulting, Chiquita Brands International and Federal Mogul. He is an alumni of Give Back Cincinnati and a member of Crossroads Church.

Metro Futures Task Force Members

Mary Stagaman
VP for Regional Initiatives and Executive Director
Agenda 360

Stagaman is vice president for regional initiatives and executive director of Agenda 360 – a plan to grow talent, jobs and economic opportunity – for the Cincinnati USA Regional Chamber. Agenda 360 has become a trusted source of reliable data about the region's economy; has forged new collaborations to improve regional transit and foster government collaboration; and launched Green Umbrella, a regional sustainability alliance. Agenda 360's Diverse by DesignTM is an initiative to grow the diversity of the region's labor force and enhance inclusion in the workplace and in the community.

Bishop David Thomas, Sr.
Senior Pastor
New St. Paul Missionary Baptist Church

Originally from Cleveland, OH, Thomas has been pastoring for 20 years. He is the Bishop of Overseers at Kingdom Connection Fellowship International. He has a strong heart for people and loves to share hope and encouragement to those who are hurting. On his church's website, Thomas writes: "I believe the church is a spiritual hospital for the wounded, the depressed, the downtrodden, the lost, the hurting and abused and the unsaved. It is the place for all people, in spite of their backgrounds, their family tree and their financial situations to come and find the answers to that which ails them."

Pete Witte
Vice President
Baron ID Products

Witte, a Cincinnati westside activist, is a former chairperson of the Cincinnati Metropolitan Housing Authority board. Witte's father bought College Hill Engraving in 1987 and operated the company out of their home. Leaving college to work at the family business full-time, Witte helped grow the company and ultimately bought it from his father in 1995. Now named Baron ID Products, the company specializes in signs, banners, name badges, awards, industrial engraving, advertising specialties, glass, ceramics and installation. Witte's civic involvement includes leadership roles with Price Hill Civic Club, city of Cincinnati Planning Commission and Hamilton County Planning Partnership.

Southwest Ohio Regional Transit Authority | **METRO**

Metro Futures Task Force Final Report
Executive Summary

Southwest Ohio Regional Transit Authority

The Southwest Ohio Regional Transit Authority (SORTA) is a tax-supported, independent political subdivision of the State of Ohio and is a government entity. SORTA operates Metro fixed-route bus service and Access paratransit service for people whose disabilities prevent their riding Metro buses.

SORTA is governed by a 13-member volunteer citizens' board of trustees. Seven trustees are appointed by the City of Cincinnati and six are appointed by Hamilton County. Hamilton County appoints three of its own trustees plus one each representing Butler, Clermont and Warren counties. The funding relationship between SORTA and the City is established by the City/SORTA Agreement of 1973.

Metro Futures Task Force

Convened by SORTA on September 16, 2015, the Metro Futures Task Force is a panel of community leaders charged with providing input to SORTA regarding:

- How is Metro serving the needs of this region?
- What are current unmet transit needs of this region?
- How does Metro service need to change to meet future public transportation needs?

Mission:
To propose ways to improve transit to better serve the community and connect more people to jobs, education, healthcare and community opportunities.

Process:
Through a series of meetings that provide information about SORTA and community listening sessions, the Task Force will consider ways that SORTA should adapt to better serve the community.

Deliverables:
The Task Force will deliver a report to the SORTA Executive Committee with recommendations on how to go forward.

Membership:
George H. Vincent, co-chair, Dinsmore & Shohl
Delores Hargrove-Young, co-chair, XLC Services, LLC
Jason Dunn, chair-ex officio, Cincinnati USA Convention & Visitors Bureau, SORTA Board Chairman
Ed Babbitt, Western & Southern Financial Group
Dr. Karen Jones Bankston, University of Cincinnati
Nia Baucke, Strive Partnership
Derrick Braziel, MORTAR Cincinnati
Joseph Byrum, Ohio Valley Goodwill Industries
Alfonso Cornejo, AC & Consulting Associates
Bishop Dr. Victor Couzens, Inspirational Baptist Church-City of Destiny

Colin Groth, Charter Committee of Greater Cincinnati
Darin C. Hall, Port of Greater Cincinnati
Barbara Hauser, The Procter & Gamble Company
Eric Kearney, Company Kearney, LLC
Robert Koehler, OKI Regional Council of Governments
Peter McLinden, AFL-CIO
Johnmark Oudersluys, CityLink Center
Mary Stagaman, Agenda 360
Bishop David Thomas, Sr., New St. Paul Missionary Baptist Church
Pete Witte, Baron ID Products

Learnings and Recommendations

The Metro Futures Task Force presents the following Key Learnings and Recommendations to the Executive Committee of the SORTA Board of Trustees. Our rationale for each is provided in Tab 6 of this report.

Key Learnings

1. SORTA's current business model is not sustainable at current funding levels.
2. SORTA is, on a comparative basis with Cincinnati's peer cities, an efficiently run system.
3. SORTA understands and is committed to community engagement, transparency, outreach and public input.
4. SORTA's public transportation service is an important factor in regional talent attraction and retention, especially for Millennials, and for the overall competitiveness of our region.
5. SORTA embraces regional considerations regarding public transportation even though the vast majority of service it now provides is limited to Hamilton County, and its primary current public funding source is from a City of Cincinnati earnings tax.
6. SORTA has embraced its role as operator of the new streetcar and is integrating that service with its bus services while maintaining separation and segregation of public funds used for its operations from streetcar operating funds.

Recommendations

1. SORTA should continue its balanced scorecard strategic planning efforts and future decision-making should be based, whenever possible, on metrics and measurable outcomes.
2. SORTA should continue to seek innovative ways to expand services throughout Hamilton County and implement key elements of its go*FORWARD vision, with particular emphasis on connecting people to jobs and services.
3. SORTA's long-term sustainability and future growth require permanent public funding through a sales tax that extends to the borders of Hamilton County or beyond. An expanded funding structure may require changes in SORTA's governance structure as well.
4. If funded countywide, SORTA should collaborate with the Mayor, Cincinnati City Council and the citizens of Cincinnati to eliminate all of the portion of the city earnings tax that it now receives.
5. SORTA, per its statutory authority and in consultation with City and County leaders, should decide if and when to present Hamilton County voters with a ballot issue for a sales tax increase for permanent public transportation funding.
6. SORTA must clearly communicate that its current business model is unsustainable and, without additional funding in the future, it could be forced to seek fare increases, reduce services, or both after FY2017.

Next Steps

1. The SORTA Executive Committee should brief the SORTA Board on the Task Force report.
2. Upon receipt of the report, it should be made public via Metro's website and shared with employees, elected officials and local media organizations. It should also be promoted on Metro's social media channels.
3. SORTA should arrange briefings on the Task Force report for the Mayor, City Council, City Manager, County Administrator and Board of Hamilton County Commissioners and others as it deems appropriate.
4. SORTA (Metro) should consider the Task Force report in the context of its ongoing strategic planning activities.

Meeting No. 1 | September 16, 2015 | Cincinnati USA Regional Chamber of Commerce

Task force members convened for the first time. George Vincent and Delores Hargrove-Young, task force co-chairs, and Jason Dunn, chair - ex officio, addressed the membership about the importance of the task ahead and why their individual backgrounds and unique perspectives will bring value to the discussion of Metro's future.
Dwight Ferrell, Metro CEO and general manager, presented an overview of SORTA/Metro to provide a baseline knowledge of the transit authority's operations. Topics in Mr. Ferrell's presentation included:

- SORTA overview
- Metro by the numbers
- Recent successes
- "Peer City" review
- Four organizational focus areas (as determined by Mr. Ferrell in the spring of 2015)
- Current go*Forward vision

Task force members received binders that included several pieces of background information about Metro, task force procedures and information about upcoming listening sessions.

Meeting 1 Agenda

I.	**Welcome** • Review of mission • Introduction of co-chairs • Introduction of Pat Bready, facilitator	Jason Dunn
II.	**Co-chair welcome and remarks**	George Vincent, Delores Hargrove-Young
III.	**Task force process/administration and introductions**	Pat Bready
IV.	**Metro Today** • SORTA overview • Metro by the numbers • Recent successes • "Peer City" review • Four focus areas • Current go*FORWARD vision	Dwight Ferrell
V.	**Discussion/Q&A**	Pat Bready
VI.	**Next meeting** • Thursday, Oct. 1 • 3 - 4 p.m. • Cincinnati Convention & Visitors Bureau (525 Vine St., Suite 1500) • Beverages and snacks to be provided	Pat Bready
VII.	**Meeting adjournment**	Pat Bready

Meeting No. 2 | October 1, 2015 | Cincinnati USA Convention & Visitors Bureau

Task force members received an overview of the logistics and content of the upcoming community listening sessions and were encouraged to attend the sessions and promote them to their networks. They also participated in an exercise in which they answered the three key questions from the listening sessions and survey themselves: *I wish Metro would ___, The one place I wish I could get to on Metro is ___* and *The one thing I would change about Metro is ___*.

A researcher from the University of Cincinnati Economics Center presented top-level findings from its Peer City Public Transportation Review (2013) and Update (2014) and also previewed the Community Impact Study being conducted at that time, the results of which would be shared at the following task force meeting.

A representative from Metro's planning department presented a high-level summary of the six components of the *go*∗*Forward* transit vision.

Meeting 2 Agenda

I.	**Introduction** • Thank you and welcome • Community listening sessions overview	Jason Dunn
II.	**Individual meetings** • Comments re: meeting with each Task Force member	Dwight Ferrell
III.	**Organizational updates** • Business Courier articles (2) • Updated Task Force bios and contact sheet (2) • Fallon Research Group presentation (Sept. 2014) • DRAFT listening session survey • DRAFT online survey	Pat Bready
IV.	**A Peer City Review**	UC Economics Center
V.	**Metro's *go*∗*Forward* vision**	Butch Gaut
VI.	**Group discussion** • Community listening session process • Your role – Participation – Promotion • Task Force discussion: complete three statements	Pat Bready
VII.	**Your additional input and discussion**	George Vincent, Delores Hargrove-Young
VIII.	**Meeting adjournment**	Pat Bready

Meeting No. 3 | November 5, 2015 | Cincinnati USA Regional Chamber of Commerce

A UC Economics Center researcher presented the findings from its recently-completed Community Impact Study. Task force members also received the results for review in their binders.

Encouraged to attend the release event for The Connected Region, a study conducted by Agenda 360, Skyward, Urban Land Institute and the Cincinnati USA Regional Chamber that compares the effectiveness of Cincinnati's transportation systems against those of its peer regions – the task force received an overview of the study's focus from Erika Fiola of Agenda 360.

Upon getting an update on the status/progress of the listening sessions and survey results, the task force had much discussion about the need for additional community listening sessions and the prospect of scheduling those sessions with targeted groups.

Meeting 3 Agenda

I.	**Introduction** • Thank you and welcome	Jason Dunn, Delores Hargrove-Young
II.	**Organizational updates** • Media articles – Cincinnati Enquirer guest column (Oct. 11) – Cincinnati Business Courier article (Oct. 26) – WCPO – Insider article (Oct. 26) – UrbanCincy post (Nov. 2) • Task Force responses: three community listening session questions • UC Community Impact Study results	Pat Bready
III.	**Community Impact Study**	UC Economics Center
IV.	**Overview: The Connected Region**	Erika Fiola
V.	**Community Listening Sessions update**	Nick Vehr
VI.	**Open discussion**	Nick Vehr
VII.	**Meeting adjournment**	Pat Bready

Meeting No. 4 | December 3, 2015 | Cincinnati USA Regional Chamber of Commerce

The task force received an update on community engagement efforts, including surveys collected and listening sessions. Task force member Nia Baucke presented a summary of the session held for young professionals/millennials led by herself and fellow task force member Derrick Braziel.

Paul Fallon of Fallon Research Group presented top-level findings of the quantitative, public opinion research he conducted in Hamilton County about Metro and public transportation services in September 2014.

Representatives from engineering consultancy AECOM presented the preliminary report of "SORTA Service Evaluation, Development and Management Study."

Meeting 4 Agenda

I.	**Welcome**	Jason Dunn Delores Hargrove-Young George Vincent
II.	**Organizational updates/listening session update**	Vehr Communications
III.	**Fallon Research presentation**	Paul Fallon
IV.	**YP session report-out**	Nia Baucke Derrick Braziel
V.	**AECOM Report**	AECOM staff
VI.	**Task Force discussion**	Vehr Communications
VII.	**Meeting adjournment**	Vehr Communications

Meeting No. 5 | January 25, 2016 | Cincinnati USA Convention & Visitors Bureau

The task force received an update on the status of the community listening sessions and number of surveys completed as part of its community engagement effort.

Dwight Ferrell, Metro CEO and general manager, reported out about Metro's executive staff's proposed updates to the transit authority's mission and vision statements (which are subject to review and approval by the SORTA board), developed as part of the organization's strategic planning effort. He also presented the executive staff's proposed strategic areas and measurables by which they will gauge success in five years (these, also, are subject to the SORTA board's review and approval).

Prior to the meeting, task force members were asked to provide feedback to the key areas of the final report. The consolidated feedback was distributed via email in advance and in hard-copy format at the meeting.

Feedback prior to the meeting was received from: Alfonso Cornejo, Derrick Braziel, Joseph Byrum, Robert Koehler, Eric Kearney, Barbara Hauser, Johnmark Oudersluys and Mary Stagaman.

Co-chair George Vincent discussed the next steps as the task force works to develop its final report and led a round-table discussion wherein members in attendance provided their key insights for the report. Feedback at the meeting was received from: co-chair Delores Hargrove-Young, Karen Jones Bankston, Derrick Braziel, Alfonso Cornejo, Darin C. Hall, Barbara Hauser, Eric Kearney, Robert Koehler, Johnmark Oudersluys, Mary Stagaman, Bishop David Thomas, Sr. and Mr. Vincent.

Meeting 5 Agenda

I.	**Introduction** • Thank you and welcome	Jason Dunn George Vincent Delores Hargrove-Young
II.	**Organizational updates** • Community Listening Session update	Vehr Communications
III.	**Report: Metro Strategic Plan**	Dwight Ferrell Mary Moning
IV.	**Report discussion**	George Vincent Delores Hargrove-Young
V.	**Next steps**	George Vincent Delores Hargrove-Young
VI.	**Next meeting** • Thursday, Feb. 25 • 3:30 – 5 p.m. • Cincinnati USA Regional Chamber (Leadership Room) • Beverages and snacks provided	George Vincent Delores Hargrove-Young
VII.	**Meeting adjournment**	George Vincent Delores Hargrove-Young

Meeting No. 6 | February 25, 2016 | Cincinnati USA Regional Chamber of Commerce

Task force members in attendance received their final report binders, complete with all materials except for the Cover Letter, Executive Summary, Learnings & Recommendations and Next Steps documents. They received these four documents in draft format (outside of their binders).

Co-chairs George Vincent and Delores Hargrove-Young led members through the group's draft Key Learnings and Recommendations and also its suggested Next Steps for SORTA. All task force members present provided input on each of these areas: Ed Babbitt, Alfonso Cornejo, Eric Kearney, Bob Koehler, Karen Jones Bankston, Pete McLinden and Mary Stagaman. Ms. Hargrove-Young and Mr. Vincent discussed their suggested edits as well.

Ms. Hargrove-Young and Mr. Vincent encouraged members to continue reviewing the draft documents and to provide additional input and/or edits as needed to themselves and to the support staff. It was decided that an electronic version of the draft documents would be sent to all members and that a conference call would be scheduled in the coming weeks to discuss any further edits prior to the report's finalization.

Meeting 6 Agenda

I.	**Welcome**	George Vincent Delores Hargrove-Young
II.	**Final Report Binder Review**	
III.	**Discussion of Co-Chair Cover Letter**	George Vincent Delores Hargrove-Young
IV.	**Discussion of Key Learnings/Recommendations**	All
V.	**Discussion of Next Steps**	All
VI.	**Meeting adjournment**	

Metro Research & Community Engagement Efforts
2010 – 2015

Research and community engagement are standard operating procedures for SORTA/Metro. Research projects – both quantitative and qualitative – and outreach into the Greater Cincinnati community underscore that Metro is accountable to the area's citizens – to both those who use and who do not use its services. In the past six years alone, prior to the work of the Metro Futures Task Force, Metro has attained feedback from thousands of riders and non-riders that has informed operational procedures as well as service changes that have been implemented and changes that are being considered for the future. Metro highly values input from the community.

Below is a summary of the research and community engagement efforts implemented by Metro from 2010 – 2015.

Community Engagement/Public Input
Stakeholder Interviews and Meetings, Community Education, Public Meetings

Stakeholder Interviews and Meetings
To complement formalized research methods, discussing key issues regarding Metro specifically, and public transportation generally, with stakeholder groups taps into deeper, two-way insights and learnings. Metro has conducted several such sessions with stakeholders representing riders/potential riders and with stakeholders whose constituents are riders/potential riders (i.e. employers, business leaders, etc.).

Issues discussed at these meetings included community priorities; traffic congestion; impressions of Metro (services, performance, fiscal responsibility); ridership data/transit usage; demand for expanded transit (options/services, usage, quality of life, funding scenarios); job connectivity and how to better communicate with these audience segments. In 2014, prior to the hiring of CEO and General Manager Dwight Ferrell, such outreach also gleaned insight into what qualities Metro should seek in its new chief executive.

Stakeholder interviews and meetings

- Leadership Interviews (Vehr Communications), 2010
  - Meetings with **21 community and business leaders**
- Stakeholder Interviews (Nelson\Nygaard), 2011-2012
  - Meetings with stakeholders that helped inform the development of the 2023 Transit Plan, which ultimately included short-term and long-term recommendations
- City of Cincinnati Neighborhood Leadership Sessions (Metro, thinkBIG strategies), 2014
  - Meetings with formal and informal leaders from six neighborhoods (chosen due to meeting two to three criteria: being a key redevelopment neighborhood, being located along the projected Metro*Plus route and/or being potentially affected by other components of the go*FORWARD Transit Vision)
  - In total, Metro leadership met with **42 leaders** from the six communities
- Workforce Community Listening Session (Metro, Starboard Strategy), 2014
  - Meeting with **nine leaders** from organizations that facilitate and support workforce efforts

During these meetings alone, Metro leaders met with more than **70 representatives** from a diverse set of stakeholder segments in the Greater Cincinnati area.

Metro CEO outreach

When CEO and General Manager Dwight Ferrell began his tenure at Metro in January 2015, he undertook an extensive 100-day onboarding process which included meetings with key leaders and stakeholders from around Cincinnati. The purpose of these meetings was two-fold: they served as an introduction between these stakeholders and Mr. Ferrell, and they enabled him to learn about the attitudes and opinions of Metro held by these individuals as well as issues facing public transportation in Cincinnati. These meetings helped inform Mr. Ferrell's strategic direction for the organization, which he announced at a special reception at the Cincinnati USA Regional Chamber of Commerce at the conclusion of his first 100 days.

Community Education

As a public service, it is important that Metro educates the community about its services while staying top-of-mind with riders and potential riders. Metro and its employees are regularly out in the community at high-traffic locations and events to educate attendees about its services, to engage the residents and to have a consistent presence in the community.

At times, there has been a need to provide education about Metro to a target audience. For example, a need grew evident in 2014 to conduct a special workshop for HR managers to educate them about the advantages of encouraging transit use among their employees. In collaboration with the Cincinnati USA Regional Chamber of Commerce, Metro planned and implemented an event that taught attendees about these advantages and the corporate and employee tax benefits for pre-tax transit pass programs. The Chamber also hosted the workshop.

Further, Metro employs an outreach and sustainability manager whose focus is to meet with current and potential business partners and educate their employees about the benefits of Metro and how to ride. This staff member also works with other community groups to educate them about Metro and even develops programming in partnership, such as the annual Cincy YP Entertainment Bus, an activity for the crucial young professional demographic. To date, this staff member's efforts have resulted in more than 50 partnerships with area businesses and nonprofits including Kroger, US Bank, University of Cincinnati, Cincinnati Children's Hospital Medical Center, Goodwill and the Cincinnati Metropolitan Housing Authority.

Public Meetings

Public meetings enable Metro to educate the community about its services: current, upcoming and proposed. They also allow the community to provide input to Metro based on what they learn.

As Metro developed its 2023 Transit Plan, which consists of short- and long-term recommendations, it conducted 14 public meetings throughout the area in 2012 to educate the community and assess its opinions on how it wanted Metro to go forward. The feedback attained helped to ultimately inform the plan.

In May 2013, Metro hosted an all-day public meeting at Duke Energy Convention Center to receive input from the community about its proposed service changes that would go into effect later that year. These changes were informed by Metro's extensive research and community listening efforts in 2012. When the service changes were finalized, in the summer of 2013, Metro visited several groups representing audience segments that would be affected by the changes to educate them about the improvements.

Research

Quantitative/Qualitative, Community Impact/Peer City Comparison Studies

Quantitative/Qualitative

Metro-commissioned studies attained feedback from City of Cincinnati and Hamilton County residents on several issues, including community priorities; traffic congestion; impressions of Metro (services, performance, fiscal responsibility); ridership data/transit usage; and demand for expanded transit (options/services, usage, quality of life, funding scenarios).

Studies included:

- Transit Services Study (Fallon Research & Communications), 2010
  - Quantitative, scientific study of **403 respondents**
- Transit Services Online Survey (Vehr Communications), 2010
  - Quantitative, unscientific study of **945 respondents**
- Latent Demand for Expanded Metro Services: A Survey of Hamilton County Adults (CJI Research Corporation), 2012
  - Quantitative, scientific study of **1,200 respondents**
- Onboard Ridership Survey (Metro), 2012
  - Quantitative, unscientific study of **4,896 respondents**
- Which Way Do You Think Metro Should Go? Survey (Metro), 2012
  - Quantitative, unscientific study of **1,992 respondents** (collected by street teams at seven community events)
- Which Way Do You Think Metro Should Go? Online Survey (Metro), 2012
  - Quantitative, unscientific study of **1,028 respondents**
- Metro/Public Transit Services Focus Group (Fallon Research & Communications), 2013
  - Qualitative, unscientific study
- Transit Services Study (Fallon Research & Communications), 2014
  - Quantitative, scientific study of **503 respondents**
- Metro/Public Transit Services Focus Groups (Incite!) 2015
  - Qualitative, unscientific study
- Onboard Ridership Survey (Metro), 2015
  - Quantitative, unscientific study of **583 respondents**

During this five-year period, Metro studied the opinions and attitudes of **more than 11,550 residents.**

Metro had an opportunity in 2010 to further gain public opinion input from The Greater Cincinnati Survey, a semiannual survey conducted by the Institute of Policy Research at the University of Cincinnati. The Spring 2010 omnibus survey, conducted via telephone interviews, included several questions related to Metro, including the perceived source of the transit agency's funding. **More than 1,000 Hamilton County residents were interviewed** in this quantitative, scientific study.

With the completion of The Greater Cincinnati Survey, Metro attained feedback from **more than 12,550 Hamilton County residents** about a number of key issues affecting the organization.

Community Impact/Peer City Comparison Studies
Metro commissioned the Economics Center of the University of Cincinnati to conduct a number of research projects to measure the system's community impact - including its economic/fiscal impact - and performance as compared with the transit systems of Cincinnati's 11 peer cities (as identified by Agenda360, the regional action plan designed to transform Cincinnati USA into a leading metropolitan region for talent, jobs and economic opportunity by the year 2020).

Studies included:

- The Community Impacts of Metro, 2010
- A Peer City Public Transportation Review, 2013
- A Peer City Public Transportation Review Update, 2014
- The Community Impact and Related Benefits of Metro, 2015*

*The 2015 study was undertaken to support the efforts of the Metro Futures Task Force.

Metro Research & Community Engagement Efforts

Metro Futures Task Force Community Engagement Efforts

2015 – 2016

The Metro Futures Task Force completed an extensive community engagement effort to further assess how the community thinks Metro should go forward. This effort augments Metro's ongoing commitment to community engagement, public input and transparency summarized earlier in this report.

Through a series of listening sessions and an online survey, the task force received community input from a number audience segments in Cincinnati to help answer the questions set forth in the task force's mission:

- **How is Metro serving the needs of this region?**
- **What are current unmet transit needs of this region?**
- **How does Metro service need to change to meet future public transportation needs?**

More than 350 people attended listening sessions, and 1,127 people completed the task force's survey: either online or the paper survey (paper surveys were completed at the listening sessions and at various community events).

The following is a summary of the task force's community engagement and listening efforts.

METRO
www.go-metro.com

METRO's Community Listening Session

Key Findings: Surveys and Listening Sessions

The following common themes emerged from feedback provided by participants via the online survey, paper survey (provided at the listening sessions and nearly identical to the online survey) and at the listening sessions:

1. Residents place a high priority on improved public transportation.
2. The public generally thinks Metro does a good job providing public transit services.
3. Commuting to work is a major reason people ride Metro.
4. People think Metro should place a high priority on the proposed components of the *go*FORWARD* Transit Vision.
5. Non-riders typically are hesitant to start riding because they are unsure of how to start.
6. There is a demand for increased bus frequency – including more frequency in the evenings.
7. Both non-riders and riders desire an easier experience with Metro, including:
   a. Easier-to-understand route maps/schedules
   b. Ability to pay via credit/debit card or phone (and not need exact change)
   c. More ticket vending machines to more easily and frequently buy passes
   d. Ability to better predict bus arrival times (meaning more buses arriving on time and accurately posted arrival times)
8. There should be more awareness about the mobile apps that tap into Metro's real-time data to track bus arrivals and departures.
9. The current hub-and-spoke model isn't efficient; there is a desire for more crosstown service.
10. There should be service to CVG.

Survey Results

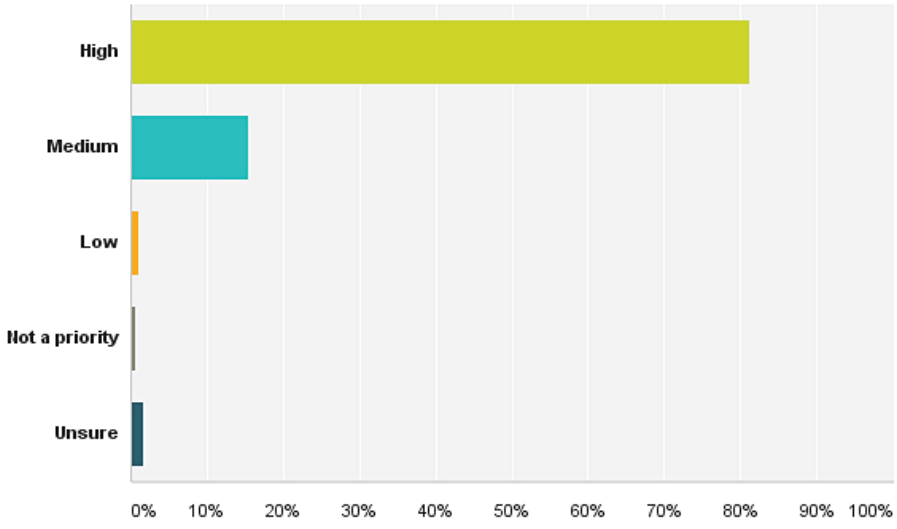
Metro housed a survey online at www.go-metro.com and provided a nearly-identical paper survey at the in-person listening sessions. The three questions asked in essay format on the online survey were asked verbally at several of the listening sessions, and the answers were recorded. The paper survey, therefore, did not include these three questions.*

To ensure consistency with the analysis of all survey results, the answers to the hard copy survey were input into an online survey tool. Answers to the three questions asked at listening sessions and recorded by SORTA staff also were inputted to ensure consistency with their identical questions asked in the online version.

*Further, a separate online survey was sent to the University of Cincinnati community and was completed by 90 respondents. This survey's questions were identical to the original survey, and the results further emphasized the key findings presented here. Results from UC's online survey are found at the end of this summary document.

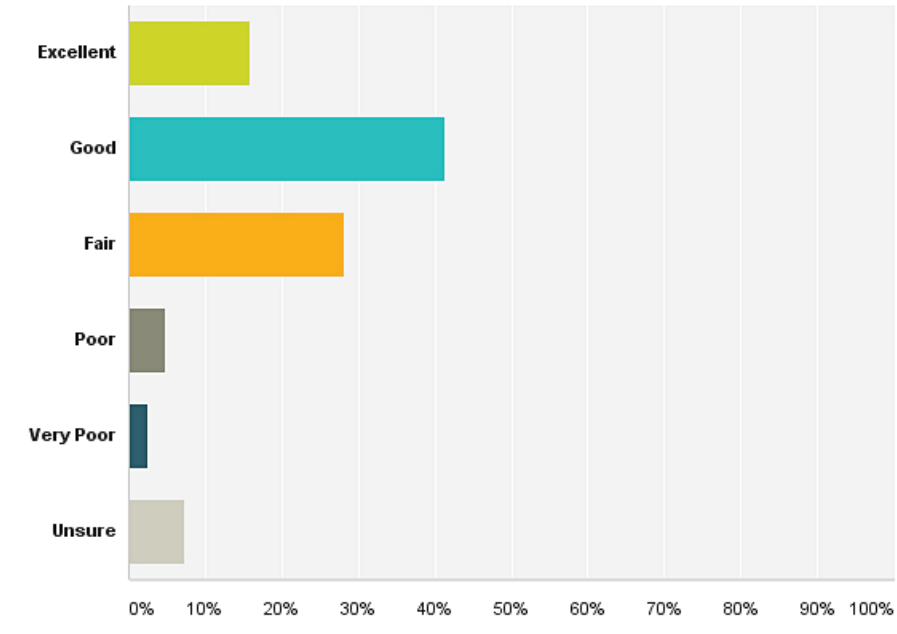
Q1 How much of a priority do you think improved public transit should be for Greater Cincinnati?

Answered: 1,127 Skipped: 0



Q2 How would you rate the job Metro does providing bus and public transit services?

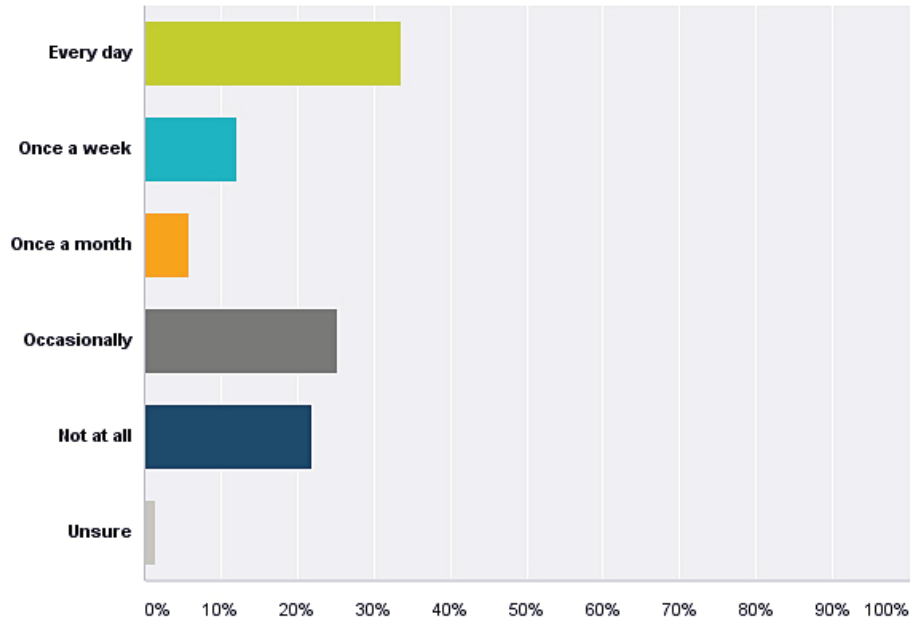
Answered: 1,127 Skipped: 0



Survey Results

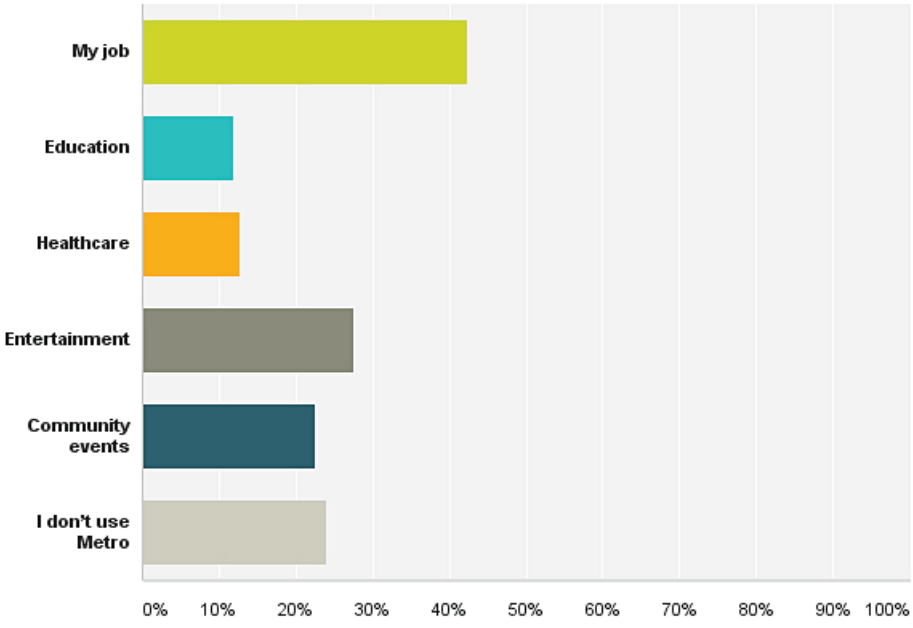
Q3 Which of the following best describes how often you use ride Metro?

Answered: 1,127 Skipped: 0



Q4 Fill in the blank -- I primarily ride Metro to:

Answered: 1,127 Skipped: 0



Q5* Fill in the blank --

I wish Metro would ___.

The one place I wish I could get to on Metro is ___.

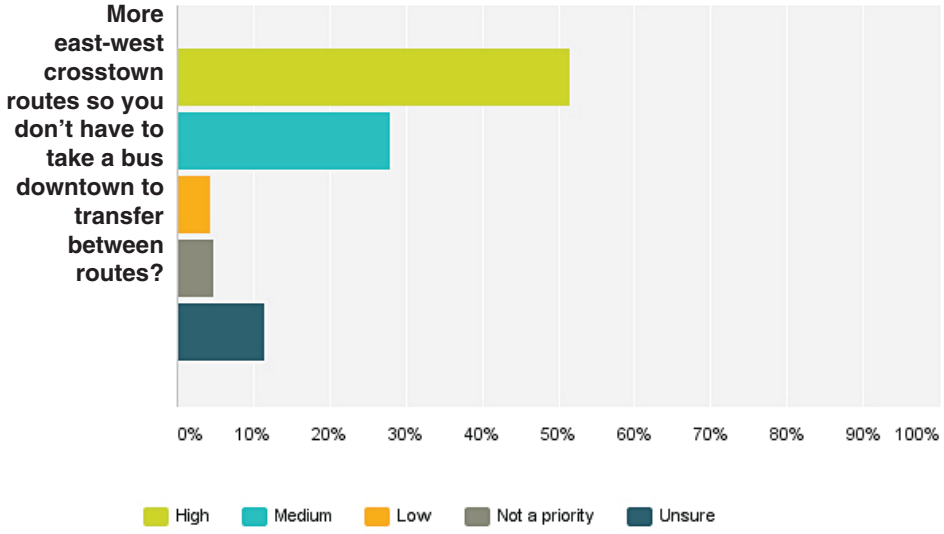
The one thing I would change about Metro is ___.

**See transcribed responses at the end of this section.*

Survey Results

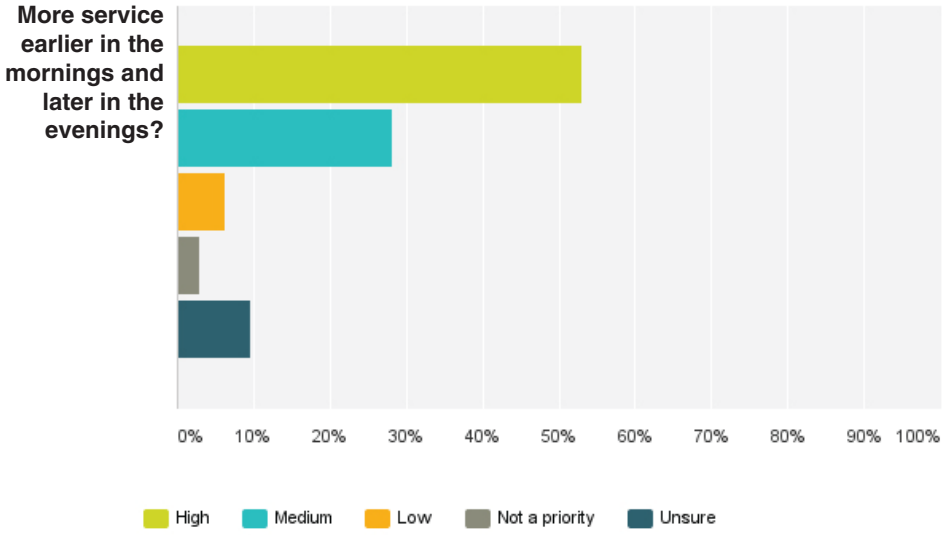
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



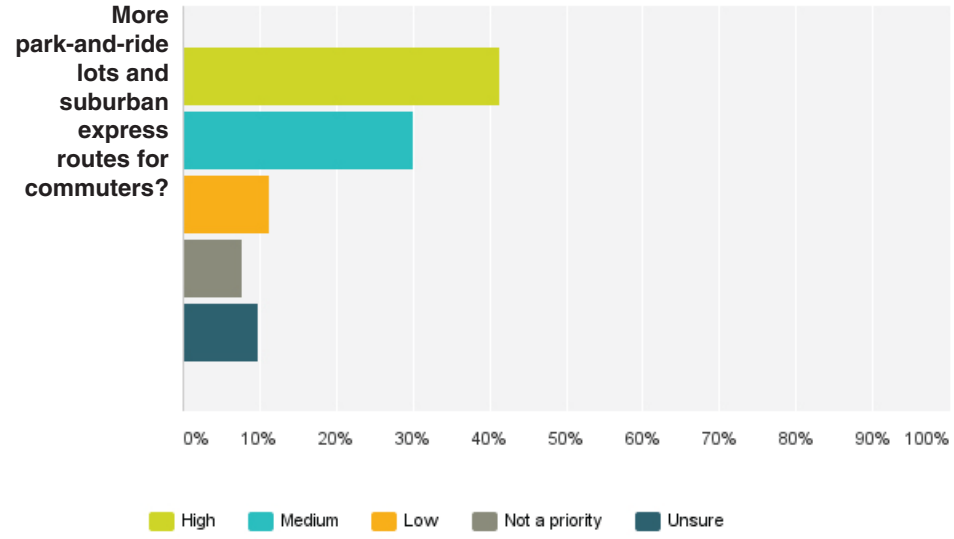
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



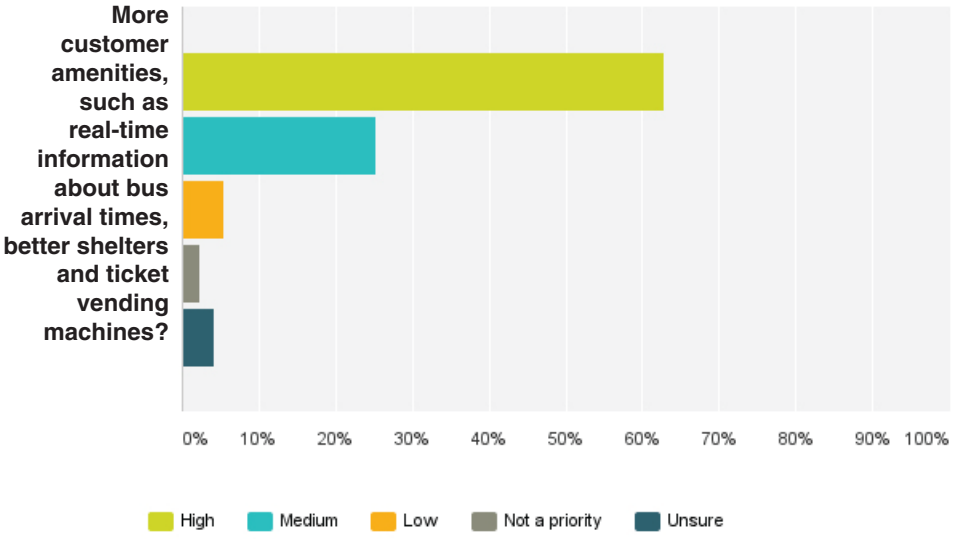
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



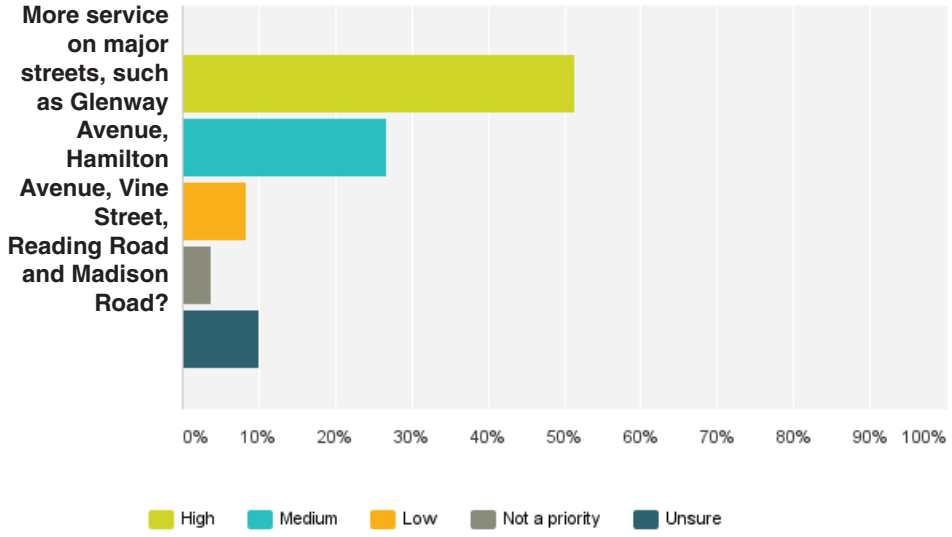
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



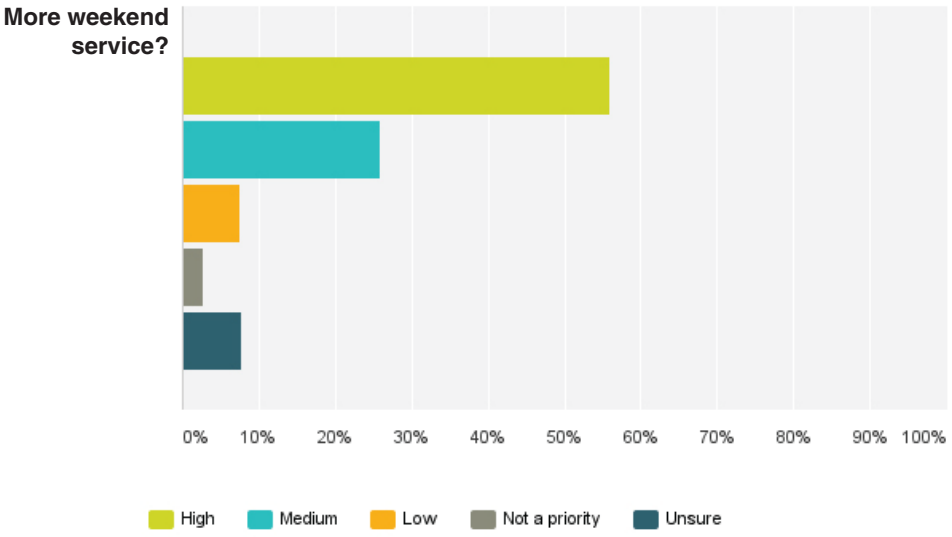
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



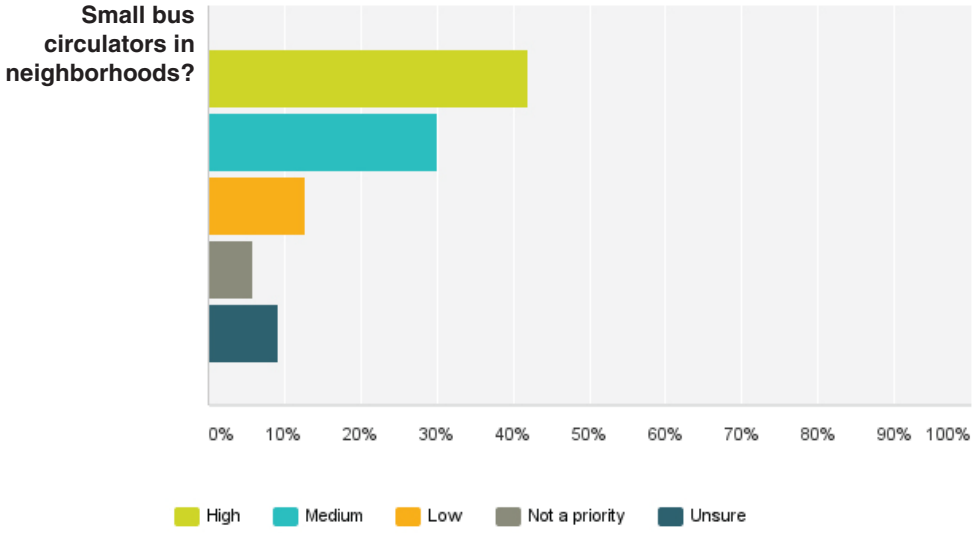
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



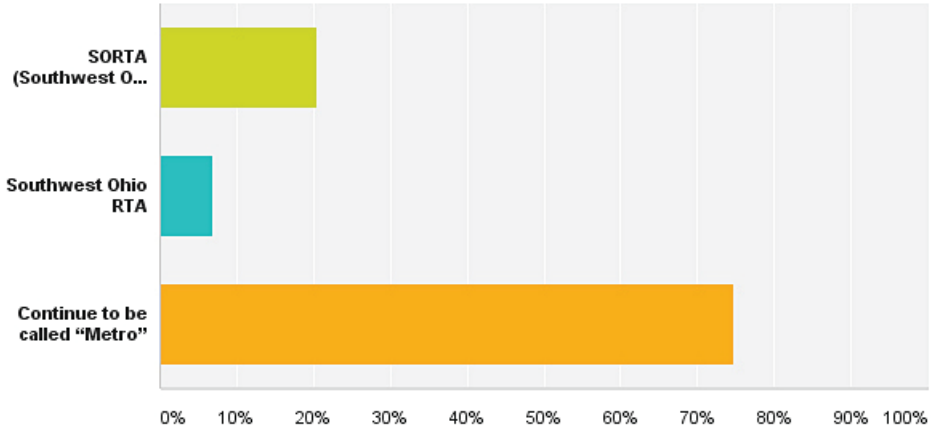
Q6 How much of a priority should Metro place on each of these:

Answered: 1,127 Skipped: 0



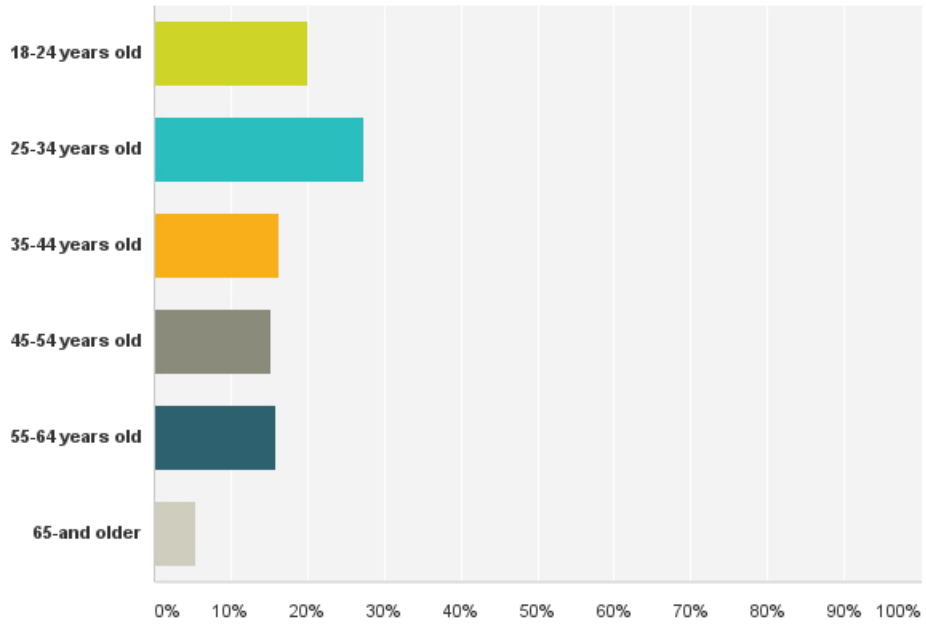
Q7 What name do you think our transit system should use:

Answered: 1,127 Skipped: 0



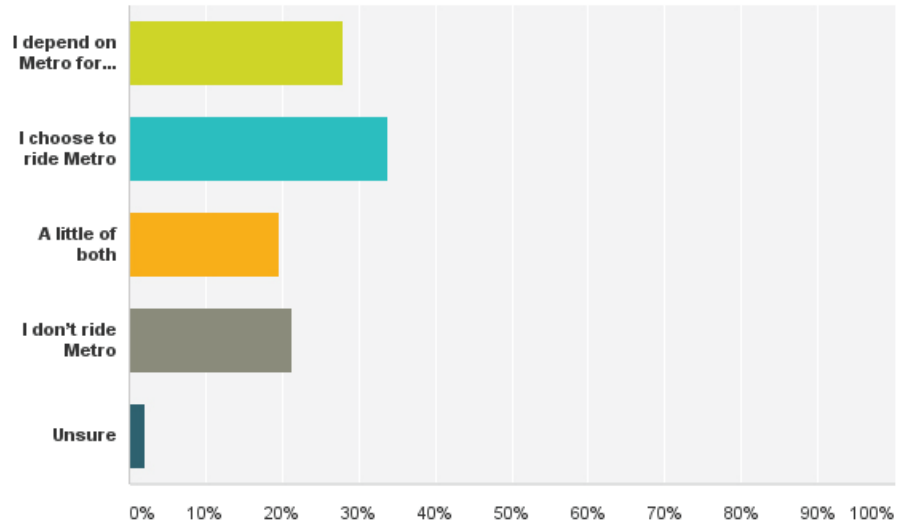
Q8 Please select your age range:

Answered: 1,127 Skipped: 0



Q9 Would you say that you depend on Metro for transportation, or do you use it by choice?

Answered: 1,127 Skipped: 0



METRO's Community Listening Session

Listening Sessions

Below is a results summary of the task force's listening session initiative:

Oct. 13, 2015
Clovernook Center for the Blind and Visually Impaired
Surveys taken/estimated attendance = 20*

Oct. 16, 2015
The Public Library of Cincinnati and Hamilton County – main branch (downtown)
Surveys taken/estimated attendance = 124*

Oct. 19, 2015
Anderson Center (Anderson Township)
Surveys taken/estimated attendance = 6*

Oct. 22, 2015
Green Township Library
Surveys taken = 2 /attendance = 2

Oct. 26, 2015
Community Action Agency
Surveys taken/estimated attendance = 21*

Oct. 27, 2015
Hamilton County Development Disabilities Services
Surveys taken = NA/attendance = 12

Nov. 4, 2015
Gabriel's Place/Avondale
Surveys taken/estimated attendance = 20*

*As most attendees at the listening sessions took the paper survey, the number of surveys completed is nearly identical to the number of attendees at each session.

At the above sessions, attendees completed the survey and verbally answered the following questions: I wish Metro would ___, The one place I wish I could get to on Metro is ___ and The one thing I would change about Metro is ___.

go*FORWARD Vision Component Prioritization

In addition, attendees at the above sessions participated in an interactive exercise in which they prioritized the components of Metro's go*FORWARD Transit Vision. Each component of the transit vision was displayed on a map. Participants were given three stickers: one red and two yellow. They were asked to place the red sticker on the component they felt was most important and the yellow stickers on the components they felt were important but not as critical as their first choice.

Of note, bus rapid transit (BRT) service along Reading Road and new transit centers at Jordan Crossing and Kenwood were among the components that received the most high-priority red stickers. As an entire category, proposed BRT routes received the most high priority red stickers (28).

The cumulative results from each session are below:

Proposed Crosstown Routes:									
Glenway Crossing-Jordon Crossing		Glenway Crossing-Madisonville		Galbraith Rd.		Jordan Crossing-Columbia Tusculum		Jordan Crossing-Hyde Park	
2	4	2	8	2	16	2	3	3	3

Proposed Bus Rapid Transit:											
Glenway Ave.		Hamilton Ave		Vine St.		Reading Rd.		Montgomery Rd.		Madison Rd.	
2	4	5	5	2	8	9	12	5	3	5	10

Proposed Express Routes:									
Green Township		Union Center		Liberty Township Rt. 42X		US 42		Mason	
1	3	3	2	3	1	2	4	2	11

Proposed Connector Routes:													
Harrison		Kemper		Hamilton		Liberty Township		Blue Ash		Montgomery		Eastgate Mall	
0	4	0	2	3	5	1	1	6	10	3	11	0	6

Proposed Transit Centers:											
University		Knowlton's Corner		North College Hill		Tri-County Mall		Jordan Crossing		Kenwood	
1	6	1	7	1	7	5	9	6	2	6	6

Proposed Small Bus Service:									
Green Township		Western Hills		UC		Uptown		Call & Ride	
2	2	4	1	3	6	4	10	1	4

Nov. 11, 2015
Millennial/YP Listening Session
MORTAR Cincinnati (1329 Vine Street, Cincinnati, Ohio 45202)

This session was organized as a Q&A with Metro CEO and General Manager Dwight Ferrell. Metro staff members from the planning and communication departments also were present to answer questions.

Attendees expressed interest in learning more about many aspects of Metro and public transportation, asking Mr. Ferrell several questions. The following insights were gleaned:

1. We need to think about how Cincinnati's transportation system can be the best it can be.
2. Metro's plan should be transformative. The organization has the opportunity now to do something transformative.
3. We should think of transit as a product: it needs to be reliable and easy to use.
4. The community should know Metro's long-term goals and vision, and they should be messaged the right way – with specificity so the public understands, exactly, what Metro wants to do.
5. Although pro-transit, many participants expressed confusion on knowing how to get started as a bus rider.
6. It is liberating to not own a car – if you're able to do so.
7. Only seven participants had heard of and/or downloaded one of the real-time transit apps available.
8. It would be valuable for Metro to continue to seek input from Millennials, even beyond the context of the task force's efforts.

Results from the paper surveys, which were available at the session, were inputted online to ensure consistency with the results from the online survey.

An additional summary of the YP listening session is provided in the appendix.

Surveys taken = 4/attendance = 13 participants

Dec. 9, 2015
Cincinnati.com Online Chat
Enquirer Media offices (312 Elm Street, Cincinnati, Ohio 45202)

Mr. Ferrell and SORTA Board Chair Jason Dunn participated in a real-time, online chat with community members hosted by Enquirer Media. According to the transcript of comments provided by the Enquirer, between 23 - 42 people submitted questions and/or comments to the chat.*

Attendees asked Mr. Ferrell and Mr. Dunn questions regarding a variety of issues, including streetcar operations, Metro's plans for the future, real time-tracking apps, payment options, general information and much more. The session's activity indicated that public transportation is a topic that is of great interest to the region.

Attendance = 23-42 participants*

*Many participants were represented by a specific username, while 20 questions/comments were submitted under the general "Guest" username. It is possible that each "Guest" comment was provided by a different participant. It also is possible that one person submitted two or more questions/comments under the "Guest" username.

METRO's Community Listening Session

Jan. 21 & 22, 2016
University of Cincinnati (UC) Listening Sessions with Faculty, Staff and Students
On-campus (CARE/Crawley Building, Jan. 21, and Tangeman University Center, Jan. 22)

Metro partnered with UC's Department of Planning + Design + Construction to host two on-campus listening sessions. Attendees provided feedback at the following stations: rider/non-rider station (Metro riders indicated how they wanted Metro to improve, and non-riders indicated what it would take to get them to ride the bus), a map station where participants placed a sticker where they live and up to four stickers (of a different color) indicating where they would like to ride the bus, a feedback station where participants learned and provided input about the UC department's proposed University Connector Bus Route and the survey station where participants completed the paper survey.

The following insights were gleaned:

Riders and non-riders have common, shared demands for:

1. A bus route network that is more of a "grid" and has more crosstown service (as opposed to the hub-and-spoke model).
2. Increased frequency, including in the evenings.
3. An easier experience with Metro, including easier-to-understand maps, ability to pay fares via phone or card (without needing exact change), more ticket vending machines and more accurately posted arrival times.
4. Better connectivity between UC's campuses.
5. Service to CVG.
6. Increased Metro*Plus service.

Desired Metro destinations:

Desired locations for UC students, faculty and staff (who primarily live near campus in the Uptown area) tend to be: the Central Business District (Downtown Cincinnati); Covington, Ky.; Newport, Ky.; Over-the-Rhine; Oakley; Kenwood; Avondale; Corryville; Norwood; Hyde Park; Northside; and Oakley.*

Feedback on Proposed University Connector Bus Route:

This connector route, proposed by UC's Department of Planning + Design + Construction, is a limited-stop crosstown route with service every 15 minutes (including on weekends). The route would serve UC's Uptown campuses and connect to several neighborhoods, from Madisonville to Northside.

The proposed route was received well by participating faculty, staff and students. Several faculty and staff participants noted they would potentially use the route to commute and travel to Rookwood for lunch. Many students noted that they would potentially use the route to go shopping at destinations such as the Kroger and Target in Oakley and the retail stores at Rookwood. Several participants offered additional route and service suggestions for the Department of Planning + Design + Construction to consider in regards to the proposed route as well.*

Results from the paper surveys, which were available at the sessions, were inputted online to ensure consistency with the results from the online survey.

January 21 surveys taken/estimated attendance = 56**
January 22 surveys taken/estimated attendance = 92**

**SOURCE: Summary of Cincinnati Metro Listening Sessions, Jan. 29, 2016, provided by the UC Department of Planning + Design + Construction*

***As most attendees at the listening sessions took the paper survey, the number of surveys completed is nearly identical to the number of attendees at each session.*

METRO's Community Listening Session

Feb. 2, 2016
Listening Session with the Sierra Club of Cincinnati
Madisonville Arts & Cultural Center (5021 Whetsel Avenue, Cincinnati, Ohio 45227)

Staff members from Metro's communications and planning departments participated in a Q&A-style listening session with members of the Sierra Club of Cincinnati. Following the Q&A portion, Sierra Club members visited the following stations to provide input to Metro: go*FORWARD Transit Vision prioritization (dot exercise described earlier) and a station where they offered input about how Metro should improve and what it would take to get them to ride the bus (for non-riders). The paper survey also was available.

Nonriders expressed demand for the following:

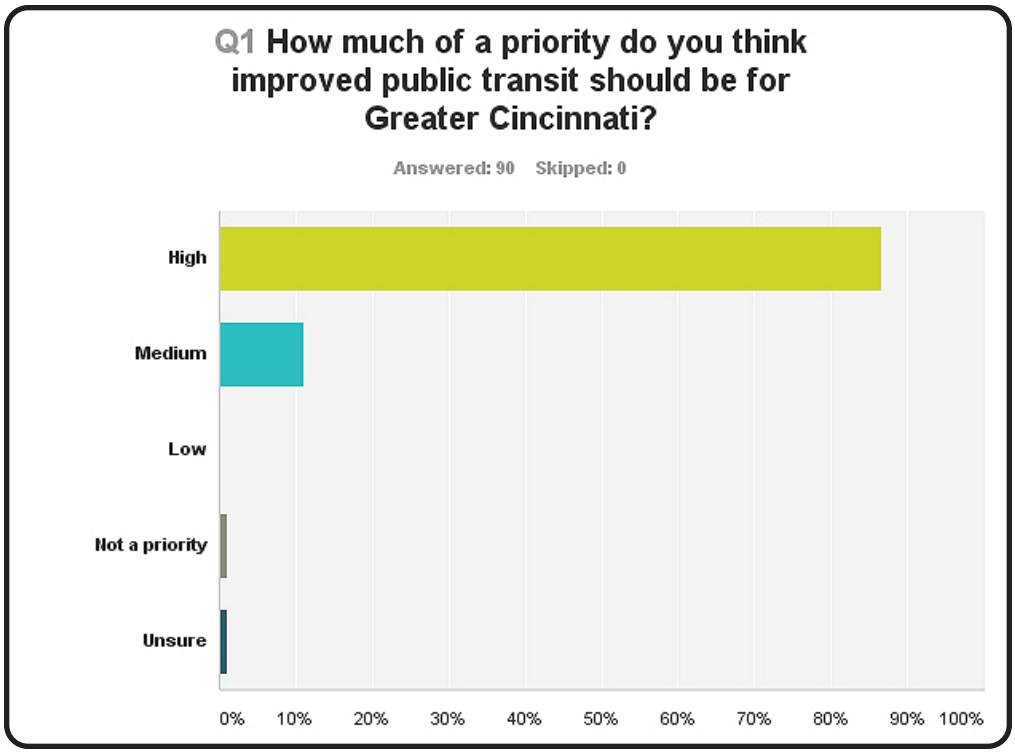
1. Easier-to-understand schedules and route information.
2. Increased frequency.
3. Service to CVG.
4. More crosstown routes.

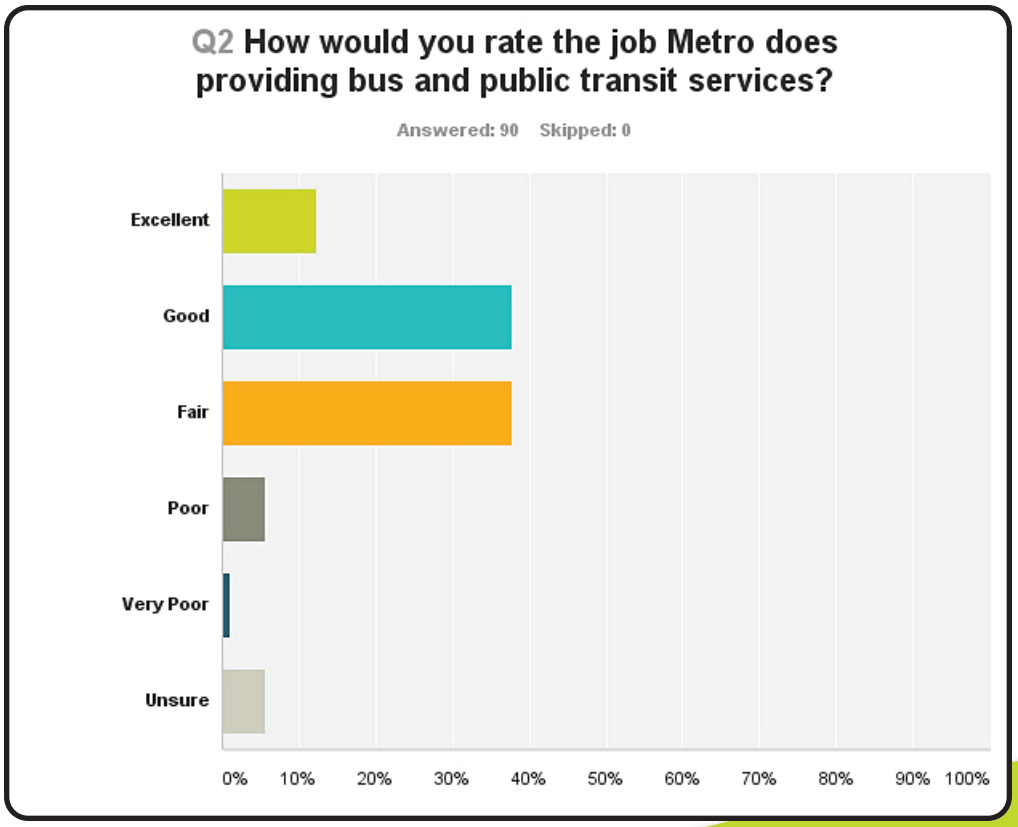
The Sierra Club members' feedback to the go*FORWARD dot exercise is included in the cumulative summary of the exercise provided earlier. In addition, to ensure consistency in the analysis of feedback, riders' responses to the questions posed at the stations and their survey responses were inputted online.

During the Q&A portion, members asked questions about several topics, including: Bus Rapid Transit, Eastern Corridor Project, access to CVG, real-time tracker apps, Metro/TANK coordination, funding options and implementation timeline of proposed service improvements.

Surveys taken = 11/attendance = 15 participants

UC Online Survey Results

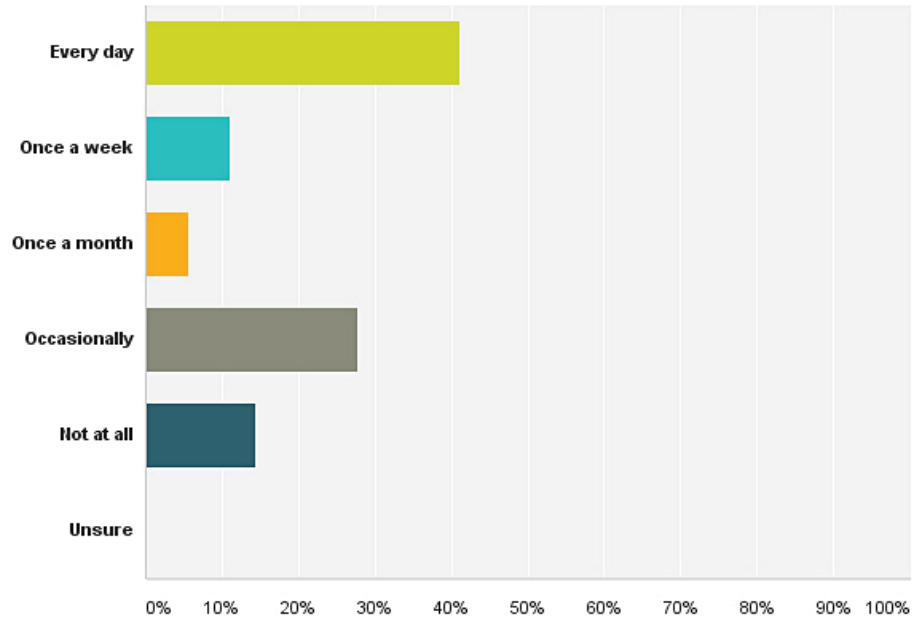




Survey Results

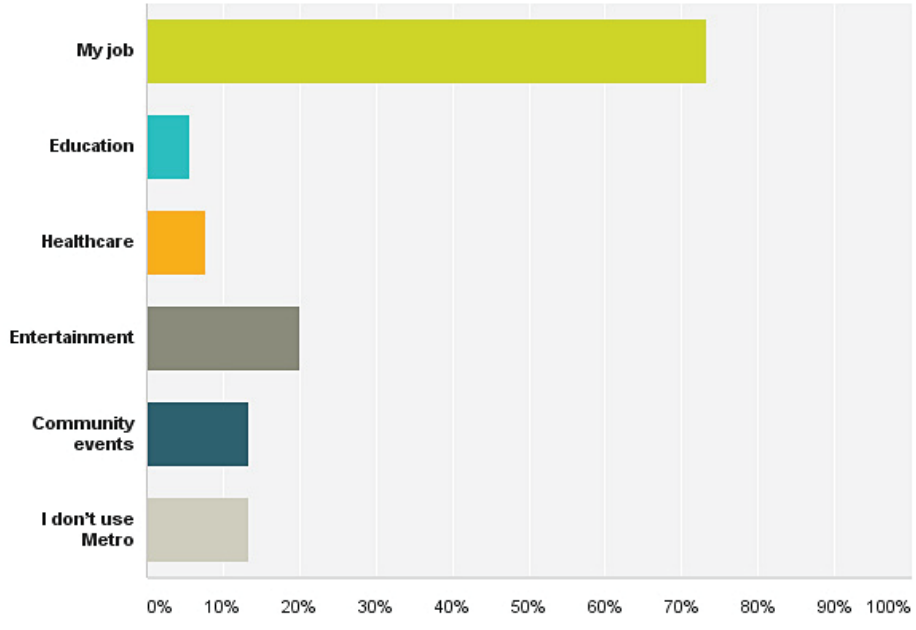
Q3 Which of the following best describes how often you use/ride Metro?

Answered: 90 Skipped: 0



Q4 Fill in the blank -- I primarily ride Metro to:

Answered: 90 Skipped: 0



Q5* Fill in the blank --

I wish Metro would ___.

The one place I wish I could get to on Metro is ___.

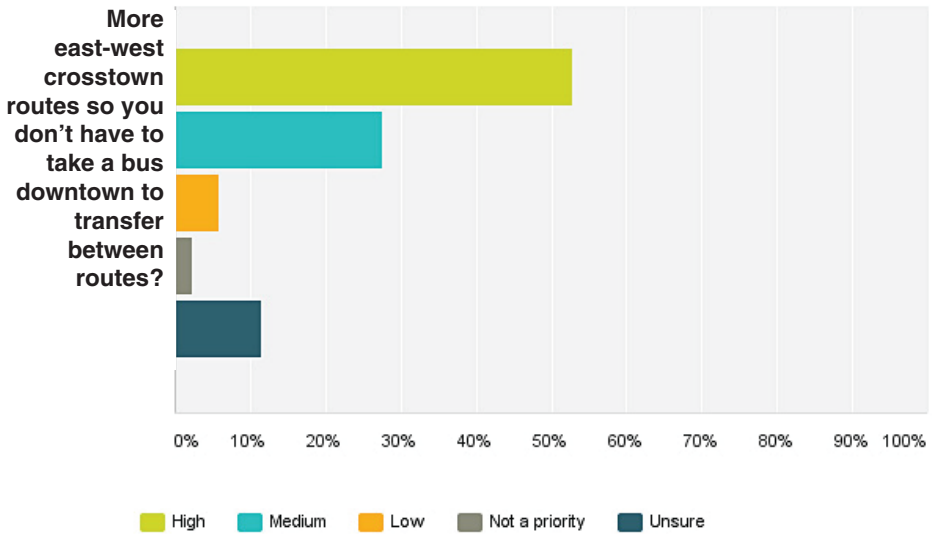
The one thing I would change about Metro is ___.

**See transcribed responses at the end of this section.*

Survey Results

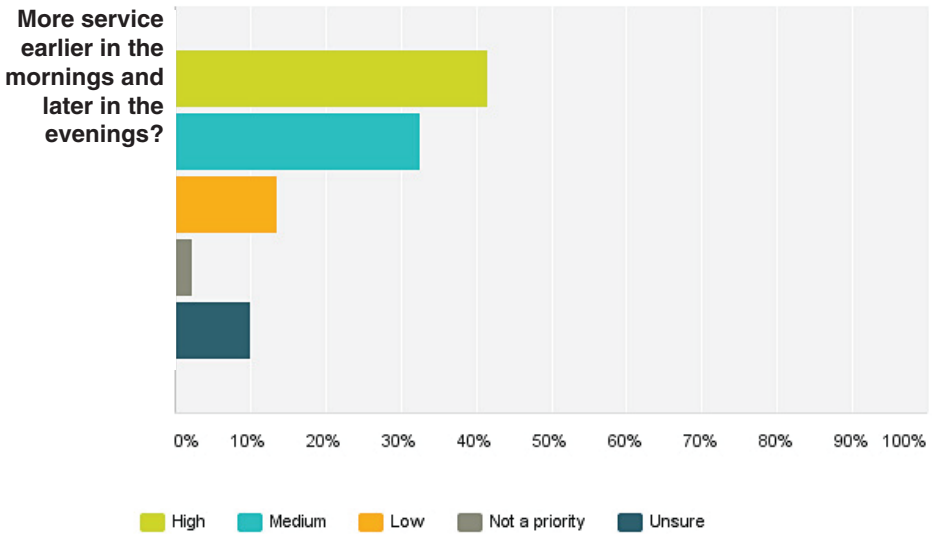
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



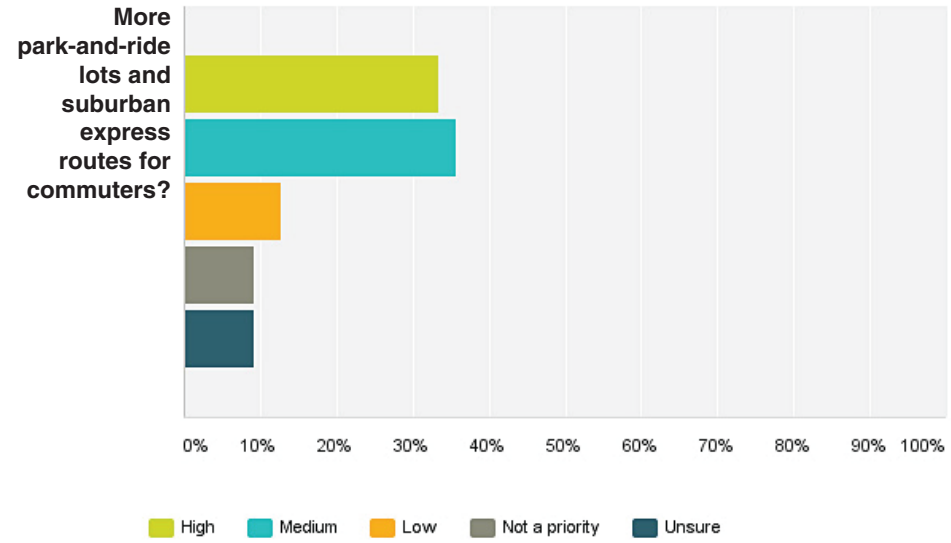
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



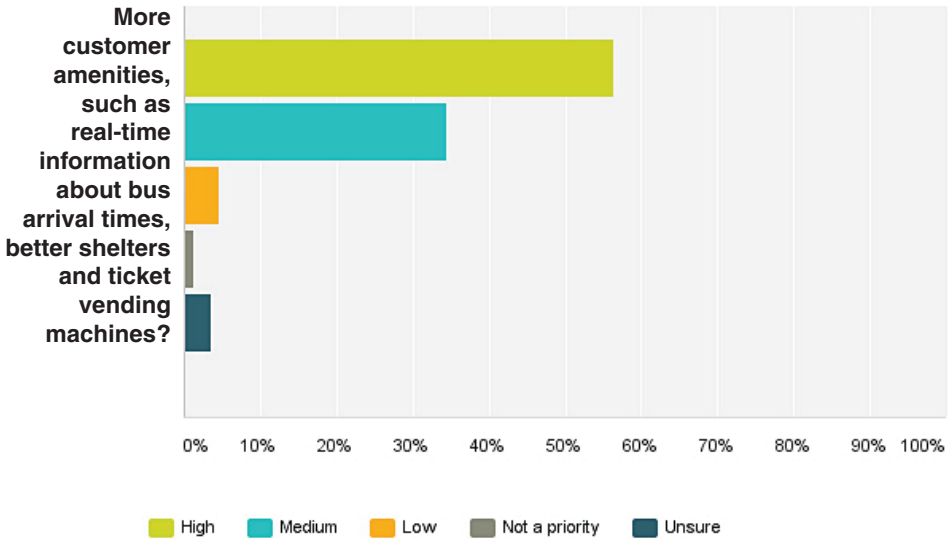
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



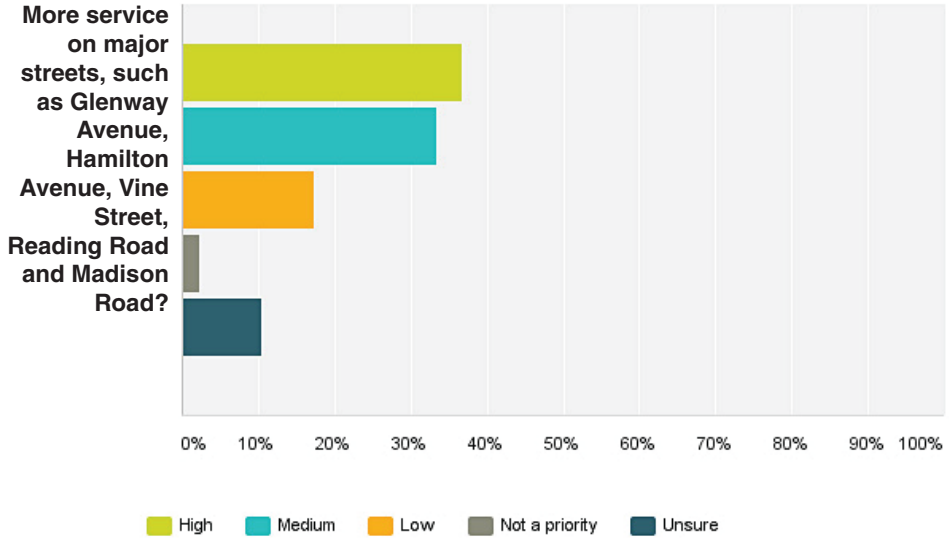
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



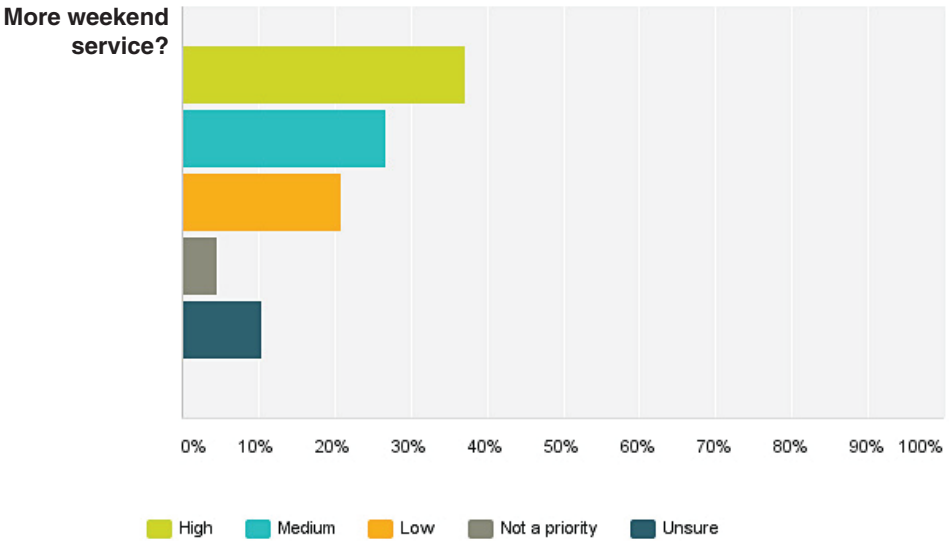
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



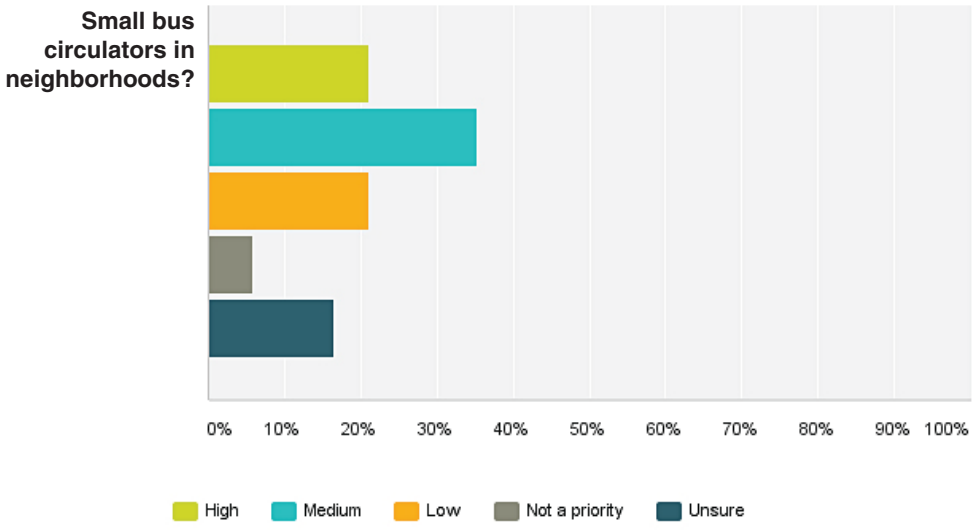
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



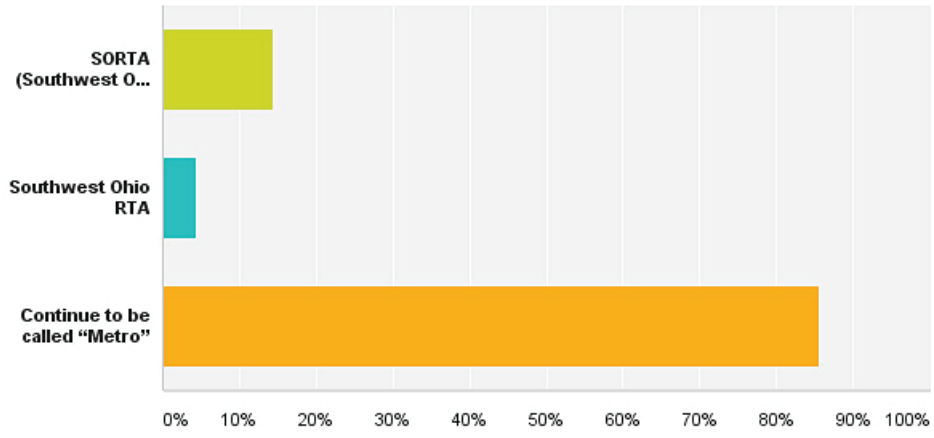
Q6 How much of a priority should Metro place on each of these:

Answered: 90 Skipped: 0



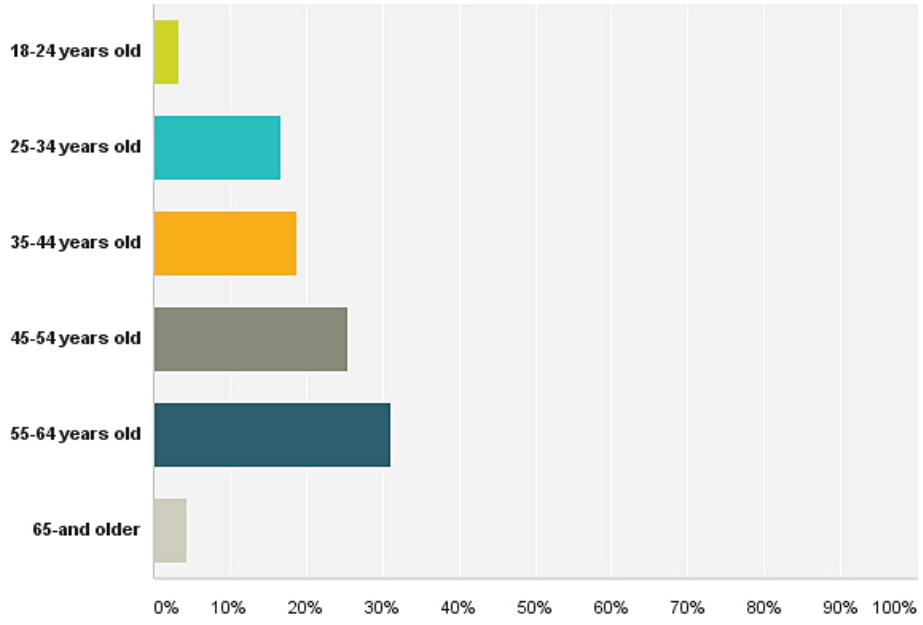
Q7 What name do you think our transit system should use:

Answered: 90 Skipped: 0



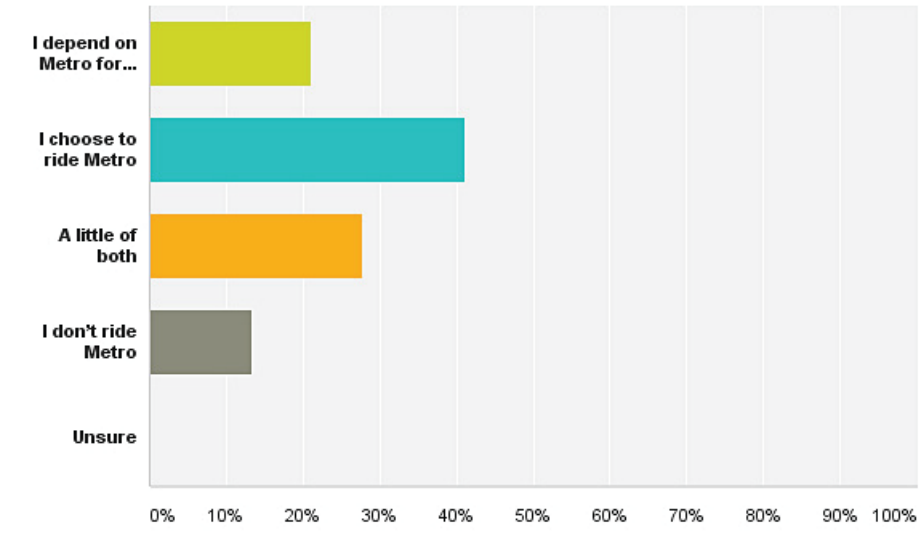
Q8 Please select your age range:

Answered: 90 Skipped: 0



Q9 Would you say that you depend on Metro for transportation, or do you use it by choice?

Answered: 90 Skipped: 0



Hamilton County Annual Tax Revenue Summary (June 2014)

Sales Tax:	Annual Revenue:
0.25%	$34.5 million
0.50%	$69.0 million
0.75%	$103.5 million
1.00%	$138.0 million

SORTA's statutory ability to request:

Up to 1.50%, in 0.24 increments

Sunset (specified years) or ongoing

Property Tax:	Annual Revenue:
1 mill	$15.9 million
2 mills	$31.8 million
3 mills	$47.7 million
4 mills	$63.6 million
5 mills	$79.5 million

1 mill per $100,000 in residential valuation = about $30

SORTA's statutory ability to request:

Up to 5 mills annually

For a period not to exceed 10 years

City earning's tax	Annual Revenue:
1/10th of 1.0%	$17 million
2/10th of 1.0%	$34 million
3/10th of 1.0%	$51 million

SORTA's statutory ability to request:

This is a City of Cincinnati tax

SORTA receives funding under contract with city

City retains administrative and other costs

Ohio and Peer Regional Transit Authorities
2013 Operating Budgets and Local Taxes

City	Ridership	Annual Operating Budget	Local Funding Amount	Source	Sunset or Permanent	Other public funding sources: Fares	State	Federal	Other
Cincinnati	**16,946,008**	**$ 88,812,898**	**$ 42,755,682**	**0.3% of 1% earnings tax, Cincinnati**	**Permanent**	**$ 30,636,710**	**$ 804,380**	**$ 13,765,639**	**$ 2,737,861**
Cleveland	49,206,289	$ 228,933,700	$ 167,486,399	1% sales tax, Cuyahoga County	Permanent	$ 51,178,808	$ -	$ 15,832,337	$ 1,493,047
Columbus	18,749,506	$ 100,094,135	$ 76,918,271	0.25% sales tax, Franklin County 0.25% sales tax, Franklin County	Permanent 10 year	$ 20,431,357	$ 829,592	$ 1,222,940	$ 1,037,015
Dayton	9,742,574	$ 57,965,396	$ 28,803,293	0.5% sales tax, Montgomery County	Permanent	$ 10,082,999	$ -	$ 18,194,939	$ 884,165
Indianapolis	10,526,681	$ 60,171,384	$ 22,047,469	0.7% property tax, Marion County	Permanent	$ 11,354,576	$ 10,543,133	$ 15,614,741	$ 611,465
Louisville	16,869,560	$ 72,584,706	$ 44,031,172	0.2% of 2.2% earnings tax, Jefferson County	Permanent	$ 12,445,528	$ 2,142,693	$ 13,291,636	$ 682,613
Raleigh	6,795,916	$ 28,485,738	$ 15,375,798	General Fund, Raleigh	Permanent	$ 3,762,794	$ 2,630,410	$ 5,292,560	$ 1,424,176

* Other includes, advertising, contract, concessions, and donations

Budget per Rider (rank)	
Cincinnati (4)	**$ 5.24**
Cleveland (5)	$ 4.65
Columbus (3)	$ 5.34
Dayton (1)	$ 5.95
Indianapolis (2)	$ 5.72
Louisville (6)	$ 4.30
Raleigh (7)	$ 4.19

Fares % of Total Budget	
Cincinnati (1)	**34%**
Cleveland (2)	**22%**
Columbus (3)	**20%**
Dayton (5)	**17%**
Indianapolis (4)	**19%**
Louisville (5)	**17%**
Raleigh (7)	**13%**

% Local Funds	
Cincinnati (6)	**48%**
Cleveland (2)	73%
Columbus (1)	77%
Dayton (5)	50%
Indianapolis (7)	37%
Louisville (3)	61%
Raleigh (4)	54%

% State Funds	
Cincinnati (4)	**1%**
Cleveland (5)	**0%**
Columbus (4)	**1%**
Dayton (5)	**0%**
Indianapolis (1)	**18%**
Louisville (3)	**3%**
Raleigh (2)	**9%**

% Federal Funds	
Cincinnati (5)	**15%**
Cleveland (6)	**7%**
Columbus (7)	**1%**
Dayton (1)	**31%**
Indianapolis (2)	**26%**
Louisville (4)	**18%**
Raleigh (3)	**19%**

METRO
Futures Task Force

Key Learnings

1. SORTA's current business model is not sustainable at current funding levels.

For any business, when annual expenditures exceed annual revenues, the long-term viability of the enterprise is at risk; the business model is unsustainable. We believe this to be the case with SORTA given its existing projected revenues and expenditures which could potentially lead to difficult cuts in services to riders, the need to seek fare increases for riders, or both. We want to stress that this appears to be true even without the necessary improvements/changes that must take place to better meet the public transportation needs and desires of the community.

Earnings Tax: In the SORTA 2015 operating budget of approximately $93.6 million, nearly 52% ($48.3 million) of SORTA's annual operating revenue comes from 3/10ths of one percent of the earnings tax collected by the City of Cincinnati dedicated to public transportation services. The balance of SORTA's annual operating revenue comes from fares and other revenues ($32.7 million or 35%), Federal ($10.7 million or 11%) and state sources ($1.9 million or 2%). The City of Cincinnati earnings tax is paid by anyone who lives or works inside the municipality.

According to SORTA officials, projected growth in the City's earnings tax does not match projected growth in the cost of SORTA operations. Indeed, according to CEO and general manager Dwight Ferrell, costs of labor and related business costs alone will not keep pace with projected increases in the earnings tax collected by the City for SORTA.

Peer City Review – Efficiency, Capacity and Impact: In two studies of transit systems in 12 peer cities undertaken by the Economics Center at the University of Cincinnati in 2013[1] and 2014[2] (updated), Metro:

- Was the most operationally efficient (No. 1 in 2013 and 2014),
- Ranked in the middle in service capacity (No. 7 in 2013 and No. 8 in 2014) and
- Received among the lowest amount of state and local funding (No. 10 in 2013 and 2014).

In the same studies, when considering the five peer cities (from among the 12 peer cities) that provide bus-only service, Metro:

- Was the most operationally efficient (No. 1 in 2013 and 2014),
- Had the highest service capacity (No. 1 in 2013 and 2014) and
- Received among the lowest amount of state and local funding (No. 5 in 2013 and No. 4 in 2014)

It is clear to the Task Force that Metro is a responsible steward of public resources. It is just as clear that the high comparable efficiency at which Metro delivers its public transportation services means there will be tremendous challenges to find additional efficiencies or innovations as an offset to increased costs for operations.

Increasing Service Demand: The Task Force also recognizes and accepts that demands for public transportation services in the City of Cincinnati, Hamilton County and the broader region are increasing, not contracting.

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[1] "A Peer City Public Transportation Review: Evaluating Metro's Operational Efficiency, Service Capacity and Fiscal Impact" (October 2013)
[2] "A Peer City Public Transportation Review Update: Evaluating Metro's Operational Efficiency, Service Capacity and Fiscal Impact" (September 2014)

We believe the city-centric, hub-and-spoke model that sustained Metro for many decades is no longer as relevant as it once was:

- Bus service has not followed jobs that have moved outside of the city, primarily into Hamilton County but also into Butler, Warren and Clermont counties.
- As a growing number of Millennials desire to live in the center city and eschew dependence on the automobile, they desire public transportation access to jobs and services outside of the city.
- As Boomers move back to the city center, meaning a two-car lifestyle likely is not desirable, access to jobs, healthcare, retail, etc. via public transportation should be more easily accessible.

The current hub-and-spoke, city-centered public transportation model originally put in place nearly five decades ago does not reflect today's reality in terms of public transportation needs in the region, which would be better met by a county-wide gridded public transportation system including more crosstown service.

After 2017, without increased revenue from public sources, SORTA's only ability to balance its annual operating budget could be to seek fare increases, decrease operating costs through reductions in service or both. This is evidenced by the following:

- **Projected earnings tax revenue will not meet projected cost increases**
- **Metro is among the most efficiently run bus systems in the country (as measured by comparisons against systems in Cincinnati's peer cities), leaving limited room for additional efficiencies or innovations**
- **The market demand for public transportation service is increasing**

In summary, the current business and funding model for SORTA is not sustainable.

2. SORTA is, on a comparative basis with Cincinnati's peer cities, an efficiently run system.

The Task Force has concluded that SORTA is perceived as an efficiently run system and is appreciated by users and the community. This conclusion is informed and supported by objective, third-party studies, industry recognition, public recognition and public opinion surveys.

Peer Cities Evaluation: As referenced in the initial Key Learning, in 2013, SORTA commissioned a study by the Economics Center at the University of Cincinnati to evaluate Metro's operational efficiency, service capacity and fiscal impact compared to transit systems in Cincinnati's 11 peer cities. The Economics Center's study was then updated in 2014.

The peer cities were selected by Agenda 360 in the context of its work comparing the Greater Cincinnati region on multiple issues to other cities.

It is important to note that Metro was No. 1 in terms of operational efficiency. The UC report found (the detailed studies are in the Appendix):

> *"This analysis depicts Metro as an efficient system in a community that is underserved by transit. While Metro efficiently manages its revenues, Metro provides less service than its peers that provide multiple modes of transportation, and more service than its peers that provide bus-only service. Under this operational efficiency metric it earns the most revenue for every dollar of expenditures among bus-only cities and multi-modal transit systems. In this service capacity metric, Metro only outperforms the bus-only peer cities. The top service-providing cities in the peer comparison group are all pursuing Bus Rapid Transit (BRT) as a mode option. In addition, they are exploring new transit options with plans and projects including commuter rail, heavy rail, light rail, and streetcar.*

The bottom line:
Should the Cincinnati community decide to expand public transportation services, Metro's demonstrated operational efficiency should position it favorably to receive and efficiently manage additional funds. Due to Metro's current dependency on fare revenues, expanding services may require additional local, state, or federal funds."[3]

Financial Reporting Honors: In December 2015, SORTA announced that it had again received the highest recognition in the area of governmental accounting and financial reporting from the Government Finance Officers Association of the United States and Canada (GFOA).

SORTA has received the "Certificate of Achievement for Excellence in Financial Reporting" for its Comprehensive Annual Financial Report (CAFR) for 24 consecutive years.

In order to be awarded this certificate, a government unit must meet the high standards of the program, including demonstrating a constructive "spirit of full disclosure" to clearly communicate its financial story and motivate potential users and user groups to read the CAFR.

Public Opinion Studies: In public opinion studies conducted by Fallon Research in 2010 and 2014[4], Metro received high and consistent recognition overall and from frequent users of the system.

The question asked each year was, "Generally speaking, how would you rate the job Metro does providing bus and public transit services?" The responses each year were:

- 2010 (overall): 58% (6% excellent and 52% good) and 23% fair for an overall positive rating of 81%.
- 2014 (overall): 58% (9% excellent and 49% good) and 16% fair for an overall positive rating of 74%.
- 2014 (frequent riders): 70% (33% excellent and 37% good) and 26% fair for an overall positive rating of 96%.

Metro also received high ratings in a similar question asked in the Task Force's public opinion survey. Although this quantitative survey was unscientific, its results were informative and underscored the findings from the scientific research noted above:

How would you rate the job Metro does providing bus and public transportation services?

- 57.2% (15.7% excellent and 41.5% good) and 28.1% fair for an overall positive rating of 85.3%.

3. SORTA understands and is committed to community engagement, transparency, outreach and public input.

Tab 4 includes detailed information regarding the Task Force's extensive community engagement activities in the context of our work, as well as additional information regarding Metro's impressive and consistent commitment to seeking public input and operating with transparency.

Task Force Efforts: The Task Force found that our community engagement efforts built upon Metro's ongoing commitment to community engagement, public input and transparency.

Metro's ongoing commitment was further underscored by its staff, which took an active role in the Task Force's community engagement activities in the planning and execution of 12 listening sessions and in the design and delivery of our corresponding public opinion survey. Further, members of Metro's communications and planning departments staffed each listening session, facilitating activities at the "stations" that participants visited in order to provide input on several topics relating to Metro and public transportation. These staff members also answered questions that participants had about the bus service and other related transportation issues. Mr. Ferrell played an active role, participating in a Q&A session with attendees at the Millennial listening session and during a real-time, online chat on Cincinnati.com alongside SORTA Board Chairman Jason Dunn.

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[3] A Peer City Public Transportation Review: Evaluating Metro's Operational Efficiency, Service Capacity and Fiscal Impact." Page 2. (October 2013)
[4] See Appendix for 2014 survey results

The Metro communications staff implemented online efforts to solicit input from the community as well. The task force survey had a prominent place on Metro's homepage, and the staff also published several social media posts that both linked back to the survey and encouraged community members to complete it. Metro's social media channels and e-newsletter also promoted the listening sessions.

Our community engagement efforts resulted in more than 1,200 completed surveys and input from more than 350 participants at listening sessions.

Previous Metro Efforts - Community Engagement/Public Input: Metro planned and executed several stakeholder interviews and meetings, community education initiatives and public meetings from 2010 - 2015 alone, as part of its development of and public involvement in the go*FORWARD vision.

- **Stakeholder Interviews and Meetings–** Metro met with more than 70 stakeholders who represented riders/potential riders and/or had constituents who are riders/potential riders. Their discussions were wide-ranging and included a number of issues, including community priorities, traffic congestion, impressions of Metro, ridership data/transit usage, demand for expanded transit, job connectivity and how Metro can better communicate with these audience segments. In 2014, prior to the hiring of Mr. Ferrell, these discussions also covered what qualities stakeholders wanted in Metro's new CEO.

- **Community Education–** Metro employees are regularly out in the community at high-traffic locations and events to educate attendees about Metro's services, to engage with the community and to have a consistent presence in the community. Committed to community education, Metro seeks opportunities to educate specific audience segments when a need arises and even employs an outreach and sustainability manager whose focus is to meet with current and potential business partners and educate their employees about Metro and how to ride and also to form partnerships with other community organizations.

- **Public Meetings–** Metro conducted 14 public meetings throughout the area in 2012 to educate the community and assess its opinions on how it wanted Metro to go forward. This feedback helped to ultimately inform Metro's 2023 Transit Plan. In 2013, just prior to the plan's short-term recommendations going into effect, Metro conducted meetings to attain additional input and to educate the community about the upcoming improvements.

Previous Metro Efforts - Research: Metro is committed to learning how to better serve the community and to assess its own performance. Several studies were completed from 2010 - 2015 alone.

- **Quantitative/Qualitative–** Metro-commissioned studies collected feedback from residents on several issues, including community priorities, traffic congestion, impressions of Metro, ridership data/transit usage, demand for expanded transit and job connectivity. Ten such studies resulted in feedback from more than 12,550 Hamilton County residents during this time frame.

- **Community Impact/Peer City Comparison Studies–** The Economics Center at the University of Cincinnati undertook four studies since 2010 to assess the system's community impact and, in two studies, performance as compared with the transit systems of Cincinnati's 11 peer cities (as identified by Agenda 360). These studies included:
  - The Community Impacts of Metro, 2010
  - A Peer City Public Transportation Review, 2013
  - A Peer City Public Transportation Review Update, 2014
  - The Community Impact and Related Benefits of Metro, 2015 (which was undertaken to support the efforts of the Task Force)

It also is worth noting that Metro's communications team has a robust social media program and regularly engages with its more than 3,700 Facebook fans and more than 9,700 Twitter followers by providing helpful content and responding to consumers' questions and comments.

4. SORTA's public transportation service is an important factor in regional talent attraction and retention, especially for Millennials, and for the overall competitiveness of our region.

If there was a consistent issue that resonated throughout the five-month period of the Task Force's work, it was the impact of Millennials (or the millennial generation) on public transit in our region.

According to the Pew Research Center, the "millennial generation" includes people born between the years of 1981 to 1997.[5]

We believe the following paragraph (identified as a "Key Insight") captures our collective perspective. It is from "The Connected Region: A 2015 Regional Indicators Report – Transit," a report issued last Fall by Agenda 360, Skyward, the Urban Land Institute and the Cincinnati USA Regional Chamber:

> *"Nationwide, Millennials are taking fewer trips, shorter trips and a larger share of trips by modes other than driving. This decline was mostly due to the 2008 recession, but the fact that many Millennials have not returned to cars with the economic recovery may indicate that we are experiencing a new normal."* [6]

In that same report, another "Key Insight" clarified for us that the limited reach of Metro's current service offerings, especially as it pertains to bus service from the urban core into the suburbs of Hamilton County, indicates that Millennials are not utilizing public transportation as much here as in other regions of our country:

> *"Locally, Millennials (18-34) are still driving at a high rate, but growth of Millennial drivers has been slowing along with national trends. Between 2000 and 2013, all peer regions – except for Cincinnati – saw a drop in the percentage of Millennials commuting by car. It's hard to know whether Cincinnati's patterns are the result of choice or lack of options."* [7]

Tomorrow's workforce, the talented young professionals now in college or now engaged in their initial career choices, are more inclined to seek communities with developed urban centers, walkable communities and easy, intuitive and significant public transit systems. Their choices are many throughout this country and include the Cincinnati region's peer cities.

We were concerned by various findings shared in "The Connected Region." Key among them were that Cincinnati is:

- Ranked **7 of 12 in workforce commuting by transit** (workers 16 and older, ACS 2014, 1-year estimate)
- Ranked **7 of 12 in access to jobs using transit** (Brookings Institution, Where the Jobs Are: Employer Access to Labor by Transit, 2012)
- **Ranked 9 of 12 in transit use per capita** (average number of trips per year per person as shared by the National Transit Database, 2011-2013 average and ACS 2012 population estimates)
- **Ranked last (12 of 12) in share of jobs in neighborhoods with transit** (Brookings Institution, Where the Jobs Are: Employer Access to Labor by Transit, 2012)

Millennials' desire for healthy public transportation services was reinforced by the feedback attained at our Millennial listening session. Attendees at this session were very supportive of Metro and of public transportation but noted challenges that they have experienced as they've attempted to begin using the system (see Tab 4).

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5 http://www.pewresearch.org/fact-tank/2015/01/16/this-year-millennials-will-overtake-baby-boomers/
6 "The Connected Region: A 2015 Regional Indicators Report–Transit": Key Insight: p. 2
7 "The Connected Region: A 2015 Regional Indicators Report–Transit": Key Insight: p. 2

We were further concerned by the findings in "The Community Impact and Related Benefits of Metro," a study commissioned by SORTA to the Economics Center at the University of Cincinnati. Key findings included:

- There are over 50,000 jobs in healthcare that do not have access to Metro service within a quarter mile of a work establishment.
- There are about 25,000 manufacturing jobs that are more than a half mile from a Metro route.
- More than 70% of all business establishments in Hamilton County are within ½ mile of a Metro route, although Metro may not provide adequate levels of service to access some of the jobs.
- Metro potentially reduces the impact of parking congestion downtown by about 8,500 spaces, or approximately 25%.
- The top five fastest growing zip codes in Hamilton County in terms of job growth from 2009-2014 are all within the service areas of Metro's top five routes.
- 3.7% of potential commuters working within ¼ mile of a Metro route use the service – this compares favorably to Columbus at 2.3%.
- Metro supports one job per $5,900 of expenditures - $2,700 of which is locally subsidized by City of Cincinnati's earnings tax, with the balance from fare revenue, federal and state funding, and other sources.

Further, in the University of Minnesota's "Access Across America: Transit 2014" study, which examined the accessibility to jobs by transit in 46 of the 50 largest (by population) metropolitan areas in the United States, it was found that, compared to Cincinnati's 11 peer cities, the Cincinnati region ranked No. 12 (all peer cities) and No. 5 (bus-only peer cities) in providing the least amount of service connecting people to jobs by public transit.

In a society that increasingly desires a car-less lifestyle (particularly Millennials), such poor job connectivity provided by the region's largest public transportation authority is a detriment in attracting and retaining talent to the Cincinnati region.

5. SORTA embraces regional considerations regarding public transportation even though the vast majority of service it now provides is limited to Hamilton County, and its primary current public funding source is from a City of Cincinnati earnings tax.

There was substantial discussion among Task Force members about how a community's public transportation service, or services, should be considered from a regional perspective. This reflects the reality that where people live and work and the places from which they receive healthcare and other services, including education, are not necessarily restricted to one political jurisdiction. Rather, the Task Force understands and accepts that life crosses city, township, county and state lines. It makes intuitive sense that public transit services should as well.

The Task Force also recognizes another reality. Namely, that public funding for transportation services in our region is typically restricted by political jurisdiction. For instance, public funds supporting services provided by the Transit Authority of Northern Kentucky (TANK) come from Boone, Campbell and Kenton counties, and public funding for the Clermont Transportation Connection (CTC) comes from Clermont County.

So it is with SORTA. The primary source of public revenue supporting SORTA comes from a City of Cincinnati earnings tax despite the fact that it is the Southwest Ohio Regional Transit Authority (some contract revenue is provided for certain bus services provided outside of Hamilton County).

In this regard, the Task Force believes it is important for SORTA to continue to be an active participant in issues related to transportation services within the Greater Cincinnati region.

When it comes to the bus and Access services it provides, SORTA must, as it now does, be directly engaged with the City of Cincinnati and Hamilton County which, by contract, appoint the SORTA Board of Trustees and, in the City of Cincinnati's case, contract with SORTA for transportation services funded by a portion of the earnings tax dedicated to transportation it collects from people who live or work in the City.

6. SORTA has embraced its role as operator of the new streetcar and is integrating that service with its bus services while maintaining separation and segregation of public funds used for its operations from streetcar operating funds.

Very little time was spent by the Task Force discussing the new Cincinnati Streetcar. Our critical focus was on the bus services provided by SORTA.

The Task Force realizes the streetcar is a political reality and that SORTA holds the contract with the City of Cincinnati to operate this new asset once construction of the streetcar line is completed and the streetcars are delivered and tested.

Metro's demonstrated experience and success at efficiently managing the largest bus system in the region speak to its ability to successfully and efficiently operate the new streetcar.

We believe, as does SORTA, that the bus system and streetcar should be operationally integrated as is appropriate for customer service reasons and to maximize operational efficiencies.

Importantly, SORTA should maintain its current commitment to ensure that the City of Cincinnati earnings tax revenue generated for bus operations is NOT used for streetcar operations. It has repeatedly assured the community that will be the case, and we are confident in that pledge.

Recommendations

1. SORTA should continue its balanced scorecard strategic planning efforts and future decision-making should be based, whenever possible, on metrics and measurable outcomes.

Metro CEO and General Manager Dwight Ferrell briefed the Task Force on SORTA's recently initiated "balanced scorecard" strategic planning initiative. We were impressed.

For those not familiar with a "balanced scorecard" approach to strategic planning, it is a methodological approach designed to align the mission and vision of an organization with its key strategic goals in a manner that is quantifiable and measureable. Here is how it is described on the website of the Balanced Scorecard Institute:

> *"The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals."* [8]

SORTA is to be commended for challenging its organization to align its business operations with its overall strategic goals and to publicly hold itself accountable by establishing metrics as a measure of performance.

The Task Force views that as yet another indication of SORTA's commitment to transparency as mentioned in Key Learning No. 3.

Indeed, we appreciated Mr. Ferrell's presentation. We understand that the following Vision and Mission were recently approved by the SORTA Board of Trustees:

- **Vision**: 20 million rides by 2021 (an increase from the 17 million rides/year SORTA currently provides)
- **Mission:** Regional transportation connecting people and places, driving economic growth and expanding quality of life.

We also know there is much more to come from this "balanced scorecard" strategic planning process undertaken by SORTA.

We fully support and encourage the continuation of this effort and encourage SORTA to continue this disciplined and comprehensive approach to organizational alignment and improvement.

2. SORTA should continue to seek innovative ways to expand services throughout Hamilton County and implement key elements of its go*FORWARD vision, with particular emphasis on connecting people to jobs and services.

At our initial meeting, the Task Force was briefed on the SORTA go*FORWARD vision for public transportation services in Hamilton County. While elements of the go*FORWARD vision will require more resources than SORTA has available through its current funding sources, the organization is continuing to seek ways to innovate to provide better service. Without hesitation, the Task Force commends this ongoing effort.

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[8] "A Peer City Public Transportation Review: Evaluating Metro's Operational Efficiency, Service Capacity and Fiscal Impact" (October 2013)

Throughout many of the Task Force meetings, there was discussion about the important role Metro must play to connect area residents to jobs, as well as to social services, healthcare, education, retail and entertainment. There was a perception among Task Force members, later substantiated by research undertaken by the Economics Center at the University of Cincinnati and presented to the Task Force at its meeting on November 5, 2015, that public transportation could do a better job of connecting people to jobs. This was reinforced by data included in "The Connected Region: A 2015 Regional Indicators Report" issued by Agenda 360, Skyward, the Urban Land Institute and the Cincinnati USA Regional Chamber.

While the Task Force understands the value of public transportation to connect people to much-needed services, it also believes that public transportation is critical to a community's economic development and connecting people to jobs.

"The Community Impact and Related Benefits of Metro (Economics Center at the University of Cincinnati):" The key findings of this study (included in the Appendix) confirmed the perception of the Task Force – public transportation did not adequately connect people within this region to jobs.

Key findings included:

- There are over 50,000 jobs in healthcare that do not have access to Metro service within a quarter mile of a work establishment.
- There are about 25,000 manufacturing jobs that are more than a half mile from a Metro route.
- More than 70% of all business establishments in Hamilton County are within ½ mile of a Metro route, although Metro may not provide adequate levels of service to access some of the jobs.
- Metro potentially reduces the impact of parking congestion downtown by about 8,500 spaces, or approximately 25%.
- The top five fastest growing zip codes in Hamilton County in terms of job growth from 2009-2014 are all within the service areas of Metro's top five routes.
- 3.7% of potential commuters working within ¼ mile of a Metro route use the service – this compares favorably to Columbus at 2.3%.
- Metro supports one job per $5,900 of expenditures - $2,700 of which is locally subsidized by City of Cincinnati's earnings tax, with the balance from fare revenue, federal and state funding, and other sources.

"The Connected Region: A 2015 Regional Indicators Report – Transit:" This report (included in the Appendix) further confirmed what Task Force members suspected – public transportation in our region must do better connecting people to jobs. These facts comparing our region to 11 other peer cities speak for themselves:

- We were **ranked 7 of 12 in workforce commuting by transit** (workers 16 and older, ACS 2014, 1-year estimate)
- We were **ranked 7 of 12 in access to jobs using transit** (Brookings Institution, Where the Jobs Are: Employer Access to Labor by Transit, 2012)
- We were **ranked last (12 of 12) in share of jobs in neighborhoods with transit** (Brookings Institution, Where the Jobs Are: Employer Access to Labor by Transit, 2012)

3. SORTA's long-term sustainability and future growth require permanent public funding through a sales tax that extends to the borders of Hamilton County or beyond. An expanded funding structure may require changes in SORTA's governance structure as well.

SORTA was created as a regional transit authority in 1968, 48 years ago. In 1972, Cincinnati voters amended the City Charter to dedicate 3/10ths of one-percent of the city's earnings tax for transportation purposes. This went into effect in 1973 and provided funding for bus operations under the City/SORTA agreement. Despite repeated efforts, the current method for providing public funds to support public transportation in Cincinnati and Hamilton County has not changed.

Now, nearly 50 years later, and as referenced in other parts of this Task Force report, it is obvious that:

- SORTA's business model is not sustainable at the present funding levels (see Key Learning No. 1).
- Cincinnati and Hamilton County are underserved by transit (see Key Learning No. 2) and SORTA's city-centric, hub-and-spoke system is not meeting the public transportation needs of our region.
- SORTA is non-competitive with its peer cities in connecting riders to jobs and, therefore, is not supporting regional economic development (see Key Learning No. 4).
- SORTA is non-competitive with peer cities when considering public funding as an element of its annual operating budget (see Key Learning No. 1).
- SORTA's reliance on fare revenues (35% of its annual operating budget) is more than any peer city measured and restricts the organization's ability to innovate and improve services (see Key Learning No. 1).

In that regard, the Task Force believes that:

- Public transportation services in this region should be funded with a countywide (Hamilton County) sales tax rather than a City of Cincinnati earnings tax.
- Such a tax should be permanent.
- If such a countywide tax is implemented, appointing authority for the majority of the SORTA Board should rest with the Board of Hamilton County Commissioners.

Countywide Sales Tax:

With a public funding source for nearly the past 50 years being city-centric, as per the City/SORTA agreement, it is little surprise that the services developed and offered are, therefore, city-centric. If funded countywide, the Task Force is hopeful the system will more easily adjust to meet the needs of the region, especially for riders relying on and choosing transit to get to and from work.

It was not the purpose of this Task Force to consider or recommend the level of public funding required to meet the future needs of public transportation in this region. This is the province of the SORTA Board. There certainly may be a sentiment among the Task Force that more public funding is required as supported by any objective review of data and numerous studies referenced throughout this report. Just as certainly, there was no discussion that less public funding should be provided. It is, however, the recommendation of this Task Force to change the current public funding mechanism from a city earnings tax to a countywide sales tax.

We believe a county-wide sales tax is the fairest revenue source for public transportation. With a recommendation to increase local emphasis on connecting people to jobs through public transportation, it makes sense that a public funding source should as directly as possible relate to commerce within the county.

Just as important, nearly half (47%) of the revenue generated by a county-wide sales tax comes from people who live outside the county yet purchase goods and services inside the county, including in the City of Cincinnati.
A study commissioned by the Hamilton County Cultural Facilities Task Force and published in June 2014 by the Economics Center at the University of Cincinnati concluded that:

> "When the figure for local spending by Hamilton County residents ($7,444,764,000) is divided by the total Hamilton County taxable sales ($14,027,287,713), 53 percent of Hamilton County sales tax is paid by County residents. The remaining 47 percent of Hamilton County sales taxes are paid by other consumers."

It is important to note that, according to Ohio law, sales tax can be collected in ¼-cent (0.25 percent) increments up to a certain statutory limit and for a specified number of years or on an ongoing basis. SORTA's statutory ability to collect sales tax is limited to 1½-cents (1.50 percent). Based upon the 2014 Hamilton County Annual Tax Summary, each 0.25 percent of sales tax collected generates approximately $34.5 million in annual revenue.

While not a formal recommendation, the Task Force cannot imagine a scenario in which less public funding is provided for public transportation. Therefore, the minimum increment of an amount of sales tax that should be dedicated to public transportation should be .50 percent, which would generate approximately $69 million based on 2014 data. Hypothetically, in 2015 dollars, this would replace the approximately $44 million in public funding SORTA receives in earnings tax revenue (City of Cincinnati) with approximately $69 million in sales tax revenue (Hamilton County). If this switch in public revenue had occurred, SORTA's 2015 annual operating budget of approximately $94 million would have been increased by $25 million.

Public Funding Should Be Permanent:

Without question, public transportation is a critical component in any contemporary community.
Public entities involved in large, long-term and costly infrastructure improvements often pay for them by issuing debt secured by ongoing revenue streams such as permanent taxes and fees.

While the magnitude of long-term costs for improvements to SORTA public transportation services may compare to costs associated with improvements for public utilities, its current funding source (contract with the City of Cincinnati for 3/10th of one percent of the collected earnings tax revenue), or even a time-limited sales tax, does not enable SORTA to prudently issue debt to fund improvements to their system.

In that regard, the Task Force believes public funding for public transportation services throughout Hamilton County should be provided on an ongoing basis and not be subject to a specific and limited time period.

Governance Should Align with Resources Provided:

The most recent amendment (No. 2008-66) to the 1968 Resolution establishing SORTA includes the following provision:

> *(Section 9. d.) ... "Notwithstanding this analysis, if at any time there exists a jurisdiction this is contributing funding to the Transit System SORTA of greater than 50% of the total, then in such a situation said jurisdiction shall always be entitled to appoint a majority of the Board and the "At Large" Board seats shall be adjusted in such a manner to effect such an outcome."*

The Task Force agrees with, and would not recommend any changes to, this requirement in the existing agreement between the City of Cincinnati and Hamilton County regarding SORTA. Simply put – the majority of appointments to the SORTA Board of Trustees should be made by the Board of Hamilton County Commissioners.

4. If funded countywide, SORTA should collaborate with the Mayor, Cincinnati City Council and the citizens of Cincinnati to eliminate all of the portion of the city earnings tax that it now receives.

The Task Force believes that if the citizens of Hamilton County agree to implement a sales tax to support public transportation, the people who live or work in the City of Cincinnati and who are now subject to an earnings tax of 3/10ths of one percent for public transportation, should expect relief from all or some of the existing tax burden.

The Task Force understands this is complex. We further understand the complexity is both legal and political. The timing for the implementation of a new tax (countywide sales tax) must, it seems to the Task Force, be contingent upon the non-collection or elimination of all of the component city earnings tax now dedicated to public transportation.

How this potential tax shift can or will occur should be decided by SORTA, city and county elected officials, lawyers, and ultimately, the voters in Hamilton County and the City of Cincinnati.

5. SORTA, per its statutory authority and in consultation with City and County leaders, should decide if and when to present Hamilton County voters with a ballot issue for a sales tax increase for permanent public transportation funding.

According to Ohio Law enabling SORTA's establishment in 1968, SORTA has the statutory authority to present certain tax issues directly to the voters in its jurisdiction (in this case, Hamilton County).

The Task Force accepted as its Mission:

> *To propose ways to improve transit to better serve the community and connect more people to jobs, education, healthcare and community opportunities.*

The Task Force believes that implementation of its recommendations will require additional public discussion and careful consideration requiring significant cooperation and collaboration among Cincinnati and Hamilton County elected officials. SORTA must also assume a responsibility to encourage, support and engage, as appropriate, in activities as may be required to achieve the meaningful changes in public transportation this community needs.

At the same time, Cincinnati and Hamilton County elected officials should acknowledge SORTA's authority to present voters with tax issues for public transportation and not seek to control or restrict SORTA's appropriate consideration and exploration.

6. SORTA must clearly communicate that its current business model is unsustainable and, without additional funding in the future, it could be forced to seek fare increases, reduce services, or both after FY2017.

The Task Force believes SORTA has an obligation to communicate to both Cincinnati and Hamilton County elected officials, as well as the residents of Cincinnati and Hamilton County, the dire future budget situation confronting the organization.

As discussed in our Key Learnings (see Key Learning No. 1), SORTA's current business model is unsustainable. From its current revenue source that cannot keep pace with increased costs; the demonstrated efficiency, capacity and impact of its current operations; and the increased demand for service based on changing demographics and needs for public transportation, something must change.

In the absence of increased public funding and Metro's increasingly limited ability to achieve improvements through innovation, it is quite clear to the Task Force that the only foreseeable changes are service reductions, seeking fare increases or some combination of both. None are acceptable if Cincinnati and Hamilton County are to continue to be competitive in a global economy - whether attracting and retaining employees within the region or addressing the needs of those who rely on public transportation to access healthcare, education or other needed services.

For a community that relishes the ability to do more with less, the Task Force believes SORTA has proven its ability to be a good steward of public resources.

We further believe the community in the future, while expecting the same efficiency and innovation, combined with the same commitment to transparency, community engagement and public input that is Metro's trademark, deserves to be told the truth. And, without additional resources, that truth for Cincinnati and Hamilton County residents will be challenging and difficult.

Next Steps

1. The SORTA Executive Committee should brief the SORTA Board on the Task Force report.

2. Upon receipt of the report, it should be made public via Metro's website and shared with employees, elected officials and local media organizations. It should also be promoted on Metro's social media channels.

3. SORTA should arrange briefings on the Task Force report for the Mayor, City Council, City Manager, County Administrator and Board of Hamilton County Commissioners and others as it deems appropriate.

4. SORTA should consider the Task Force report in the context of its ongoing strategic planning activities.

METRO

METRO Futures Task Force
Meeting 1:
Introduction to Metro Today

What is SORTA?

Political subdivision of the State of Ohio (regional transit authority)

Created by Hamilton County

(6 board appointments)

Local funds from City of Cincinnati earnings tax

(7 board appointments)

Historical perspective

Southwest Ohio Regional Transit Authority (SORTA) was created by Hamilton County in 1968 as a regional transit authority in Ohio

Metro began operating in August 1973

Funding initiatives:

- 1971 Special Election: 0.5 mill Hamilton County property tax
- **1972 General Election: 0.3% City of Cincinnati earnings tax**
- 1979 General Election: 1% Hamilton County sales and use tax
- 1980 Special Election: 1% Hamilton County sales and use tax
- 2002 General Election: 0.5% Hamilton County sales and use tax

How is SORTA funded?

City of Cincinnati earnings tax since 1973:

- 3/10th of 1% of the earnings tax collected from people who work in the city
- Intended as a temporary solution to begin Metro service
- Contract with the City

SORTA's Vision and Mission

Vision

- A regional system connecting our community

Mission

- To connect people and places, support economic development and improve quality of life in the region

SORTA Board of Trustees

Jason Dunn, Chair*
Cincinnati USA Convention
& Visitors Bureau

Ken Reed, Vice Chair+
Ohio Transit Risk Pool

Maurice Brown – AFSCME Local 250*
Brendon Cull – Cincinnati Chamber*
Gregg Hothem – Venture One Constr.+
Kreg Keesee – Sun Chemical*
Mary Miller – Jancoa*
Ron Mosby – Journey to Liberty+

Jack Painter – Chemed Corp.+
Gwen Robinson – CHCCAA*
Dan St. Charles – DAS Solutions+
Karl Schultz – Clermont County+
Brad Thomas – Manley Burke*

* Appointed by City of Cincinnati
+ Appointed by Hamilton County

Services SORTA provides

Metro fixed-route transit service (bus):

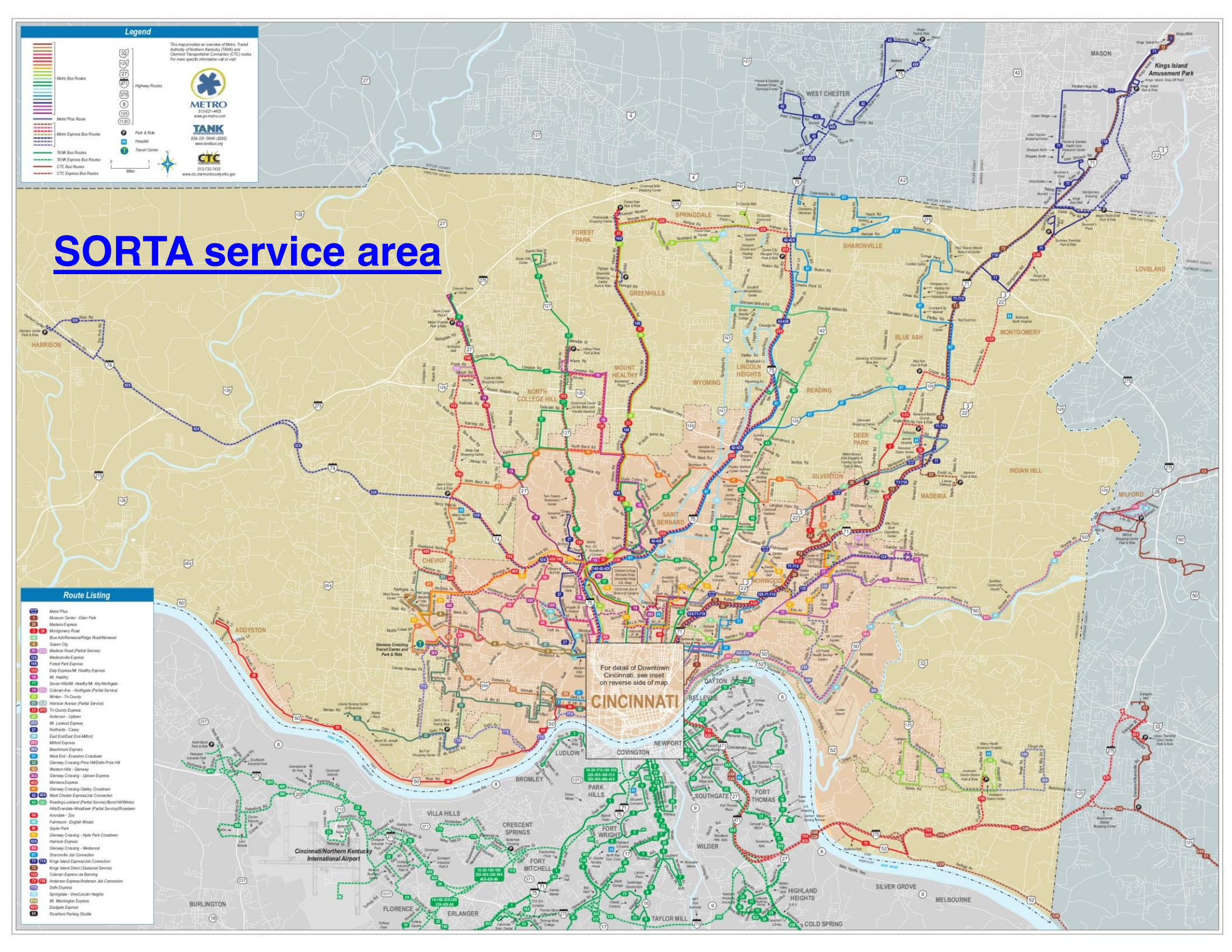
- 85% of service within City of Cincinnati
- Some service within Hamilton County
- Contracts with Butler, Clermont, Warren counties for express services
- Service contract with Cincinnati Public Schools

Access paratransit service:

- Shared-ride service for people whose disabilities prevent riding Metro
- 190,000 rides per year in Hamilton County

Cincinnati Streetcar:

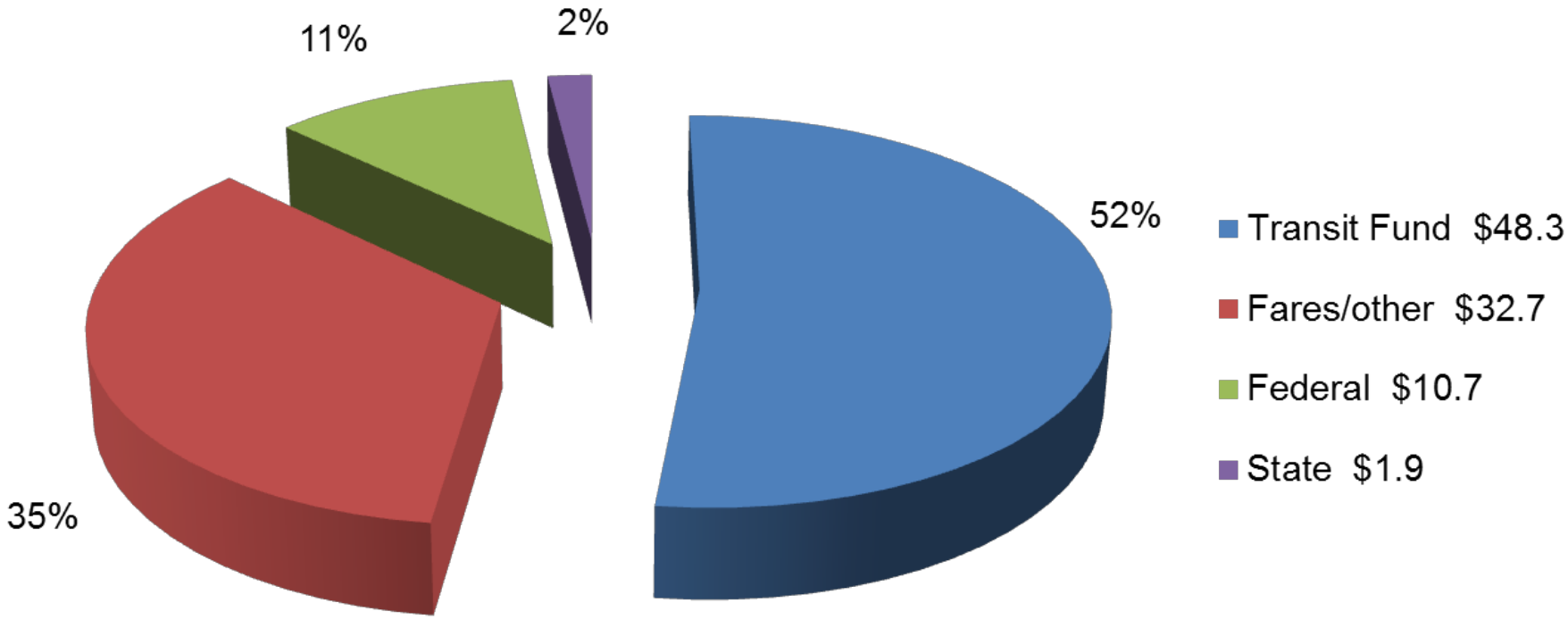
- Operating and maintenance contract with City of Cincinnati


SORTA service area
Legend
Metro Bus Routes
Highway Routes
Metro*Plus Route
Metro Express Bus Routes
TANK Bus Routes
TANK Express Bus Routes
CTC Bus Routes
CTC Express Bus Routes
Park & Ride
Hospital
Transit Center
Miles
This map provides an overview of Metro, Transit Authority of Northern Kentucky (TANK) and Clermont Transportation Connection (CTC) routes. For more specific information call or visit:
METRO
513-621-4455
www.go-metro.com
TANK
859-331-TANK (8265)
www.tankbus.org
CTC
513-732-7433
www.ctc.clermontcountyohio.gov
Route Listing
Metro*Plus
Museum Center - Eden Park
Madeira Express
Montgomery Road
Blue Ash/Kenwood/Ridge Road/Norwood
Queen City
Madison Road (Partial Service)
Madisonville Express
Forest Park Express
Daily Express/Mt. Healthy Express
Mt. Healthy
Seven Hills/Mt. Healthy/Mt. Airy/Northgate
Colerain Ave. - Northgate (Partial Service)
Winton - Tri-County
Harrison Avenue (Partial Service)
Tri-County Express
Anderson - Uptown
Mt. Lookout Express
Northside - Casey
East End/East End-Milford
Milford Express
Beechmont Express
West End - Evanston Crosstown
Glenway Crossing-Price Hill/Delhi-Price Hill
Western Hills - Glenway
Glenway Crossing - Uptown Express
Montana Express
Glenway Crossing-Oakley Crosstown
West Chester Express/Job Connection
Reading-Lockland (Partial Service)/Bond Hill/Winton Hills/Evendale-Woodlawn (Partial Service)/Roselawn
Avondale - Zoo
Fairmount - English Woods
Sayler Park
Glenway Crossing - Hyde Park Crosstown
Harrison Express
Glenway Crossing - Westwood
Sharonville Job Connection
Kings Island Express/Job Connection
Kings Island Direct (Seasonal Service)
Colerain Express via Banning
Anderson Express/Anderson Job Connection
Delhi Express
Springdale - Vine/Lincoln Heights
Mt. Washington Express
Eastgate Express
Riverfront Parking Shuttle
For detail of Downtown Cincinnati, see inset on reverse side of map.
CINCINNATI
Glenway Crossing Transit Center and Park & Ride
Cincinnati/Northern Kentucky International Airport
HARRISON
ADDYSTON
CHEVIOT
FOREST PARK
SPRINGDALE
GREENHILLS
NORTH COLLEGE HILL
MOUNT HEALTHY
WYOMING
LINCOLN HEIGHTS
READING
SAINT BERNARD
SILVERTON
DEER PARK
MADEIRA
NORWOOD
SHARONVILLE
BLUE ASH
MONTGOMERY
INDIAN HILL
MILFORD
LOVELAND
MASON
Kings Island Amusement Park
WEST CHESTER
DAYTON
BELLEVUE
NEWPORT
COVINGTON
LUDLOW
BROMLEY
PARK HILLS
SOUTHGATE
FORT THOMAS
FORT WRIGHT
FORT MITCHELL
CRESCENT SPRINGS
VILLA HILLS
WILDER
HIGHLAND HEIGHTS
SILVER GROVE
MELBOURNE
COLD SPRING
TAYLOR MILL
FLORENCE
ERLANGER
BURLINGTON

Metro by the numbers

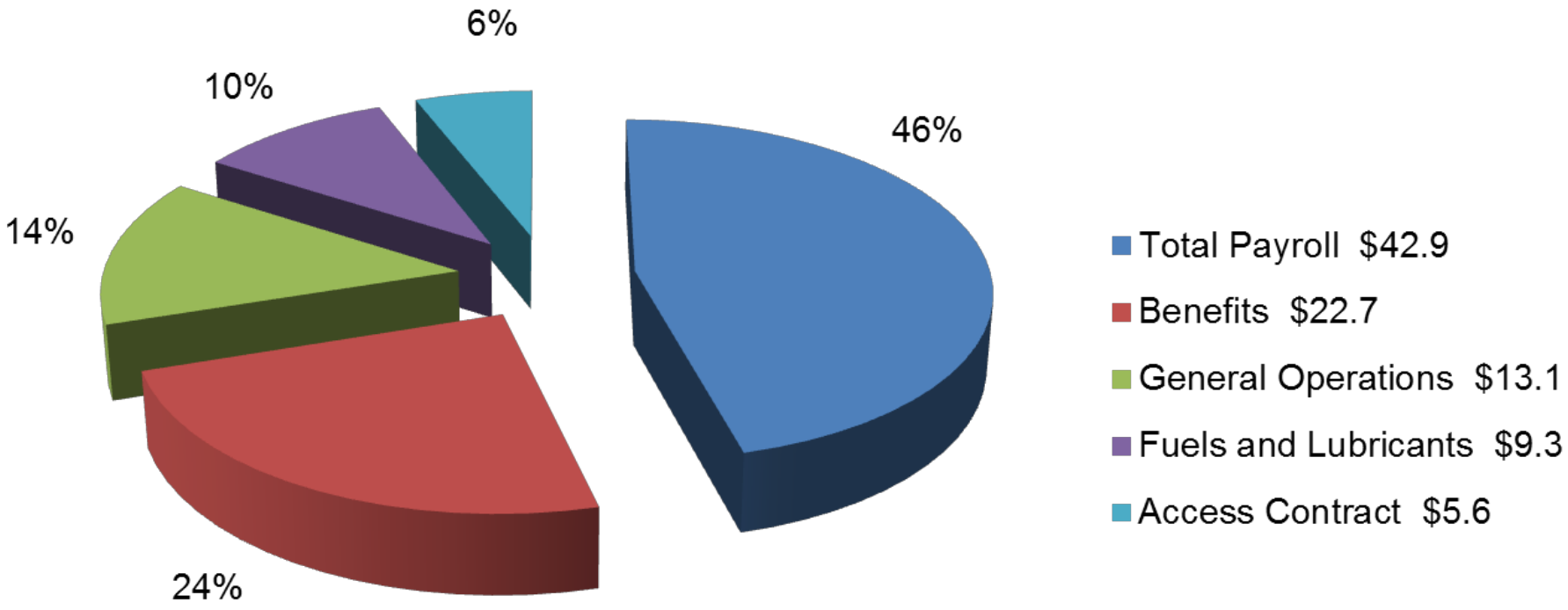
- **17 million** rides per year
- **$24 million** in annual spending beyond personnel
- **850** employees – major employer
- **352-bus** Metro fleet
- **49-bus** Access paratransit fleet
- **46** routes
- **21** suburban commuter park & rides
- **1 in 5** downtown workers commute on Metro

2015 operating revenues



METRO Futures Task Force

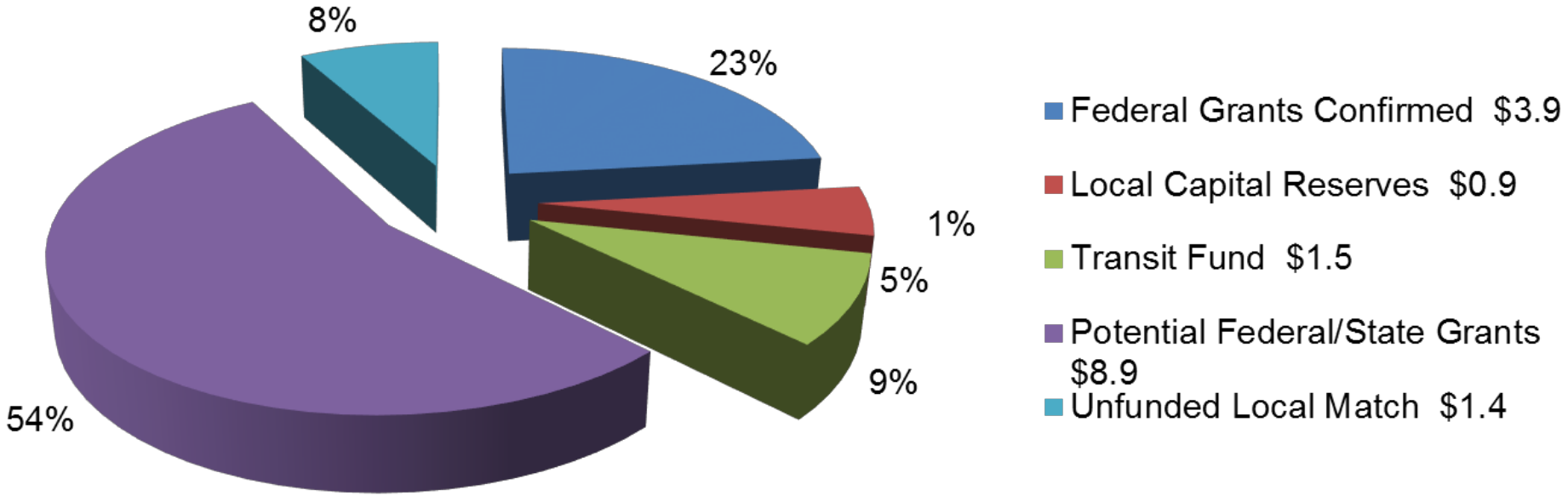
2015 operating expenses



METRO Futures Task Force

2015 capital funding

Used to replace buses and other durable items

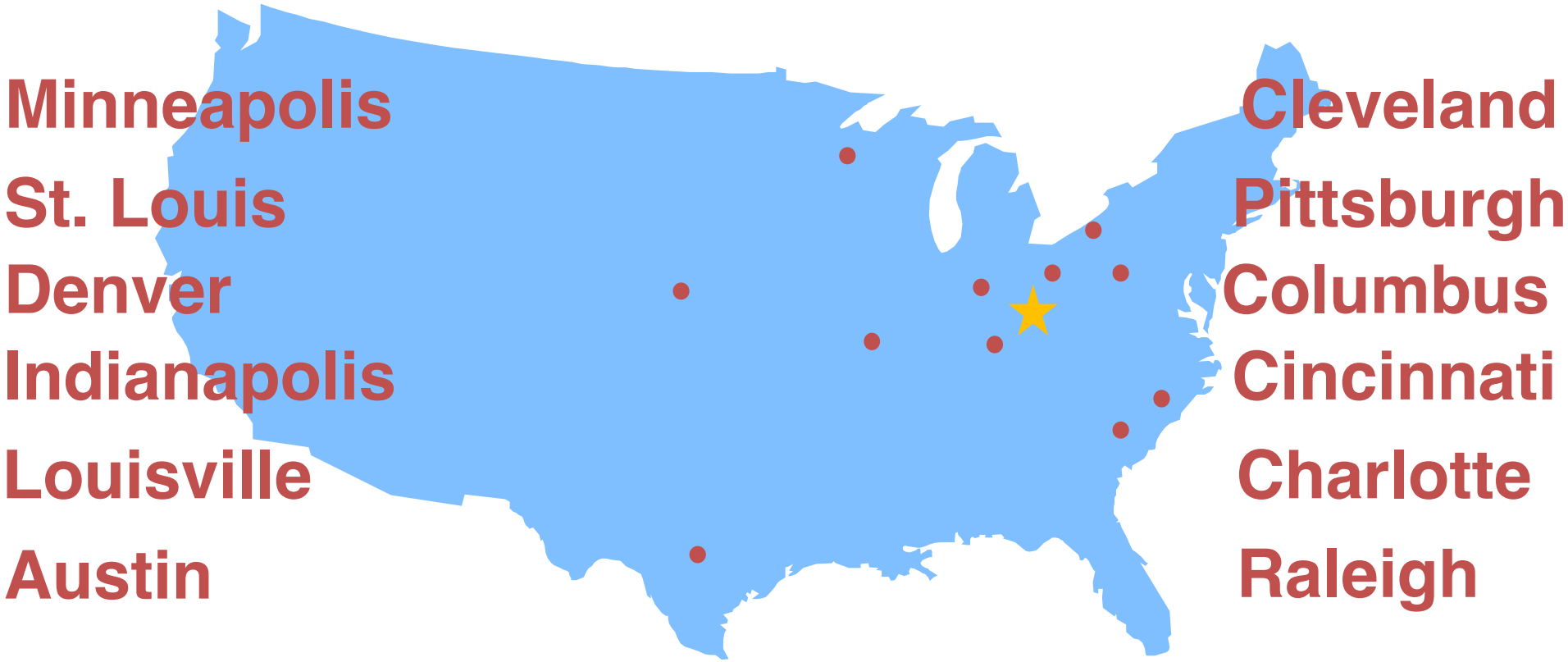


METRO Futures Task Force

Recent successes

- New technology to support real-time apps and bus tracker on website for bus arrival times
- Ticket vending machines, day passes, stored-value cards; smart cards in testing
- New Uptown Transit District; transit centers being developed in Oakley, Northside, Walnut Hills
- Industry Gold awards for Safety and Security

Peer city public transportation review



Metro ranking

Peer Cities (12):	Bus-only Cities (5):
Operational Efficiency: CINCINNATI #1	**Operational Efficiency:** CINCINNATI #1
Service Capacity: CINCINNATI #8	**Service Capacity:** CINCINNATI #1
State/Local Funding: CINCINNATI #10	**State/Local Funding:** CINCINNATI #4

UC Economics Center: 2014

Four focus areas

1. Return on investment:

- Measure impact on local economy
- Evaluate ROI to taxpayers and customers
- Maximize investment

Action step:

- Contracting with UC Economics Center for economic impact study (results will be shared at next meeting)

Four focus areas

2. Sustainability:

- Become an even greener organization
- Reduce waste to reduce cost

Action steps:

- Setting higher, more aggressive sustainability goals
- Signed industry-wide sustainability commitment

Four focus areas

3. Operational efficiency:

- Provide great customer experience
- Stretch every dollar further

Action steps:

- New Chief Operations Officer with experience increasing operational efficiency
- Exploring industry best practices

Four focus areas

4. Service reinvention:

- Need a more integrated grid system
- Vary the fleet to match the service level

Action steps:

- Contract with AECOM (results shared at future meeting)
- Development of Metro Futures Task Force

Current *go*FORWARD* progress

- 2012 Comprehensive Operational Analysis

- Gathered extensive community input
  - Eight public meetings
  - Thousands of responses (public comments, written and online surveys)

- Implemented short-term improvements in 2013

- Identified long-term enhancements

Long-term enhancements

Proposed Bus Rapid Transit Service

High capacity bus service with wider stop spacing, more frequent service, specially branded vehicles and enhanced bus stops.

Proposed Express Routes

Routes designed to bring suburban commuters into downtown Cincinnati and take city residents from Cincinnati to jobs in outlying areas

Proposed Connector Routes

Services connecting high-density suburban residential areas with emerging centers of employment and shopping and other Metro services.

Proposed Crosstown Routes

Non-downtown oriented routes that provide north/south or east/west connections to other routes and services without traveling downtown.

Proposed Transit Centers and Enhanced Stops

Transit centers and enhanced stops are off-street locations to transfer between suburban routes, particularly circulator routes, new crosstowns and the new Rapid service. They will offer passengers amenities such as real-time departure screens, lighting, bus shelters, etc.

Proposed Small-Bus Services

Circulator routes and call-and-ride services will meet travel needs within specific communities and low-density suburban areas not well-suited to traditional fixed-route transit. These services are designed for non-work trips such as doctor visits, shopping, etc.

Questions?

METRO BY THE NUMBERS

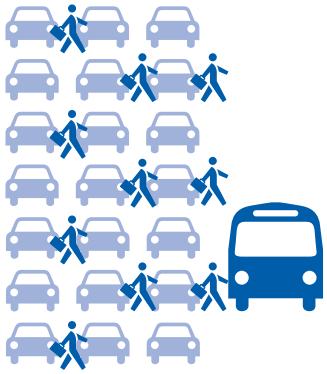
2015 operating budget: $93.6 million

50% CITY EARNINGS TAX

33% FARES

17% OTHER

(Federal and state, advertising revenue, etc.)



21 Park & Rides

Number of buses

352

850

Number of employees

Annual Ridership

17 million

PASSENGER TRIPS

Number of Metro stops

>6000

Metro is tops in service efficiency among 11 peer systems

1 in 5

Downtown workers commute on Metro

EconomicsCenter

A Peer City Public Transportation Review

Evaluating Metro's Operational Efficiency,
Service Capacity and Fiscal Impact

Prepared for
Southwest Ohio Regional Transit Authority
(SORTA)

October, 2013

UNIVERSITY OF Cincinnati

EconomicsCenter

A PEER CITY PUBLIC TRANSPORTATION REVIEW

Evaluating Metro's Operational Efficiency,
Service Capacity and Fiscal Impact

UNIVERSITY OF Cincinnati

EXECUTIVE SUMMARY

The Southwest Ohio Regional Transit Authority (SORTA) engaged the Economics Center to conduct a benchmarking study of Metro against public transportation systems in 11 peer cities. In particular, Metro's operational efficiency, service capacity levels and fiscal impacts were compared to 11 peer regions identified by Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky. These regions are identified in the jointly issued Regional Indicators Report as competitors to Greater Cincinnati for both jobs and people: Austin, TX; Charlotte, NC; Cleveland, OH; Columbus, OH; Denver, CO; Indianapolis, IN; Louisville, KY; Minneapolis, MN; Pittsburgh, PA; Raleigh, NC; and St. Louis, MO.

Various metrics were used within each category (below), and the cities were ordered from #1 to #12.

- **Operational efficiency** refers to the use of available resources to deliver public transportation services within a transit service area or city. When Metro, a bus-only transportation system, is compared to all 11 peer cities (many of which offer multiple modes of transportation), it is the leader (#1) in operational efficiency. Across the following measures, **Metro was at or near the top of the list**: fare revenue earned per operating expense, fare revenue earned per passenger trip, fare revenue earned per vehicle hour, and operating expense per passenger mile.

- **Service capacity** is the amount of public transportation service provided relative to population, time, service area, household, etc. Relative to its peer cities, **Metro falls to the middle of the peer cities (#7)** in service capacity. Metro is outperformed by its peer cities with multiple modes of transportation in all service capacity comparison measures: passenger trips per hour, passenger trips per capita (service area and city), vehicle hours per capita (service area and city), and vehicle miles per capita (service area and city).

- The **fiscal impacts** category is the amount of public funds provided for transportation services relative to the population and/or service provision. **Metro receives among the lowest total local and state funds of its peer cities** in the following measures: local funds per capita (service area), local and state funds per capita (service area), local funds per passenger mile, and local and state funds per passenger mile. Metro is comparatively (#10) more reliant on rider fares to provide services.

When Metro is compared only to the four other peer cities with bus-only transportation systems (Columbus, OH; Indianapolis, IN; Louisville, KY; and Raleigh, NC) using the same categories and accompanying metrics,

- Metro is the most operationally efficient (#1);
- Metro provides the most service (#1); and
- Metro receives the least amount of local and state public funds to support its operations (#5).

An historical analysis using data from 2007 to 2011 of an operational efficiency metric (revenue earned per operating expense), and a service capacity metric (trips per capita in the service area), revealed a gap.

This analysis depicts Metro as an efficient system in a community that is underserved by transit. While Metro efficiently manages its revenues, Metro provides less service than its peers that provide multiple modes of transportation, and more service than its peers that provide bus-only service. Under this operational efficiency metric it earns the most revenue for every dollar of expenditures among bus-only cities and multi-modal transit systems. In this service capacity metric, Metro only outperforms the bus-only peer cities. The top service-providing cities in the peer comparison group are all pursuing Bus Rapid Transit (BRT) as a mode option. In addition, they are exploring new transit options with plans and projects including commuter rail, heavy rail, light rail, and streetcar.

The bottom line:

Should the Cincinnati community decide to expand public transportation services, Metro's demonstrated operational efficiency should position it favorably to receive and efficiently manage additional funds. Due to Metro's current dependence on fare revenues, expanding services may require additional local, state, or federal funds.

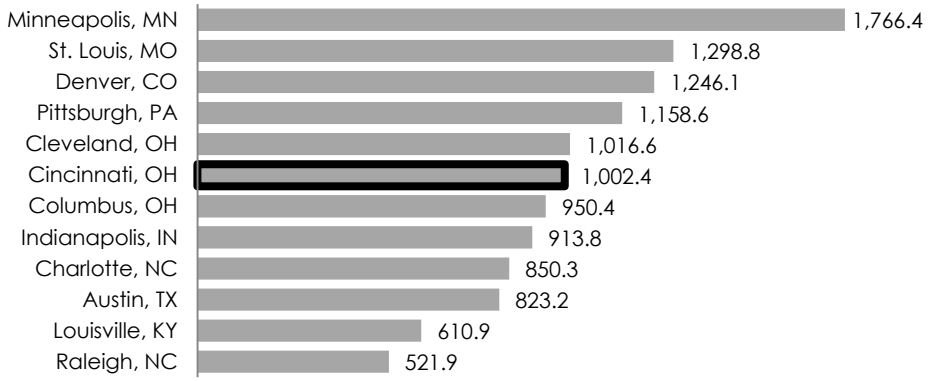
INTRODUCTION AND OVERVIEW

The Southwest Ohio Regional Transit Authority (SORTA) is a tax-supported, independent political subdivision of the State of Ohio. SORTA operates Metro fixed-route bus service and Access paratransit service for people whose disabilities prevent their riding Metro buses. The Economics Center contracted with SORTA for this report regarding Metro.

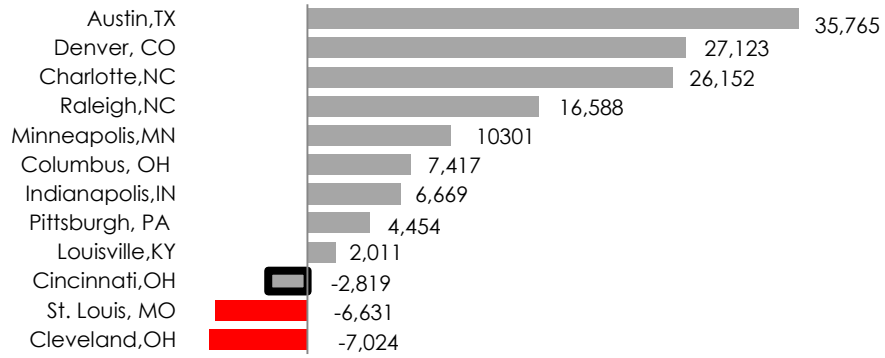
The Economics Center compared Metro's operational efficiency, service capacity levels and fiscal impact against 11 of Metro's peer regions identified by Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky. These regions are identified in the jointly issued Regional Indicators Report as competitors to Greater Cincinnati for both jobs and people. The regions analyzed by Agenda 360 were selected for their similar population sizes and demographics.

The 2013 Regional Indicators Report, which includes 2011 and 2012 data, presents the people indicator of net migration (the net of the number of people that move into and out of an area) as a measure of population growth. Based upon 2012 data, under this measure, Austin (35,765) and Denver (27,123) came in first and second place, respectively. Cincinnati ranked 10th (-2,819).

2012 Total Jobs (thousands)[1]



2012 Net Migration[1]



Population growth and an extensive transportation network can work together to increase economic prosperity in a region. Agenda 360's three overarching goals to make the Greater Cincinnati region more competitive can all be impacted by the efficiency and capacity of the region's public transportation system. They are:

- Grow new jobs and retain existing jobs throughout the region
- Keep talented workers in the region and attract new ones
- Provide economic opportunity and a good quality of life for everyone who calls the region home

In its initial plan released in 2009, Agenda 360 said this about why transportation is a regional priority: "… savvy metro areas are realizing the benefits to all their residents, from those living in poverty to talented young professionals, of investing in mass transportation, allowing people to live, work and play without reliance on an auto." [1]

Provided below in Table 1 is a summary transportation-related data table developed by the Economics Center of the 12 peer regions as identified by the Regional Indicators Report, a joint venture of Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky.

Table 1: Peer Cities – Transportation Data

City, State	Fare Revenues Earned	Total Operating Expenses	Passenger Trips	City Population	Service Area Population	Total Local Funds	Total Local and State Funds
Austin, TX	$ 16,223,060	$ 142,469,120	34,133,969	842,592	915,694	$ 131,280,716	$ 131,280,716
Charlotte, NC	$ 23,439,299	$ 101,948,946	27,028,511	755,202	758,927	$ 77,543,926	$ 90,045,441
Cincinnati, OH	**$ 30,706,490**	**$ 82,990,991**	**18,957,732**	**296,943**	**845,303**	**$ 37,212,445**	**$ 38,074,714**
Cleveland, OH	$ 49,928,892	$ 206,134,879	46,210,832	296,815	1,412,140	$ 131,476,834	$ 133,837,340
Columbus, OH	$ 17,911,227	$ 92,836,172	19,023,930	787,033	1,081,405	$ 70,087,679	$ 71,084,201
Denver, CO	$108,554,786	$ 394,118,981	97,784,885	634,265	2,619,000	$ 233,097,555	$ 233,097,555
Indianapolis, IN	$ 10,401,922	$ 53,003,967	9,512,303	829,718	911,296	$ 21,268,192	$ 31,880,366
Louisville, KY	$ 10,538,621	$ 65,299,771	15,112,842	746,906	972,546	$ 39,401,578	$ 41,666,864
Minneapolis, MN	$ 89,919,538	$ 284,697,538	80,886,890	392,880	1,805,940	$ 17,563,013	$ 188,812,176
Pittsburgh, PA	$ 95,014,608	$ 371,735,602	63,837,165	306,211	1,415,244	$ 29,780,558	$ 216,241,120
Raleigh, NC	$ 3,450,568	$ 25,928,337	6,233,838	423,179	347,729	$ 18,250,634	$ 20,887,477
St. Louis, MO	$ 46,115,422	$ 210,028,171	42,971,353	318,069	1,540,000	$ 154,304,123	$ 154,500,792

Passenger Trips the number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles, regardless of the number of vehicles ridden from origin to destination.
Service Area = a measure of access to transit service in terms of population served and area coverage (square miles).
Total Local Funds = a measure of financial assistance from local entities and tax payers to assist in paying capital.

[1] A Regional Action Plan: Building Talent, Jobs and Economic Opportunity for all (2009). Agenda 360.

BENCHMARKS FOR ALL PEER CITIES

The tables of metrics in the report are sorted, not ranked. They are sorted by value (highest to lowest), and then they are numerated one through twelve (or one through five in the case of the bus-only peer cities). The median order column in each table represents the median score of each city within a category (operational efficiency, service capacity, or fiscal impacts).

I. OPERATIONAL EFFICIENCY

- For this report, operational efficiency is defined as the use of available resources to deliver public transportation services within the identified region/city.
- Relative to its peer cities, Cincinnati is highly efficient in its operations. Compared to all of the peer cities, it earns the most fare revenue per operating expense, the most fare revenue per passenger trip, and the second most fare revenue per vehicle revenue hour.[1]
- When Metro, a bus-only transportation system, is compared to all 11 peer regions (many of which contain multiple modes of transportation), it is the leader in operational efficiency with a median order of #1.5 across all of the different measures listed below.

Table 2: Operational Efficiency

City, State	Fare Revenue Earned per Operating Expense	Fare Revenue Earned per Passenger Trip	Fare Revenue Earned per Vehicle Revenue Hour	Operating Expense per Passenger Mile	Median Order
Austin, TX	#12 $0.11	#12 $0.48	#11 $11.59	# 7 $1.02	#11.5
Charlotte, NC	# 6 $0.23	# 9 $0.87	# 7 $23.59	# 2 $0.73	# 6.5
Cincinnati, OH	**# 1 $0.37**	**# 1 $1.62**	**# 2 $39.72**	**# 6 $0.86**	**# 1.5**
Cleveland, OH	# 5 $0.24	# 6 $1.08	# 4 $32.90	# 8 $1.03	# 5.5
Columbus, OH	# 9 $0.19	# 8 $0.94	# 8 $19.51	#10 $1.27	# 8.5
Denver, CO	# 3 $0.28	# 4 $1.11	# 5 $28.40	# 1 $0.69	# 3.5
Indianapolis, IN	# 8 $0.20	# 5 $1.09	# 9 $16.68	#11 $1.33	# 8.5
Louisville, KY	#10 $0.16	#10 $0.70	#10 $13.07	# 9 $1.13	#10.0
Minneapolis, MN	# 2 $0.32	# 3 $1.11	# 1 $42.42	# 4 $0.79	# 2.5
Pittsburgh, PA	# 4 $0.26	# 2 $1.49	# 3 $37.92	#12 $1.52	# 3.5
Raleigh, NC	# 11 $0.13	#11 $0.55	#12 $ 8.29	# 5 $0.85	#11.0
St. Louis, MO	# 7 $0.22	# 7 $1.07	# 6 $24.40	# 3 $0.75	# 6.5

II. SERVICE CAPACITY

- For this report, service capacity is defined as the amount of public transportation service provided relative to population, time, service area, household, etc.
- On average, Metro is outperformed by its peer regions in all service capacity comparison measures.
- When Metro, a bus-only transportation system, is compared to **all** 11 peer cities (many of which contain multiple modes of transportation), it is an average operator in service capacity with a median order of #7

Table 3: Service Capacity

City, State	Passenger Trips Per Hour	Passenger Trips Per Capita (Service Area)	Passenger Trips Per Capita (City)	Vehicle Hours Per Capita (Service Area)	Vehicle Hours Per Capita (City)	Vehicle Miles Per Capita (Service Area)	Vehicle Miles Per Capita (City)	Median Order
Austin, TX	# 6 22.3	# 5 37.3	# 7 40.5	# 2 1.7	# 7 1.8	# 4 22.8	# 7 24.8	# 6.0
Charlotte, NC	# 3 24.5	# 6 35.6	# 8 35.8	# 5 1.5	# 8 1.5	# 3 23.7	# 8 23.9	# 5.0
Cincinnati, OH	**# 7 22.0**	**# 8 22.4**	**# 6 63.8**	**# 9 1.0**	**# 6 2.9**	**# 8 14.9**	**# 6 42.5**	**# 7.0**
Cleveland, OH	# 2 27.7	# 3 32.7	# 3 155.7	# 4 1.2	# 5 5.6	# 7 15.9	# 5 75.7	# 5.0
Columbus, OH	# 9 18.9	# 11 17.6	# 9 24.2	#12 0.9	# 9 1.3	#10 13.8	# 9 19.0	# 9.0
Denver, CO	# 5 22.4	# 4 37.3	# 4 154.2	# 3 1.7	# 2 6.9	# 2 25.3	# 2 104.4	# 3.0
Indianapolis, IN	#12 14.0	#12 10.4	# 12 11.5	#11 0.7	#12 0.8	#12 11.9	#11 13.0	#12.0
Louisville, KY	#10 17.2	#10 15.5	# 10 20.2	#10 0.9	#10 1.2	#11 12.9	#10 16.9	#10.0
Minneapolis, MN	# 1 33.8	# 2 44.8	# 2 205.9	# 6 1.3	# 4 6.1	# 6 17.4	# 4 80.0	# 4.0
Pittsburgh, PA	# 4 22.6	# 1 45.1	# 1 208.5	# 1 2.0	# 1 9.2	# 1 30.0	# 1 138.7	# 1.0
Raleigh, NC	#11 14.5	# 9 17.9	# 11 14.7	# 8 1.2	#11 1.0	# 9 14.5	#12 11.9	#11.0
St. Louis, MO	# 8 21.4	# 7 27.9	# 5 135.1	# 7 1.3	# 3 6.3	# 5 20.7	# 3 100.2	# 5.0

III. FISCAL IMPACTS

- For this report, fiscal impact is defined as the amount of public funds provided for transportation services relative to population and/or service provision.

- Metro receives among the lowest total local and state funds of the peer regions. Some states, such as Minnesota and Pennsylvania, provide significant amounts of financial support for the local transit systems, and this therefore reduces the need for cities in these states to provide local funding. This report acknowledges that there are two perspectives towards Metro's median order of #10; there are only two peer cities which receive fewer local and state funds. It can be seen as a measure of high self-sufficiency, or a sign of an under-funded system that can burden riders.

- As a result of receiving fewer local funds than most of its peer cities, Metro has become comparatively more reliant on rider fares to provide public transportation services. This reliance has impacted the service area size and expansion opportunities. Put differently, the comparatively exceptional reliance on rider fares to provide services will require fare increases, offsetting service reductions or new sources of funds to expand services. Understandably, passengers are more sensitive to fare changes when the fares they pay bear the majority of the cost of operations.

Table 4: Fiscal Impacts

City, State	Local Funds Per Capita (Service Area)	Local & State Funds Per Capita (Service Area)	Local Funds Per Passenger Mile	Local & State Funds Per Passenger Mile	Median Order
Austin, TX	# 1 $ 143.37	# 2 $143.37	# 2 $0.94	# 2 $0.94	# 2.0
Charlotte, NC	# 2 $ 102.18	# 3 $118.65	# 6 $0.56	# 8 $0.64	# 4.5
Cincinnati, OH	**# 8 $ 44.02**	**# 10 $ 45.04**	**# 10 $0.38**	**#12 $0.39**	**# 10.0**
Cleveland, OH	# 4 $ 93.10	# 6 $ 94.78	# 4 $0.66	# 7 $0.67	# 5.0
Columbus, OH	# 6 $ 64.81	# 8 $ 65.73	# 1 $0.96	# 1 $0.97	# 3.5
Denver, CO	# 5 $ 89.00	# 7 $ 89.00	# 9 $0.41	#11 $0.41	# 8.0
Indianapolis, IN	# 10 $ 23.34	# 12 $ 34.98	# 8 $0.53	# 4 $0.80	# 9.0
Louisville, KY	# 9 $ 40.51	# 11 $ 42.84	# 3 $0.68	# 5 $0.72	# 7.0
Minneapolis, MN	# 12 $ 9.73	# 4 $104.55	# 12 $0.05	#10 $0.52	# 11.0
Pittsburgh, PA	# 11 $ 21.04	# 1 $152.79	# 11 $0.12	# 3 $0.89	# 7.0
Raleigh, NC	# 7 $ 52.49	# 9 $ 60.07	# 5 $0.60	# 6 $0.68	# 6.5
St. Louis, MO	# 3 $100.20	# 5 $100.33	# 7 $0.55	# 9 $0.55	# 6.0

- Table 5 illustrates the relationship between the type of local funds a transportation system receives and the base fare it charges. Cincinnati is unique in its significant reliance on earnings taxes for funding.

Table 5: Base Fares and Local Funds[1]

City, State	Base Fare	Main Types of Local Funding
Austin, TX	$1.00	Sales tax
Charlotte, NC	$2.00	Sales tax
Cincinnati, OH	**$1.75**	**City Earnings tax**
Cleveland, OH	$2.25	Sales tax
Columbus, OH	$2.00	Sales tax
Denver, CO	$2.25	Sales tax
Indianapolis, IN	$1.75	Property tax, State
Louisville, KY	$1.75	Occupational tax
Minneapolis, MN	$1.75	Sales tax
Pittsburgh, PA	$2.50	County, State, Misc.
Raleigh, NC	$1.00	City General fund
St. Louis, MO	$2.00	Sales tax

[1] provided by Metro Planning Department (2013).

BENCHMARKS FOR BUS ONLY PEER CITIES

- When compared to other regions with bus-only public transportation systems, Metro is the most operationally efficient, provides the most service, and receives the least amount of local and state public funds to support its operations.
- Fare revenues earned per passenger trip is closely related to the amount of local funds provided. The lower the amount of local funds provided, the more the passenger pays for fares, leading to greater amounts of earned fare revenue and therefore greater operational efficiency.

Table 6: Bus Only Peer Cities Ordering

	OPERATIONAL EFFICIENCY	SERVICE CAPACITY	FISCAL IMPACTS
Cincinnati, OH	**#1**	**#1**	**#5**
Columbus, OH	#2[1]	#2	#1
Indianapolis, IN	#2[1]	#5	#4
Louisville, KY	#4	#3	#3
Raleigh, NC	#5	#4	#2

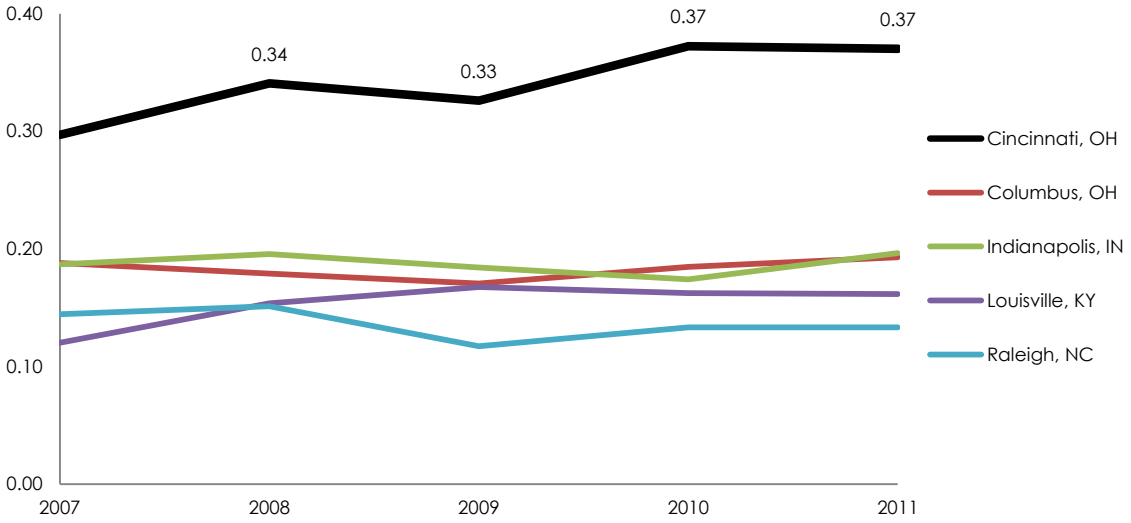
[1] The median order numbers for of Columbus, OH and Indianapolis, IN across all operational efficiency measures tied for second.

HISTORICAL ANALYSIS OF FISCAL AND SERVICE MEASURES[1]

I. OPERATIONAL EFFICIENCY

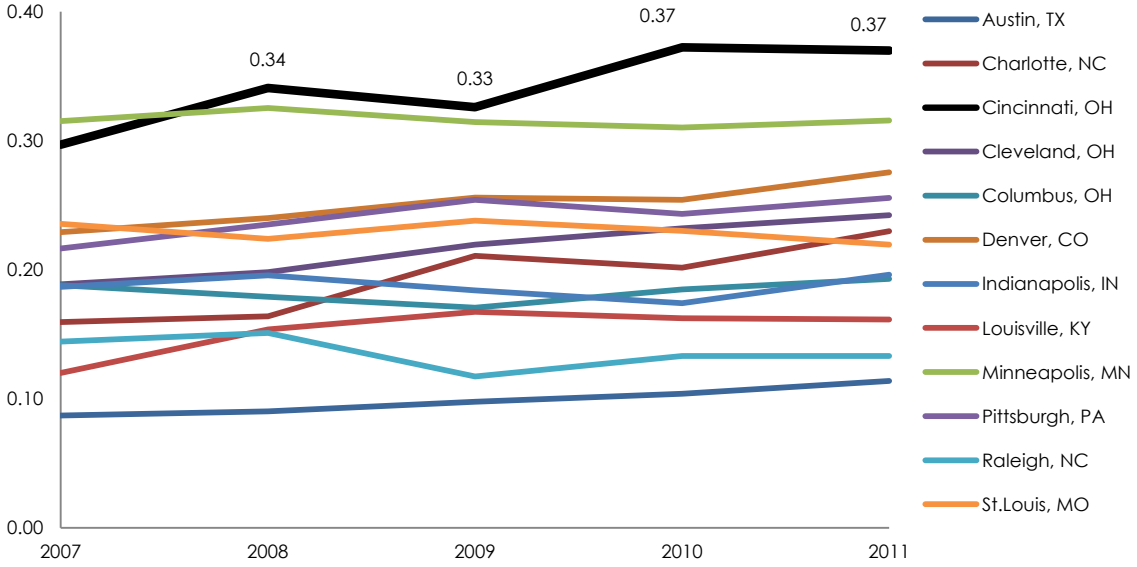
- Analysis of the revenue earned per operating expense (the ratio of fare revenues earned per total operating expenses) highlights the fiscal efficiency of the Metro bus system.
- On average, Metro has earned $0.34 in revenue for every dollar of its expenditures, between 2007 and 2011 while the combined average of the other four bus-only systems is approximately $0.20.
- Over this five year period, Metro's ratio has continued to increase, maintaining its lead as a top-performer against the other peer cities, while it is clear that other systems have generally stayed the same or reduced their dependence on fare revenue for operating expenses.

Figure 1: Bus-Only Revenue per Operating Expense



- Metro has not only out-performed the other four bus-only systems in the peer cities group for the last five years, Metro has also out-performed all of the benchmark cities, including those with multiple transportation systems (with the exception of 2007, when it was second).

Figure 2: Total System Revenue per Operating Expense

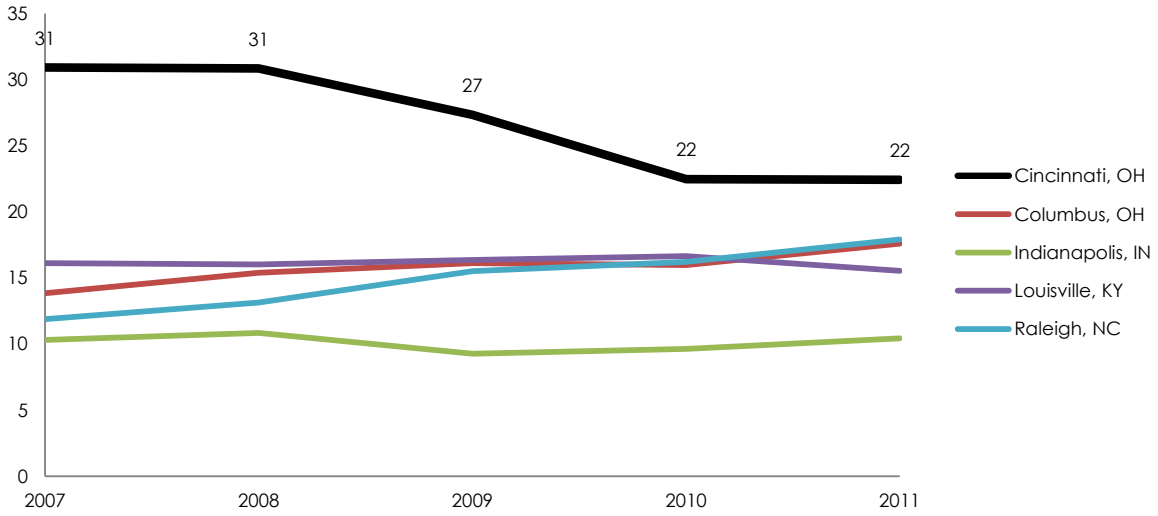


[1]See Appendix for table of all data points

II. SERVICE CAPACITY

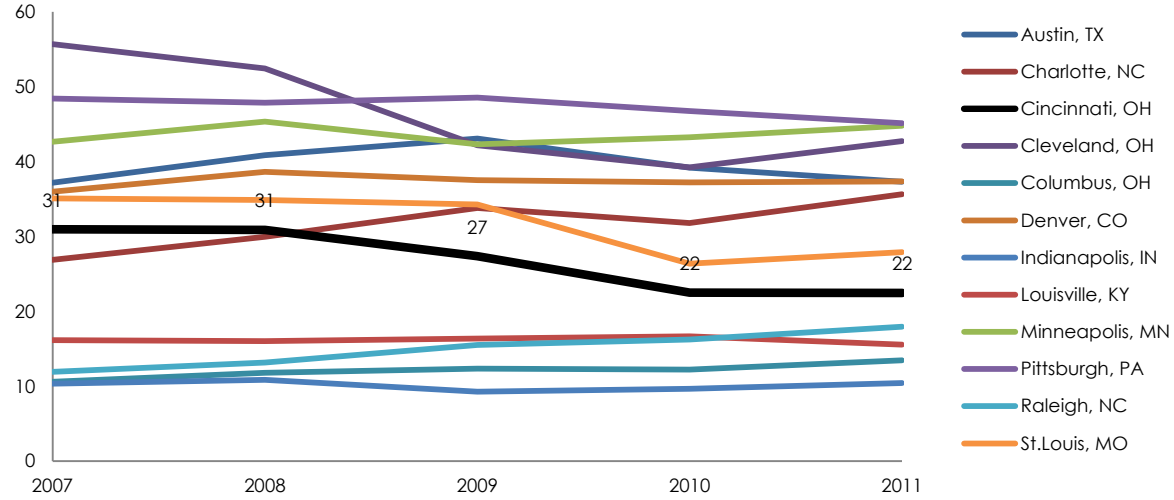
- Examining the passenger trips per capita in the service area of a transit system over time allows for an evaluation of the system's reach and service provision, and provides an opportunity to compare the supply of transit service in multiple service areas.
- While Metro has had the most passenger trips per capita in comparison to the bus-only cities over the past five years, its passenger trips per capita have steadily declined during this period (from 31 per capita in 2007, to 22 in 2011), while two other systems have steadily increased (Raleigh and Columbus) and two have stayed relatively even (Louisville and Indianapolis).

Figure 3: Bus-Only Passenger Trips per Capita (Service Area)



- Metro may outperform the bus-only peer cities under this service measure, but it lags behind in comparison to every system with multiple modes of transit.

Figure 4: Total System Passenger Trips per Capita (Service Area)



III. THE GAP

- This analysis of five years of historical data depicts Metro as an efficient system in a community that is underserved by transit and, comparatively speaking, significantly more dependent on riders to pay the cost of transit services. Put differently, Metro efficiently manages its revenues while providing less service than its peers.
- Should the community decide to expand public transportation services which, due to the current dependence on fare revenues, is likely to primarily require additional local, state and/or federal public funds, Metro's demonstrated operational efficiency should position it favorably to receive and efficiently manage additional funds.
- The next section outlines some of the differences between the transit modes offered by the peer cities with higher ridership levels.

Figure 4: Total System Passenger Trips per Capita (Service Area)

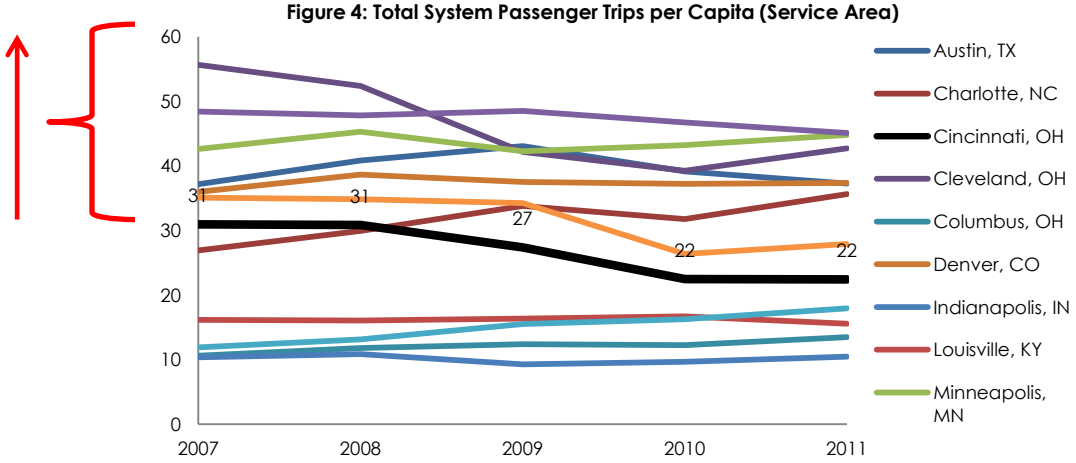


Table 1: Peer Cities Mode Comparisons

City, State	Name	Mode
Austin, TX	Capital Metropolitan Transportation Authority (CMTA)	bus, demand response, vanpool
Charlotte, NC	Charlotte Area Transit System (CATS)	bus, demand response, light rail, vanpool
Cincinnati, OH	Southwest Ohio Regional Transit Authority (SORTA/METRO)	bus, demand response
Cleveland, OH	The Greater Cleveland Regional Transit Authority (GCRTA)	bus, demand response, light rail, heavy rail
Columbus, OH	Central Ohio Transit Authority (COTA)	bus, demand response
Denver, CO	Denver Regional Transportation District (RTD)	bus, demand response, light rail
Indianapolis, IN	Indianapolis and Marion County Public Transportation (IndyGo)	bus, demand response
Louisville, KY	Transit Authority of River City (TARC)	bus, demand response
Minneapolis, MN	Metro Transit	bus, light rail, demand response
Pittsburgh, PA	Port Authority of Allegheny County (Port Authority)	bus, light rail, demand response, inclined plane
Raleigh, NC	Capital Area Transit (CAT)	bus, demand response, taxi
St. Louis, MO	Bi-State Development Agency (METRO)	bus, light rail, demand response

BENEFITS AND RECENT TRENDS IN PUBLIC TRANSPORTATION

I. GENERAL BENEFITS AND TRENDS

- The American Public Transportation Association (APTA) documents an increased interest in public transportation due to a growing population change, changing demographics and generational preferences (Millennials and Empty Nesters in particular desire and seek places with excellent public transportation systems), poverty rates, and the popularity of green and sustainable practices.

- APTA also highlights general public transportation benefits that exist for passengers, non-riders, and policy makers: strengthening the economy, reducing dependence on foreign oil, mitigating air pollution, relieving traffic congestion, mobility options and access for all ages, and increases in real estate value for nearby developments.[1] Many public transportation providers are now incorporating real-time data into their websites and mobile devices, and partnering with companies (corporations, hospitals, hotels, governmental agencies, and non-profits) to provide the best service for their communities.[2]

II. NATIONAL TRENDS BY TRANSPORTATION MODE

- In 2010, APTA reported a count of transportation modes in the top systems in urbanized areas nationally: demand response (715), bus (676), ferryboat (51), and light rail (35).

- Between 2007 and 2010, APTA reported that light rail was the transportation mode that experienced the greatest percentage increase when examining passenger miles by mode. Light rail increased by 12.5 percent while bus increased 0.2 percent.[3]

- The average fare per mode was also reported by APTA in the 2012 Public Transportation Fact Book. On average, trolley buses have the lowest fares and commuter rails have the highest: trolley-bus ($1.50); bus ($1.53); light rail ($1.87); heavy rail ($1.95); demand response ($2.31); and commuter rail ($6.66). [3]

III. PEER CITIES TRENDS

- According to the National Transit Database (2011), Cleveland, Denver, Minneapolis, and Pittsburgh (the systems with the greatest levels of service) offer not only bus service, but also light rail, heavy rail, and inclined plane (see Table 1).

- While light rail, as reported by APTA and cited above, has experienced the most growth when examining passenger miles by mode in recent years, bus rapid transit may offer another viable transit option for less and provide similar benefits as light rail. The American Public Transportation Association reports, "bus rapid transit (BRT) is promising to revolutionize public transportation, with its high-frequency service featuring superior passenger amenities along exclusive rights of way. Features such as bus stations, level boardings, off-board fare collection, and traffic signal priority lead to a much more satisfying rider experience. In just a few short years, this new mode, considered midway between light rail and traditional bus service, has significantly expanded its presence across the U.S."[2]

- The top service providing cities in the peer comparison group are all pursuing BRT as a mode option. The organizations in Austin, Cleveland, Denver, and Minneapolis all have projects and/or plans in place for BRTs. These cities continue to explore new transit options with other plans and projects including heavy rail, commuter rail, light rail, and street car.[4]

[1] Public Transportation: Moving America Forward (2010). American Public Transportation Association.
[2] America Rides the Bus. American Public Transportation Association.
[3] 2012 Public Transportation Fact Book (2012). American Public Transportation Association.
[4] Transit Space Race Projects (2013). Reconnecting America.

INDUSTRY IMPACTS

Businesses that operate within the Cincinnati Metropolitan Statistical Area (MSA), as described in Table 2 and as defined by the Bureau of Labor Statistics North American Industry Classification System (NAICS), benefit from urban transit system expenditures. The top industries (that make up greater than 1% of total sales in the Cincinnati MSA) affected by urban transit system expenditures are described in the table below. The most affected industries for the Cincinnati area and the nation as a whole are compared.

Due to the types of expenditures necessary to run a bus-only transit system, the top industries affected by urban transit system expenditures (in both the Cincinnati MSA and the U.S.) are manufacturing, transportation and warehousing, administrative and support and waste management and remediation services, and finance and insurance.

The American Public Transportation Association (APTA) estimates that, "Every $1 billion of investment in the nation's transportation infrastructure supports 36,000 jobs. These include durable and non-durable manufacturing jobs, as well as jobs in other industries, such as construction, finance, insurance and real estate, retail and wholesale trade, and services. Sixty-seven percent of the jobs directly supported by capital investment in the public transit industry replace lost blue-collar jobs with "green" jobs." [1] Additionally, they estimate that $1 billion of investment generates $3.6 billion in business sales and $400 million in tax revenues, therefore summarizing that a dollar of investment results in approximately four dollars in economic activity.

Table 2: Top Industries affected by Urban Transit System Indirect Spending (>1%)

Cincinnati MSA		U.S.	
Industry	**% Total Sales**	**Industry**	**% Total Sales**
Transportation and Warehousing	24%	Manufacturing	34%
Administrative and Support and Waste Management and Remediation Services	17%	Transportation and Warehousing	13%
Finance and Insurance	12%	Administrative and Support and Waste Management and Remediation Services	9%
Professional, Scientific, and Technical Services	8%	Finance and Insurance	9%
Real Estate and Rental and Leasing	7%	Mining, Quarrying, and Oil and Gas Extraction	6%
Government	6%	Professional, Scientific, and Technical Services	6%
Manufacturing	6%	Real Estate and Rental and Leasing	4%
Management of Companies and Enterprises	5%	Wholesale Trade	4%
Wholesale Trade	3%	Management of Companies and Enterprises	3%
Information	3%	Information	3%
Other Services (except Public Administration)	2%	Government	2%
Retail Trade	2%	Retail Trade	1%
Accommodation and Food Services	2%	Other Services (except Public Administration)	1%
Construction	1%	Accommodation and Food Services	1%
Arts, Entertainment, and Recreation	1%	Utilities	1%
Utilities	1%	Construction	1%
		Arts, Entertainment, and Recreation	1%

[1] Public Transportation: Moving American Forward (2010). APTA.

METHODOLOGY

I. DATA SOURCES

- Data utilized in this report was provided by Metro and collected from national data sources.
- National Transit Database (NTD) data tables (2011); Table 19: Transit Operating Statistics: Service Supplied and Consumed; Table 26: Fare per Passenger; Table 1: Summary of Operating Funds Applied; Table 17: Energy Consumption.
- American Public Transportation Association (APTA), 2011.
- U.S. Census Bureau, tables DP3 and DP4, 2011.

II. NOTES AND ASSUMPTIONS

- All passenger trips in the report are UNLINKED passenger trips (number of passengers who board public transportation vehicles; passengers are counted each time they board vehicles, regardless of the number of vehicles ridden from origin to destination).
- In the Industry Impacts section of the Return on Investment Chapter, it discusses the Urban Transit Systems industry group as defined by the Bureau of Labor Statistics' North American Industry Classification System (NAICS). This group includes the following industries: mixed mode transit systems; commuter rail systems; bus and other motor vehicle transit systems; all other transit and ground passenger transportation; and other support activities for road transportation. The Economics Center focused on only relevant industries within the group and therefore did not include the following industries that are typically included in the urban transit systems industry group in this analysis: special needs transportation; motor vehicle towing; and limousine service.
- Consistent with NTD reporting definitions, contract revenues with non-governmental entities are included in the fare revenue totals.
- The term "total local funds" is used to refer to the following variables provided by NTD: two total local funds amounts (general revenue; and dedicated and other) and one directly generated fund amount (dedicated and other).

III. ALL BENCHMARK MEASURES

- The tables of metrics in the report are sorted, not ranked. They are sorted by value (highest to lowest), and then they are numerated one through twelve (or one through five in the case of the bus-only peer cities).

About the Economics Center

The Research and Consulting division of the Economics Center provides the knowledge building blocks that help clients make better policy and economic development decisions. Our dynamic approach and critical data analysis empower leaders to respond to changing economic conditions, strengthen local economies and improve the quality of life for their communities.

Figure 1: Historical Passenger Trips per Capita (Service Area)

Year	Austin, TX	Charlotte, NC	**Cincinnati, OH**	Cleveland, OH	Columbus, OH	Denver, CO	Indianapolis, IN	Louisville, KY	Minneapolis, MN	Pittsburgh, PA	Raleigh, NC	St. Louis, MO
2007	37	27	**31**	43	14	36	10	16	43	48	12	35
2008	41	30	**31**	40	15	39	11	16	45	48	13	35
2009	43	34	**27**	32	16	37	9	16	42	49	16	34
2010	39	32	**22**	30	16	37	10	17	43	47	16	26
2011	37	36	**22**	33	18	37	10	16	45	45	18	28

Figure 2: Historical Revenue Earned Per Operating Expense

Year	Austin, TX	Charlotte, NC	**Cincinnati, OH**	Cleveland, OH	Columbus, OH	Denver, CO	Indianapolis, IN	Louisville, KY	Minneapolis, MN	Pittsburgh, PA	Raleigh, NC	St. Louis, MO
2007	0.09	0.16	**0.30**	0.19	0.19	0.23	0.19	0.12	0.32	0.22	0.14	0.24
2008	0.09	0.16	**0.34**	0.20	0.18	0.24	0.20	0.15	0.33	0.24	0.15	0.22
2009	0.10	0.21	**0.33**	0.22	0.17	0.26	0.18	0.17	0.31	0.25	0.12	0.24
2010	0.10	0.20	**0.37**	0.23	0.18	0.25	0.17	0.16	0.31	0.24	0.13	0.23
2011	0.11	0.23	**0.37**	0.24	0.19	0.28	0.20	0.16	0.32	0.26	0.13	0.22

DEFINITIONS

I. GENERAL

- **Fare revenues earned**: All income received directly from passengers, paid either in cash or through pre-paid tickets, passes, etc. It includes donations from those passengers who donate money on the vehicle. It includes the reduced fares paid by passengers in a user-side subsidy arrangement.
- **Total operating expenses:** Salary, wages, and benefits; materials and supplies; purchased transportation; and other operating expenses.
- **Unlinked passenger trips:** The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination. All references to passenger trips in the report refer to unlinked passenger trips.
- **Passenger miles travelled**: Passenger miles travelled is defined as the cumulative sum of the distances ridden by each passenger.
- **Service area:** Service Area is a measure of access to transit service in terms of population served and area coverage (square miles).
- **Total local funds:** a measure of financial assistance from local entities and tax payers to assist in paying capital. Total local funds include tax levies, general funds, specific contributions, reserve funds, and donations.
- **Vehicle revenue hour**: The hours that vehicles are scheduled to or actually travel while in revenue service. Vehicle revenue hours include layover / recovery time, but exclude, deadhead, operator training, and vehicle maintenance testing, as well as school bus and charter services.
- **Operating expenses**: The expenses associated with the operation of the transit agency, and classified by function or activity, and the goods and services purchased.

II. OPERATION EFFICIENCY METRICS

- **Fare revenue per vehicle revenue hour:** Ratio of fare revenues earned per vehicle revenue hour (hours during which a vehicle provides services that earn revenue; excludes testing, training, etc.).
- **Operating expense per passenger mile:** Ratio of total operating expense per passenger mile.
- **Fare revenues earned per operating expense:** Ratio of fare revenues earned per total operating expense.
- **Fare revenues earned per passenger trip:** Ratio of fare revenues earned per unlinked passenger trip.

III. SERVICE CAPACITY METRICS

- **Passenger trips per hour:** Ratio of unlinked passenger trips per vehicle hour.
- **Passenger trip per capita (city population):** Ratio of unlinked passenger trips per city population.
- **Passenger trip per capita (service area):** Ratio of unlinked passenger trips per service area.
- **Vehicle miles per capita (city population):** Ratio of annual vehicles miles per city population.
- **Vehicle miles per capita (service area):** Ratio of annual vehicle miles per service area.
- **Vehicle hours per capita (city population):** Ratio of annual vehicle hours per city population.
- **Vehicle hours per capita (service population):** Ratio of annual vehicle hours per service area.

IV. FISCAL IMPACT METRICS

- **Local funds per capita (service area):** Ratio of total local funds per service area.
- **Local and state funds per capita (service area):** ratio of total local and state funds per service area.
- **Local funds per passenger mile:** Ratio of total local funds per passenger mile.
- **Local and state funds per passenger mile:** Ratio of total local and state funds per passenger mile.

EconomicsCenter

A Peer City Public Transportation Review Update

Evaluating Metro's Operational Efficiency,
Service Capacity and Fiscal Impact

Prepared for
Southwest Ohio Regional Transit Authority
(SORTA)

September, 2014

UNIVERSITY OF Cincinnati

EXECUTIVE SUMMARY

In 2013, the Economics Center evaluated Metro's operational efficiency, service capacity, and fiscal impacts relative to 11 other peer cities. Using the same benchmarks, methodology, and data sources, the Economics Center updated this report to include an additional comparison year. Metrics for the newest comparison year (2012) were benchmarked against the original report metrics (2011) published in the October, 2013 report.

When Metro is compared to 11 peer cities' public transportation systems -

- Metro continues to be the most operationally efficient (#1) by capturing the highest fare revenue per operating dollar.
- In terms of service capacity, Metro is ranked in the middle of its peer cities (#8).
- Despite being the most operationally efficient, Metro still receives some of the lowest local and state funds of its peer cities (#10).

In comparison to the four other peer cities with bus-only transportation systems -

- Metro maintains its status as the most operationally efficient (#1).
- Service capacity is the highest for Metro among its bus-only peers (#1).
- Relative to last year's report, Metro moved up one spot in the fiscal impacts category (from #5 to #4).

The fiscal impacts ranking shift among bus-only peer cities is driven by the City of Cincinnati's financing structure. Cincinnati receives the majority of its revenue from the city's income tax of 2.1%. Of the 2.1%, 0.3% is dedicated to public transit purposes.

- In 2011, Metro received $37 million in local funds compare to $42 million in 2012.
- The year over year increase in income tax collections contributed to the shift in Metro's fiscal impact standing relative to its peer cities.

Table 1: Peer Cities – Transportation Data

City, State	Fare Revenues Earned	Total Operating Expenses	Passenger Trips	City Population	Service Area Population	Total Local Funds	Total Local and State Funds
Austin, TX	$ 16,223,060	$ 142,469,120	34,133,969	820,601	915,694	$ 131,280,716	$ 131,280,716
Charlotte, NC	$ 23,439,299	$ 101,948,946	27,028,511	751,074	758,927	$ 77,543,926	$ 90,045,441
Cincinnati, OH	**$ 30,706,490**	**$ 82,990,991**	**18,957,732**	**296,236**	**845,303**	**$ 37,212,445**	**$ 38,074,714**
Cleveland, OH	$ 49,928,892	$ 206,134,879	46,210,832	393,804	1,412,140	$ 131,476,834	$ 133,837,340
Columbus, OH	$ 17,911,227	$ 92,836,172	19,023,930	796,014	1,081,405	$ 70,087,679	$ 71,084,201
Denver, CO	$108,554,786	$ 394,118,981	97,784,885	619,968	2,619,000	$ 233,097,555	$ 233,097,555
Indianapolis, IN	$ 10,401,922	$ 53,003,967	9,512,303	824,232	911,296	$ 21,268,192	$ 31,880,366
Louisville, KY	$ 10,538,621	$ 65,299,771	15,112,842	746,906	972,546	$ 39,401,578	$ 41,666,864
Minneapolis, MN	$ 89,919,538	$ 284,697,538	80,886,890	387,736	1,805,940	$ 17,563,013	$ 188,812,176
Pittsburgh, PA	$ 95,014,608	$ 371,735,602	63,837,165	307,498	1,415,244	$ 29,780,558	$ 216,241,120
Raleigh, NC	$ 3,450,568	$ 25,928,337	6,233,838	415,394	347,729	$ 18,250,634	$ 20,887,477
St. Louis, MO	$ 46,115,422	$ 210,028,171	42,971,353	318,069	1,540,000	$ 154,304,123	$ 154,500,792

Table 2: Operational Efficiency

City, State	Fare Revenue Earned per Operating Expense	Fare Revenue Earned per Passenger Trip	Fare Revenue Earned per Vehicle Revenue Hour	Operating Expense per Passenger Mile	Relative Ranking
Austin, TX	#12 $0.11	#12 $0.48	#11 $11.59	# 7 $1.02	#12
Charlotte, NC	# 6 $0.23	# 9 $0.87	# 7 $23.59	# 2 $0.73	# 6
Cincinnati, OH	**# 1 $0.37**	**# 1 $1.62**	**# 2 $39.72**	**# 6 $0.86**	**# 1**
Cleveland, OH	# 5 $0.24	# 6 $1.08	# 4 $32.90	# 8 $1.03	# 5
Columbus, OH	# 9 $0.19	# 8 $0.94	# 8 $19.51	#10 $1.27	# 8
Denver, CO	# 3 $0.28	# 4 $1.11	# 5 $28.40	# 1 $0.69	# 3
Indianapolis, IN	# 8 $0.20	# 5 $1.09	# 9 $16.68	#11 $1.33	# 8
Louisville, KY	#10 $0.16	#10 $0.70	#10 $13.07	# 9 $1.13	#10
Minneapolis, MN	# 2 $0.32	# 3 $1.11	# 1 $42.42	# 4 $0.79	# 2
Pittsburgh, PA	# 4 $0.26	# 2 $1.49	# 3 $37.92	#12 $1.52	# 3
Raleigh, NC	# 11 $0.13	#11 $0.55	#12 $ 8.29	# 5 $0.85	#11
St. Louis, MO	# 7 $0.22	# 7 $1.07	# 6 $24.40	# 3 $0.75	# 6

Table 3: Service Capacity

City, State	Passenger Trips Per Hour	Passenger Trips Per Capita (Service Area)	Passenger Trips Per Capita (City)	Vehicle Hours Per Capita (Service Area)	Vehicle Hours Per Capita (City)	Vehicle Miles Per Capita (Service Area)	Vehicle Miles Per Capita (City)	Relative Ranking
Austin, TX	# 6 22.3	# 5 37.3	# 7 41.6	# 2 1.7	# 7 1.9	# 4 22.8	# 7 25.4	# 7
Charlotte, NC	# 3 24.5	# 6 35.6	# 8 36.0	# 5 1.5	# 8 1.5	# 3 23.7	# 8 24.0	# 4
Cincinnati, OH	**# 7 22.0**	**# 8 22.4**	# 6 64.0	**# 9 1.0**	**# 6 2.9**	**# 8 14.9**	**# 6 42.6**	**# 8**
Cleveland, OH	# 2 27.7	# 3 32.7	# 5 117.3	# 4 1.2	# 5 4.2	# 7 15.9	# 5 57.0	# 4
Columbus, OH	# 9 18.9	# 11 17.6	# 9 23.9	#12 0.9	# 9 1.3	#10 13.8	# 9 18.8	# 9
Denver, CO	# 5 22.4	# 4 37.3	# 3 157.7	# 3 1.7	# 2 7.1	# 2 25.3	# 2 106.8	# 2
Indianapolis, IN	#12 14.0	#12 10.4	#12 11.5	#11 0.7	#12 0.8	#12 11.9	#11 13.1	#12
Louisville, KY	#10 17.2	#10 15.5	#10 20.2	#10 0.9	#10 1.2	#11 12.9	#10 16.9	#10
Minneapolis, MN	# 1 33.8	# 2 44.8	# 1 208.6	# 6 1.3	# 4 6.2	# 6 17.4	# 4 81.0	# 3
Pittsburgh, PA	# 4 22.6	# 1 45.1	# 2 207.6	# 1 2.0	# 1 9.2	# 1 30.0	# 1 138.1	# 1
Raleigh, NC	#11 14.5	# 9 17.9	#11 15.0	# 8 1.2	#11 1.0	# 9 14.5	#12 12.1	#11
St. Louis, MO	# 8 21.4	# 7 27.9	# 4 135.1	# 7 1.3	# 3 6.3	# 5 20.7	# 3 100.2	# 4

Table 4: Fiscal Impacts

City, State	Local Funds Per Capita (Service Area)	Local & State Funds Per Capita (Service Area)	Local Funds Per Passenger Mile	Local & State Funds Per Passenger Mile	Relative Ranking
Austin, TX	# 1 $ 143.37	# 2 $143.37	# 2 $0.94	# 2 $0.94	# 1
Charlotte, NC	# 2 $ 102.18	# 3 $118.65	# 6 $0.56	# 8 $0.64	# 3
Cincinnati, OH	**# 8 $ 44.02**	**# 10 $ 45.04**	**# 10 $0.38**	**#12 $0.39**	**#11**
Cleveland, OH	# 4 $ 93.10	# 6 $ 94.78	# 4 $0.66	# 7 $0.67	# 4
Columbus, OH	# 6 $ 64.81	# 8 $ 65.73	# 1 $0.96	# 1 $0.97	# 2
Denver, CO	# 5 $ 89.00	# 7 $ 89.00	# 9 $0.41	#11 $0.41	# 9
Indianapolis, IN	# 10 $ 23.34	# 12 $ 34.98	# 8 $0.53	# 4 $0.80	#10
Louisville, KY	# 9 $ 40.51	# 11 $ 42.84	# 3 $0.68	# 5 $0.72	# 7
Minneapolis, MN	# 12 $ 9.73	# 4 $104.55	# 12 $0.05	#10 $0.52	#12
Pittsburgh, PA	# 11 $ 21.04	# 1 $152.79	# 11 $0.12	# 3 $0.89	# 7
Raleigh, NC	# 7 $ 52.49	# 9 $ 60.07	# 5 $0.60	# 6 $0.68	# 6
St. Louis, MO	# 3 $100.20	# 5 $100.33	# 7 $0.55	# 9 $0.55	# 5

Table 5: Base Fares and Local Funds[1]

City, State	Base Fare	Main Types of Local Funding
Austin, TX	$1.00	Sales tax
Charlotte, NC	$2.00	Sales tax
Cincinnati, OH	**$1.75**	**City Earnings tax**
Cleveland, OH	$2.25	Sales tax
Columbus, OH	$2.00	Sales tax
Denver, CO	$2.25	Sales tax
Indianapolis, IN	$1.75	Property tax, State
Louisville, KY	$1.75	Occupational tax
Minneapolis, MN	$1.75	Sales tax
Pittsburgh, PA	$2.50	County, State, Misc.
Raleigh, NC	$1.00	City General fund
St. Louis, MO	$2.00	Sales tax

[1] provided by Metro Planning Department (2013) The Economics Center assumed no change and was not provided updated numbers.

Table 6: Bus Only Peer Cities Ordering

	OPERATIONAL EFFICIENCY	SERVICE CAPACITY	FISCAL IMPACTS
Cincinnati, OH	**#1**	**#1**	**#5**
Columbus, OH	#2[1]	#2	#1
Indianapolis, IN	#2[1]	#5	#4
Louisville, KY	#4	#3	#3
Raleigh, NC	#5	#4	#2

[1] The median order numbers for of Columbus, OH and Indianapolis, IN across all operational efficiency measures tied for second.

The original report tables and figures are updated and attached in an effort to be completely accurate- the original report utilized early Census American Community Survey (ACS) population estimates and the update reflects the actual 2011 ACS population data. These tables also correct a typo in the Cleveland population in the original report (no rankings of any metrics are affected).

UPDATED 2014 REPORT TABLES & FIGURES (2012 DATA)

Peer Cities Populations

City, State	2011 1-Year Estimate	2012 1-Year Estimate	Absolute Change	Percentage Change
Austin, TX	820,601	842,595	21,994	2.68%
Charlotte, NC	751,074	775,208	24,134	3.21%
Cincinnati, OH	**296,236**	**296,552**	**316**	**0.11%**
Cleveland, OH	393,804	390,923	-2,881	-0.73%
Columbus, OH	796,014	809,890	13,876	1.74%
Denver, CO	619,968	634,265	14,297	2.31%
Indianapolis, IN	824,232	835,806	11,574	1.40%
Louisville, KY	746,906	750,828	3,922	0.53%
Minneapolis, MN	387,736	392,871	5,135	1.32%
Pittsburgh, PA	307,498	306,212	-1,286	-0.42%
Raleigh, NC	415,394	422,073	6,679	1.61%
St. Louis, MO	318,069	318,172	103	0.03%

Table 1: Peer Cities – Transportation Data

City, State	Fare Revenues Earned	Total Operating Expenses	Passenger Trips	City Population	Service Area Population	Total Local Funds	Total Local and State Funds
Austin, TX	$ 20,345,805	$ 164,461,413	35,512,338	842,595	915,694	$ 134,020,655	$ 134,021,671
Charlotte, NC	$ 24,878,955	$ 106,334,874	28,243,662	775,208	758,927	$ 76,475,265	$ 89,023,751
Cincinnati, OH	**$ 31,292,564**	**$ 87,643,663**	**17,553,120**	**296,552**	**845,303**	**$ 42,258,236**	**$ 43,065,636**
Cleveland, OH	$ 50,160,075	$ 221,816,208	48,234,103	390,923	1,412,140	$ 160,730,506	$ 164,867,673
Columbus, OH	$ 20,121,363	$ 93,646,094	18,692,312	809,890	1,081,405	$ 71,017,194	$ 71,934,161
Denver, CO	$114,076,378	$ 416,562,134	98,518,888	634,265	2,619,000	$ 344,880,619	$ 345,835,223
Indianapolis, IN	$ 11,291,418	$ 52,815,070	10,248,603	835,806	911,296	$ 21,059,820	$ 31,632,940
Louisville, KY	$ 11,121,110	$ 69,925,754	17,186,176	750,828	972,546	$ 42,309,199	$ 45,071,722
Minneapolis, MN	$ 91,428,299	$ 292,821,197	81,053,506	392,871	1,805,940	$ 24,439,600	$ 198,919,573
Pittsburgh, PA	$ 98,232,138	$ 372,681,961	65,854,009	306,212	1,415,244	$ 31,043,495	$ 230,022,330
Raleigh, NC	$ 3,758,559	$ 27,865,336	6,908,735	422,073	347,729	$ 17,434,149	$ 21,348,301
St. Louis, MO	$ 48,892,352	$ 222,082,675	46,704,766	318,172	1,540,000	$ 168,101,440	$ 168,298,110

Table 2: Operational Efficiency

City, State	Fare Revenue Earned per Operating Expense	Fare Revenue Earned per Passenger Trip	Fare Revenue Earned per Vehicle Revenue Hour	Operating Expense per Passenger Mile	Relative Ranking
Austin, TX	#12 $0.12	#11 $0.57	#10 $14.19	# 9 $1.03	#11
Charlotte, NC	# 5 $0.23	# 9 $0.88	# 7 $24.31	# 3 $0.75	# 5
Cincinnati, OH	**# 1 $0.36**	**# 1 $1.78**	**# 3 $39.79**	**# 6 $0.99**	**# 1**
Cleveland, OH	# 6 $0.23	# 8 $1.04	# 4 $31.71	# 8 $1.00	# 7
Columbus, OH	# 8 $0.21	# 6 $1.08	# 8 $21.22	#11 $1.27	# 8
Denver, CO	# 3 $0.27	# 3 $1.16	# 5 $30.23	# 1 $0.71	# 2
Indianapolis, IN	# 9 $0.21	# 5 $1.10	# 9 $18.08	#10 $1.16	# 9
Louisville, KY	#10 $0.16	#10 $0.65	#11 $13.21	# 7 $1.00	#10
Minneapolis, MN	# 2 $0.31	# 4 $1.13	# 1 $43.15	# 4 $0.79	# 2
Pittsburgh, PA	# 4 $0.26	# 2 $1.49	# 2 $41.71	#12 $1.40	# 2
Raleigh, NC	#11 $0.13	#12 $0.54	#12 $ 8.94	# 5 $0.82	#12
St. Louis, MO	# 7 $0.22	# 7 $1.05	# 6 $25.31	# 2 $0.72	# 6

Table 3: Service Capacity

City, State	Passenger Trips Per Hour	Passenger Trips Per Capita (Service Area)	Passenger Trips Per Capita (City)	Vehicle Hours Per Capita (Service Area)	Vehicle Hours Per Capita (City)	Vehicle Miles Per Capita (Service Area)	Vehicle Miles Per Capita (City)	Relative Ranking
Austin, TX	# 7 22.6	# 3 38.8	# 7 42.1	# 2 1.7	# 7 1.9	# 2 24.4	# 7 26.5	# 7
Charlotte, NC	# 4 25.2	# 5 37.2	# 8 36.4	# 4 1.5	# 8 1.4	# 4 23.7	# 8 23.2	# 4
Cincinnati, OH	**# 8 20.3**	**# 8 20.8**	**# 6 59.2**	**# 9 1.0**	**# 6 2.9**	**# 9 15.0**	**# 6 42.6**	**# 8**
Cleveland, OH	# 2 27.5	# 6 34.2	# 5 123.4	# 8 1.2	# 5 4.5	# 7 16.6	# 5 59.9	# 4
Columbus, OH	#10 18.0	#11 17.3	# 9 23.1	#10 1.0	# 9 1.3	#10 14.2	# 9 18.9	# 9
Denver, CO	# 5 22.7	# 4 37.6	# 3 155.3	# 3 1.7	# 2 6.8	# 3 23.7	# 3 98.0	# 2
Indianapolis, IN	#12 15.1	#12 11.2	#12 12.3	#12 0.7	#12 0.8	#12 11.9	#12 12.9	#12
Louisville, KY	# 9 18.8	#10 17.7	#10 22.9	#11 0.9	#10 1.2	#11 13.2	#10 17.1	# 9
Minneapolis, MN	# 1 33.9	# 2 44.9	# 2 206.3	# 6 1.3	# 4 6.1	# 6 17.4	# 4 80.0	# 3
Pittsburgh, PA	# 3 25.3	# 1 46.5	# 1 215.1	# 1 1.8	# 1 8.5	# 1 27.3	# 1 126.4	# 1
Raleigh, NC	#11 15.8	# 9 19.9	#11 16.4	# 7 1.3	#11 1.0	# 8 15.7	#11 12.9	#11
St. Louis, MO	# 6 22.7	# 7 30.3	# 4 146.8	# 5 1.3	# 3 6.5	# 5 21.4	# 2 103.5	# 4

Table 4: Fiscal Impacts

City, State	Local Funds Per Capita (Service Area)	Local & State Funds Per Capita (Service Area)	Local Funds Per Passenger Mile	Local & State Funds Per Passenger Mile	Relative Ranking
Austin, TX	# 1 $146.36	# 2 $146.36	# 2 $0.84	# 3 $0.84	# 1
Charlotte, NC	# 5 $100.77	# 4 $117.30	# 7 $0.54	# 8 $0.62	# 5
Cincinnati, OH	**# 8 $ 49.99**	**# 10 $ 50.95**	**# 9 $0.48**	**# 12 $0.49**	**#10**
Cleveland, OH	# 3 $113.82	# 5 $116.75	# 3 $0.73	# 4 $0.75	# 2
Columbus, OH	# 6 $ 65.67	# 8 $ 66.52	# 1 $0.97	# 1 $0.98	# 2
Denver, CO	# 2 $131.68	# 3 $132.05	# 5 $0.59	# 9 $0.59	# 4
Indianapolis, IN	# 10 $ 23.11	# 12 $ 34.71	# 10 $0.46	# 5 $0.69	#11
Louisville, KY	# 9 $ 43.50	# 11 $ 46.34	# 4 $0.60	# 6 $0.64	# 8
Minneapolis, MN	# 12 $ 13.53	# 6 $110.15	# 12 $0.07	# 11 $0.54	#12
Pittsburgh, PA	# 11 $ 21.94	# 1 $162.53	# 11 $0.12	# 2 $0.86	# 6
Raleigh, NC	# 7 $ 50.14	# 9 $ 61.39	# 8 $0.51	# 7 $0.63	# 8
St. Louis, MO	# 4 $109.16	# 7 $109.28	# 6 $0.55	# 10 $0.55	# 6

Table 5: Base Fares and Local Funds[1]

City, State	Base Fare	Main Types of Local Funding
Austin, TX	$1.00	Sales tax
Charlotte, NC	$2.00	Sales tax
Cincinnati, OH	**$1.75**	**City Earnings tax**
Cleveland, OH	$2.25	Sales tax
Columbus, OH	$2.00	Sales tax
Denver, CO	$2.25	Sales tax
Indianapolis, IN	$1.75	Property tax, State
Louisville, KY	$1.75	Occupational tax
Minneapolis, MN	$1.75	Sales tax
Pittsburgh, PA	$2.50	County, State, Misc.
Raleigh, NC	$1.00	City General fund
St. Louis, MO	$2.00	Sales tax

[1] provided by Metro Planning Department (2013) The Economics Center assumed no change and was not provided updated numbers.

Table 6: Bus Only Peer Cities Ordering

	OPERATIONAL EFFICIENCY	SERVICE CAPACITY	FISCAL IMPACTS
Cincinnati, OH	**#1**	**#1**	**#4**
Columbus, OH	#2	#2[1]	#1
Indianapolis, IN	#3	#5	#5
Louisville, KY	#4	#2[1]	#2[2]
Raleigh, NC	#5	#4	#2[2]

[1]The median order numbers for of Louisville, KY and Indianapolis, IN across all service capacity measures tied for second.
[2]The median order numbers for of Louisville, KY and Raleigh, NC across all fiscal impacts measures tied for second.

Figure 1: Bus-Only Revenue per Operating Expense

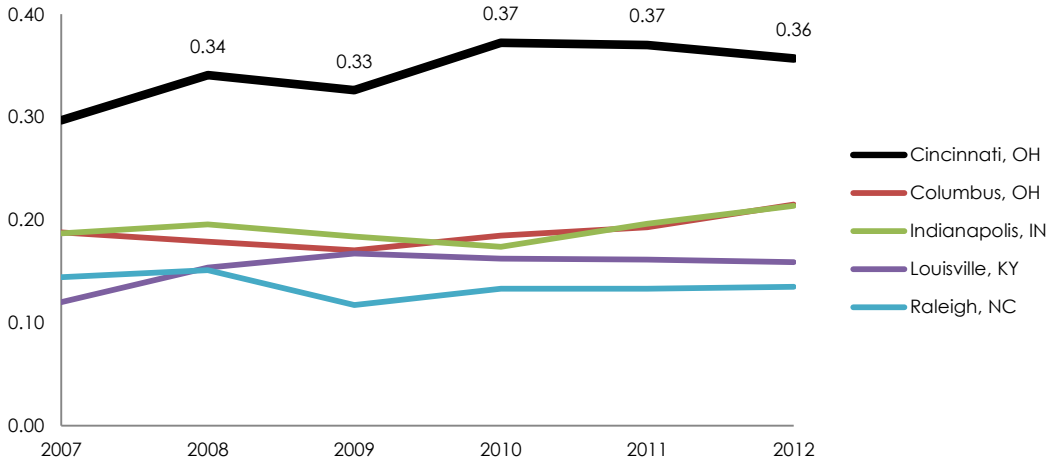


Figure 2: Total System Revenue per Operating Expense

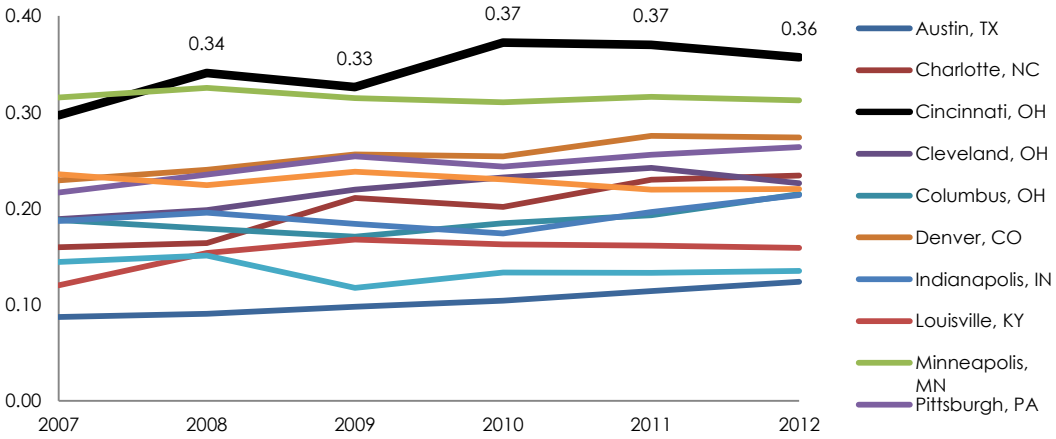


Figure 3: Bus-Only Passenger Trips per Capita (Service Area)

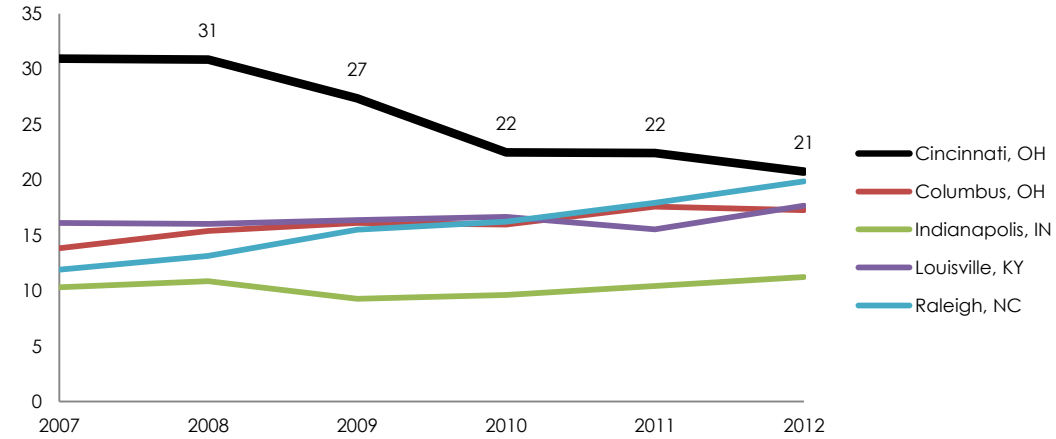
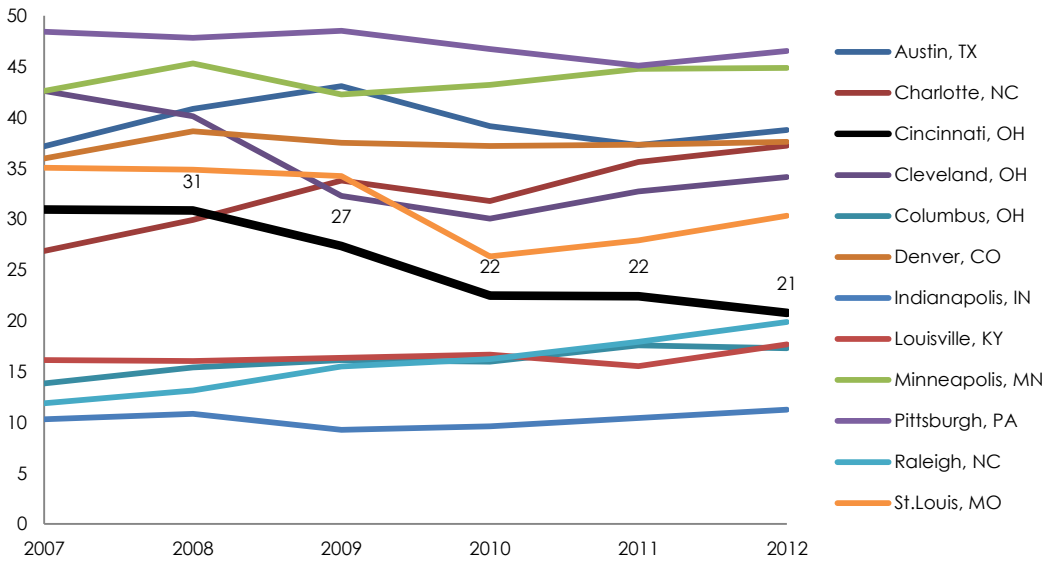


Figure 4: Total System Passenger Trips per Capita (Service Area)



The original report metrics utilize 2011 National Transit Database information and Census data, and the updates utilize 2012 data.

EconomicsCenter

A Peer City Public Transportation Review

Evaluating Metro's Operational Efficiency,
Service Capacity and Fiscal Impact

Prepared for
Southwest Ohio Regional Transit Authority
(SORTA)

October, 2013

UNIVERSITY OF Cincinnati

A PEER CITY PUBLIC TRANSPORTATION REVIEW

Evaluating Metro's Operational Efficiency,
Service Capacity and Fiscal Impact

EXECUTIVE SUMMARY

The Southwest Ohio Regional Transit Authority (SORTA) engaged the Economics Center to conduct a benchmarking study of Metro against public transportation systems in 11 peer cities. In particular, Metro's operational efficiency, service capacity levels and fiscal impacts were compared to 11 peer regions identified by Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky. These regions are identified in the jointly issued Regional Indicators Report as competitors to Greater Cincinnati for both jobs and people: Austin, TX; Charlotte, NC; Cleveland, OH; Columbus, OH; Denver, CO; Indianapolis, IN; Louisville, KY; Minneapolis, MN; Pittsburgh, PA; Raleigh, NC; and St. Louis, MO.

Various metrics were used within each category (below), and the cities were ordered from #1 to #12.

- **Operational efficiency** refers to the use of available resources to deliver public transportation services within a transit service area or city. When Metro, a bus-only transportation system, is compared to all 11 peer cities (many of which offer multiple modes of transportation), it is the leader (#1) in operational efficiency. Across the following measures, **Metro was at or near the top of the list**: fare revenue earned per operating expense, fare revenue earned per passenger trip, fare revenue earned per vehicle hour, and operating expense per passenger mile.

- **Service capacity** is the amount of public transportation service provided relative to population, time, service area, household, etc. Relative to its peer cities, **Metro falls to the middle of the peer cities (#7)** in service capacity. Metro is outperformed by its peer cities with multiple modes of transportation in all service capacity comparison measures: passenger trips per hour, passenger trips per capita (service area and city), vehicle hours per capita (service area and city), and vehicle miles per capita (service area and city).

- The **fiscal impacts** category is the amount of public funds provided for transportation services relative to the population and/or service provision. **Metro receives among the lowest total local and state funds of its peer cities** in the following measures: local funds per capita (service area), local and state funds per capita (service area), local funds per passenger mile, and local and state funds per passenger mile. Metro is comparatively (#10) more reliant on rider fares to provide services.

When Metro is compared only to the four other peer cities with bus-only transportation systems (Columbus, OH; Indianapolis, IN; Louisville, KY; and Raleigh, NC) using the same categories and accompanying metrics,

- Metro is the most operationally efficient (#1);
- Metro provides the most service (#1); and
- Metro receives the least amount of local and state public funds to support its operations (#5).

An historical analysis using data from 2007 to 2011 of an operational efficiency metric (revenue earned per operating expense), and a service capacity metric (trips per capita in the service area), revealed a gap.

This analysis depicts Metro as an efficient system in a community that is underserved by transit. While Metro efficiently manages its revenues, Metro provides less service than its peers that provide multiple modes of transportation, and more service than its peers that provide bus-only service. Under this operational efficiency metric it earns the most revenue for every dollar of expenditures among bus-only cities and multi-modal transit systems. In this service capacity metric, Metro only outperforms the bus-only peer cities. The top service-providing cities in the peer comparison group are all pursuing Bus Rapid Transit (BRT) as a mode option. In addition, they are exploring new transit options with plans and projects including commuter rail, heavy rail, light rail, and streetcar.

The bottom line:

Should the Cincinnati community decide to expand public transportation services, Metro's demonstrated operational efficiency should position it favorably to receive and efficiently manage additional funds. Due to Metro's current dependence on fare revenues, expanding services may require additional local, state, or federal funds.

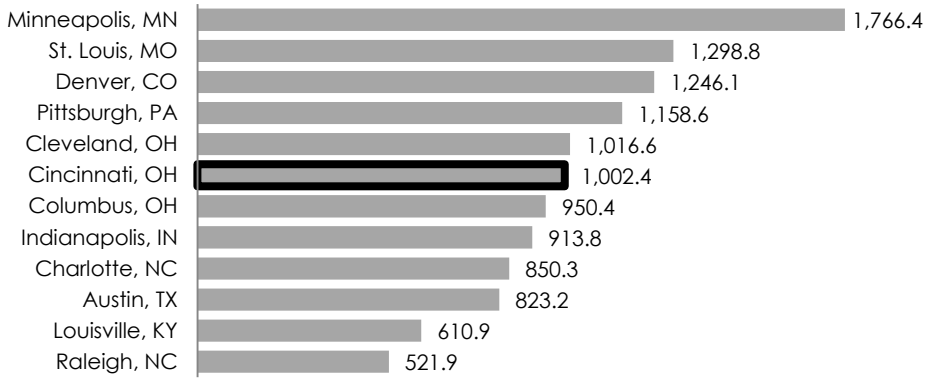
INTRODUCTION AND OVERVIEW

The Southwest Ohio Regional Transit Authority (SORTA) is a tax-supported, independent political subdivision of the State of Ohio. SORTA operates Metro fixed-route bus service and Access paratransit service for people whose disabilities prevent their riding Metro buses. The Economics Center contracted with SORTA for this report regarding Metro.

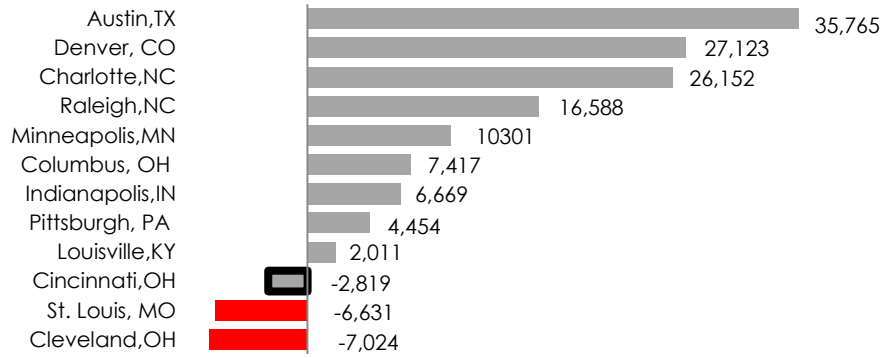
The Economics Center compared Metro's operational efficiency, service capacity levels and fiscal impact against 11 of Metro's peer regions identified by Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky. These regions are identified in the jointly issued Regional Indicators Report as competitors to Greater Cincinnati for both jobs and people. The regions analyzed by Agenda 360 were selected for their similar population sizes and demographics.

The 2013 Regional Indicators Report, which includes 2011 and 2012 data, presents the people indicator of net migration (the net of the number of people that move into and out of an area) as a measure of population growth. Based upon 2012 data, under this measure, Austin (35,765) and Denver (27,123) came in first and second place, respectively. Cincinnati ranked 10th (-2,819).

2012 Total Jobs (thousands)[1]



2012 Net Migration[1]



Population growth and an extensive transportation network can work together to increase economic prosperity in a region. Agenda 360's three overarching goals to make the Greater Cincinnati region more competitive can all be impacted by the efficiency and capacity of the region's public transportation system. They are:

- Grow new jobs and retain existing jobs throughout the region
- Keep talented workers in the region and attract new ones
- Provide economic opportunity and a good quality of life for everyone who calls the region home

In its initial plan released in 2009, Agenda 360 said this about why transportation is a regional priority: "… savvy metro areas are realizing the benefits to all their residents, from those living in poverty to talented young professionals, of investing in mass transportation, allowing people to live, work and play without reliance on an auto." [1]

Provided below in Table 1 is a summary transportation-related data table developed by the Economics Center of the 12 peer regions as identified by the Regional Indicators Report, a joint venture of Agenda 360 and Vision 2015, the regional action plans for Greater Cincinnati and Northern Kentucky.

Table 1: Peer Cities – Transportation Data

City, State	Fare Revenues Earned	Total Operating Expenses	Passenger Trips	City Population	Service Area Population	Total Local Funds	Total Local and State Funds
Austin, TX	$ 16,223,060	$ 142,469,120	34,133,969	842,592	915,694	$ 131,280,716	$ 131,280,716
Charlotte, NC	$ 23,439,299	$ 101,948,946	27,028,511	755,202	758,927	$ 77,543,926	$ 90,045,441
Cincinnati, OH	**$ 30,706,490**	**$ 82,990,991**	**18,957,732**	**296,943**	**845,303**	**$ 37,212,445**	**$ 38,074,714**
Cleveland, OH	$ 49,928,892	$ 206,134,879	46,210,832	296,815	1,412,140	$ 131,476,834	$ 133,837,340
Columbus, OH	$ 17,911,227	$ 92,836,172	19,023,930	787,033	1,081,405	$ 70,087,679	$ 71,084,201
Denver, CO	$108,554,786	$ 394,118,981	97,784,885	634,265	2,619,000	$ 233,097,555	$ 233,097,555
Indianapolis, IN	$ 10,401,922	$ 53,003,967	9,512,303	829,718	911,296	$ 21,268,192	$ 31,880,366
Louisville, KY	$ 10,538,621	$ 65,299,771	15,112,842	746,906	972,546	$ 39,401,578	$ 41,666,864
Minneapolis, MN	$ 89,919,538	$ 284,697,538	80,886,890	392,880	1,805,940	$ 17,563,013	$ 188,812,176
Pittsburgh, PA	$ 95,014,608	$ 371,735,602	63,837,165	306,211	1,415,244	$ 29,780,558	$ 216,241,120
Raleigh, NC	$ 3,450,568	$ 25,928,337	6,233,838	423,179	347,729	$ 18,250,634	$ 20,887,477
St. Louis, MO	$ 46,115,422	$ 210,028,171	42,971,353	318,069	1,540,000	$ 154,304,123	$ 154,500,792

Passenger Trips the number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles, regardless of the number of vehicles ridden from origin to destination.
Service Area = a measure of access to transit service in terms of population served and area coverage (square miles).
Total Local Funds = a measure of financial assistance from local entities and tax payers to assist in paying capital.

[1] A Regional Action Plan: Building Talent, Jobs and Economic Opportunity for all (2009). Agenda 360.

BENCHMARKS FOR ALL PEER CITIES

The tables of metrics in the report are sorted, not ranked. They are sorted by value (highest to lowest), and then they are numerated one through twelve (or one through five in the case of the bus-only peer cities). The median order column in each table represents the median score of each city within a category (operational efficiency, service capacity, or fiscal impacts).

I. OPERATIONAL EFFICIENCY

- For this report, operational efficiency is defined as the use of available resources to deliver public transportation services within the identified region/city.
- Relative to its peer cities, Cincinnati is highly efficient in its operations. Compared to all of the peer cities, it earns the most fare revenue per operating expense, the most fare revenue per passenger trip, and the second most fare revenue per vehicle revenue hour.[1]
- When Metro, a bus-only transportation system, is compared to all 11 peer regions (many of which contain multiple modes of transportation), it is the leader in operational efficiency with a median order of #1.5 across all of the different measures listed below.

Table 2: Operational Efficiency

City, State	Fare Revenue Earned per Operating Expense	Fare Revenue Earned per Passenger Trip	Fare Revenue Earned per Vehicle Revenue Hour	Operating Expense per Passenger Mile	Median Order
Austin, TX	#12 $0.11	#12 $0.48	#11 $11.59	# 7 $1.02	#11.5
Charlotte, NC	# 6 $0.23	# 9 $0.87	# 7 $23.59	# 2 $0.73	# 6.5
Cincinnati, OH	**# 1 $0.37**	**# 1 $1.62**	**# 2 $39.72**	**# 6 $0.86**	**# 1.5**
Cleveland, OH	# 5 $0.24	# 6 $1.08	# 4 $32.90	# 8 $1.03	# 5.5
Columbus, OH	# 9 $0.19	# 8 $0.94	# 8 $19.51	#10 $1.27	# 8.5
Denver, CO	# 3 $0.28	# 4 $1.11	# 5 $28.40	# 1 $0.69	# 3.5
Indianapolis, IN	# 8 $0.20	# 5 $1.09	# 9 $16.68	#11 $1.33	# 8.5
Louisville, KY	#10 $0.16	#10 $0.70	#10 $13.07	# 9 $1.13	#10.0
Minneapolis, MN	# 2 $0.32	# 3 $1.11	# 1 $42.42	# 4 $0.79	# 2.5
Pittsburgh, PA	# 4 $0.26	# 2 $1.49	# 3 $37.92	#12 $1.52	# 3.5
Raleigh, NC	# 11 $0.13	#11 $0.55	#12 $ 8.29	# 5 $0.85	#11.0
St. Louis, MO	# 7 $0.22	# 7 $1.07	# 6 $24.40	# 3 $0.75	# 6.5

II. SERVICE CAPACITY

- For this report, service capacity is defined as the amount of public transportation service provided relative to population, time, service area, household, etc.
- On average, Metro is outperformed by its peer regions in all service capacity comparison measures.
- When Metro, a bus-only transportation system, is compared to **all** 11 peer cities (many of which contain multiple modes of transportation), it is an average operator in service capacity with a median order of #7

Table 3: Service Capacity

City, State	Passenger Trips Per Hour	Passenger Trips Per Capita (Service Area)	Passenger Trips Per Capita (City)	Vehicle Hours Per Capita (Service Area)	Vehicle Hours Per Capita (City)	Vehicle Miles Per Capita (Service Area)	Vehicle Miles Per Capita (City)	Median Order
Austin, TX	# 6 22.3	# 5 37.3	# 7 40.5	# 2 1.7	# 7 1.8	# 4 22.8	# 7 24.8	# 6.0
Charlotte, NC	# 3 24.5	# 6 35.6	# 8 35.8	# 5 1.5	# 8 1.5	# 3 23.7	# 8 23.9	# 5.0
Cincinnati, OH	**# 7 22.0**	**# 8 22.4**	**# 6 63.8**	**# 9 1.0**	**# 6 2.9**	**# 8 14.9**	**# 6 42.5**	**# 7.0**
Cleveland, OH	# 2 27.7	# 3 32.7	# 3 155.7	# 4 1.2	# 5 5.6	# 7 15.9	# 5 75.7	# 5.0
Columbus, OH	# 9 18.9	# 11 17.6	# 9 24.2	#12 0.9	# 9 1.3	#10 13.8	# 9 19.0	# 9.0
Denver, CO	# 5 22.4	# 4 37.3	# 4 154.2	# 3 1.7	# 2 6.9	# 2 25.3	# 2 104.4	# 3.0
Indianapolis, IN	#12 14.0	#12 10.4	# 12 11.5	#11 0.7	#12 0.8	#12 11.9	#11 13.0	#12.0
Louisville, KY	#10 17.2	#10 15.5	# 10 20.2	#10 0.9	#10 1.2	#11 12.9	#10 16.9	#10.0
Minneapolis, MN	# 1 33.8	# 2 44.8	# 2 205.9	# 6 1.3	# 4 6.1	# 6 17.4	# 4 80.0	# 4.0
Pittsburgh, PA	# 4 22.6	# 1 45.1	# 1 208.5	# 1 2.0	# 1 9.2	# 1 30.0	# 1 138.7	# 1.0
Raleigh, NC	#11 14.5	# 9 17.9	# 11 14.7	# 8 1.2	#11 1.0	# 9 14.5	#12 11.9	#11.0
St. Louis, MO	# 8 21.4	# 7 27.9	# 5 135.1	# 7 1.3	# 3 6.3	# 5 20.7	# 3 100.2	# 5.0

III. FISCAL IMPACTS

- For this report, fiscal impact is defined as the amount of public funds provided for transportation services relative to population and/or service provision.

- Metro receives among the lowest total local and state funds of the peer regions. Some states, such as Minnesota and Pennsylvania, provide significant amounts of financial support for the local transit systems, and this therefore reduces the need for cities in these states to provide local funding. This report acknowledges that there are two perspectives towards Metro's median order of #10; there are only two peer cities which receive fewer local and state funds. It can be seen as a measure of high self-sufficiency, or a sign of an under-funded system that can burden riders.

- As a result of receiving fewer local funds than most of its peer cities, Metro has become comparatively more reliant on rider fares to provide public transportation services. This reliance has impacted the service area size and expansion opportunities. Put differently, the comparatively exceptional reliance on rider fares to provide services will require fare increases, offsetting service reductions or new sources of funds to expand services. Understandably, passengers are more sensitive to fare changes when the fares they pay bear the majority of the cost of operations.

Table 4: Fiscal Impacts

City, State	Local Funds Per Capita (Service Area)	Local & State Funds Per Capita (Service Area)	Local Funds Per Passenger Mile	Local & State Funds Per Passenger Mile	Median Order
Austin, TX	# 1 $ 143.37	# 2 $143.37	# 2 $0.94	# 2 $0.94	# 2.0
Charlotte, NC	# 2 $ 102.18	# 3 $118.65	# 6 $0.56	# 8 $0.64	# 4.5
Cincinnati, OH	**# 8 $ 44.02**	**# 10 $ 45.04**	**# 10 $0.38**	**#12 $0.39**	**# 10.0**
Cleveland, OH	# 4 $ 93.10	# 6 $ 94.78	# 4 $0.66	# 7 $0.67	# 5.0
Columbus, OH	# 6 $ 64.81	# 8 $ 65.73	# 1 $0.96	# 1 $0.97	# 3.5
Denver, CO	# 5 $ 89.00	# 7 $ 89.00	# 9 $0.41	#11 $0.41	# 8.0
Indianapolis, IN	# 10 $ 23.34	# 12 $ 34.98	# 8 $0.53	# 4 $0.80	# 9.0
Louisville, KY	# 9 $ 40.51	# 11 $ 42.84	# 3 $0.68	# 5 $0.72	# 7.0
Minneapolis, MN	# 12 $ 9.73	# 4 $104.55	# 12 $0.05	#10 $0.52	# 11.0
Pittsburgh, PA	# 11 $ 21.04	# 1 $152.79	# 11 $0.12	# 3 $0.89	# 7.0
Raleigh, NC	# 7 $ 52.49	# 9 $ 60.07	# 5 $0.60	# 6 $0.68	# 6.5
St. Louis, MO	# 3 $100.20	# 5 $100.33	# 7 $0.55	# 9 $0.55	# 6.0

- Table 5 illustrates the relationship between the type of local funds a transportation system receives and the base fare it charges. Cincinnati is unique in its significant reliance on earnings taxes for funding.

Table 5: Base Fares and Local Funds[1]

City, State	Base Fare	Main Types of Local Funding
Austin, TX	$1.00	Sales tax
Charlotte, NC	$2.00	Sales tax
Cincinnati, OH	**$1.75**	**City Earnings tax**
Cleveland, OH	$2.25	Sales tax
Columbus, OH	$2.00	Sales tax
Denver, CO	$2.25	Sales tax
Indianapolis, IN	$1.75	Property tax, State
Louisville, KY	$1.75	Occupational tax
Minneapolis, MN	$1.75	Sales tax
Pittsburgh, PA	$2.50	County, State, Misc.
Raleigh, NC	$1.00	City General fund
St. Louis, MO	$2.00	Sales tax

[1] provided by Metro Planning Department (2013).

BENCHMARKS FOR BUS ONLY PEER CITIES

- When compared to other regions with bus-only public transportation systems, Metro is the most operationally efficient, provides the most service, and receives the least amount of local and state public funds to support its operations.
- Fare revenues earned per passenger trip is closely related to the amount of local funds provided. The lower the amount of local funds provided, the more the passenger pays for fares, leading to greater amounts of earned fare revenue and therefore greater operational efficiency.

Table 6: Bus Only Peer Cities Ordering

	OPERATIONAL EFFICIENCY	SERVICE CAPACITY	FISCAL IMPACTS
Cincinnati, OH	**#1**	**#1**	**#5**
Columbus, OH	#2[1]	#2	#1
Indianapolis, IN	#2[1]	#5	#4
Louisville, KY	#4	#3	#3
Raleigh, NC	#5	#4	#2

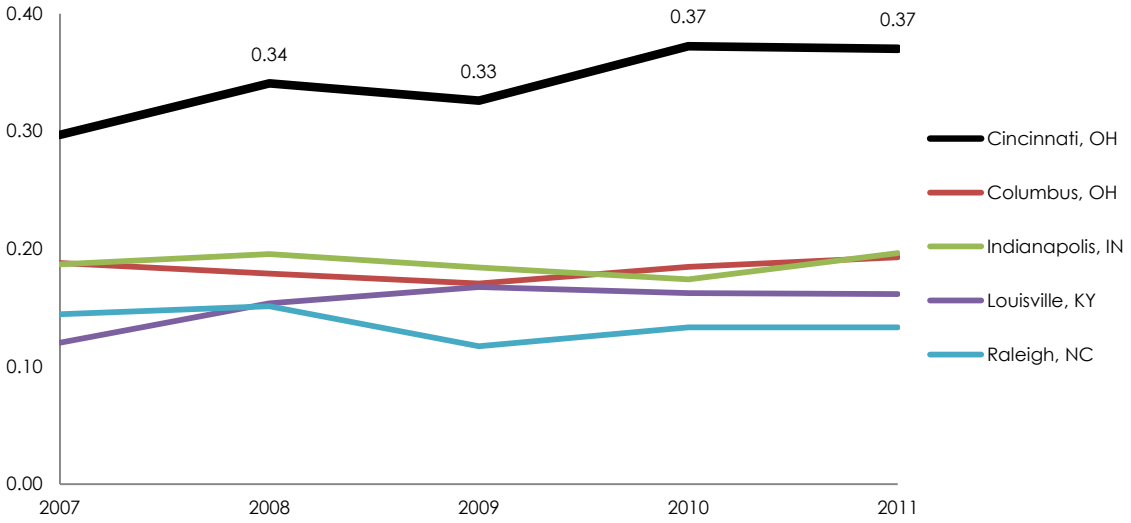
[1] The median order numbers for of Columbus, OH and Indianapolis, IN across all operational efficiency measures tied for second.

HISTORICAL ANALYSIS OF FISCAL AND SERVICE MEASURES[1]

I. OPERATIONAL EFFICIENCY

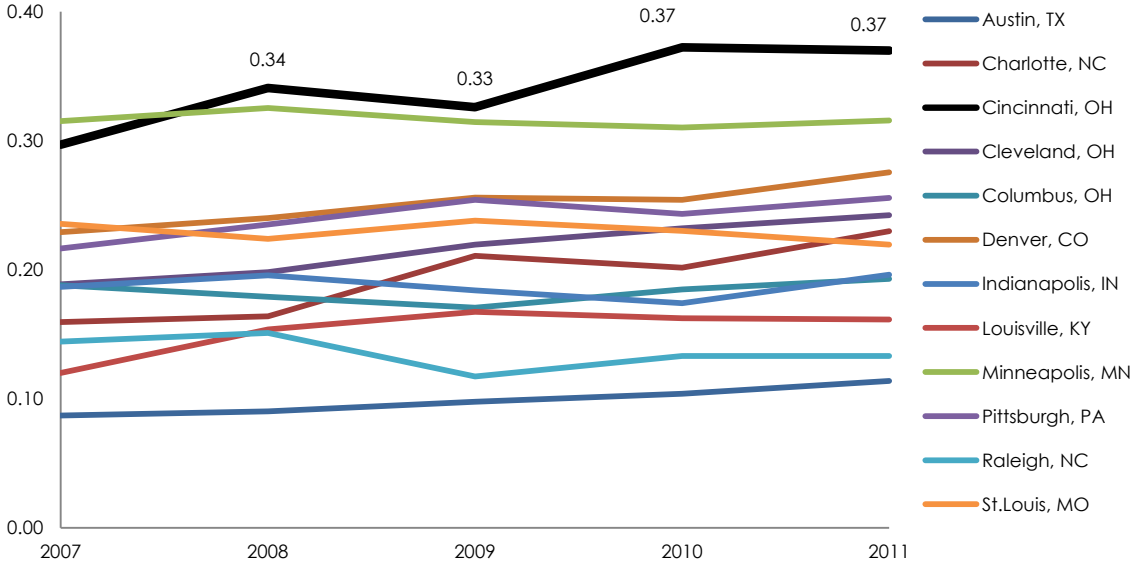
- Analysis of the revenue earned per operating expense (the ratio of fare revenues earned per total operating expenses) highlights the fiscal efficiency of the Metro bus system.
- On average, Metro has earned $0.34 in revenue for every dollar of its expenditures, between 2007 and 2011 while the combined average of the other four bus-only systems is approximately $0.20.
- Over this five year period, Metro's ratio has continued to increase, maintaining its lead as a top-performer against the other peer cities, while it is clear that other systems have generally stayed the same or reduced their dependence on fare revenue for operating expenses.

Figure 1: Bus-Only Revenue per Operating Expense



- Metro has not only out-performed the other four bus-only systems in the peer cities group for the last five years, Metro has also out-performed all of the benchmark cities, including those with multiple transportation systems (with the exception of 2007, when it was second).

Figure 2: Total System Revenue per Operating Expense

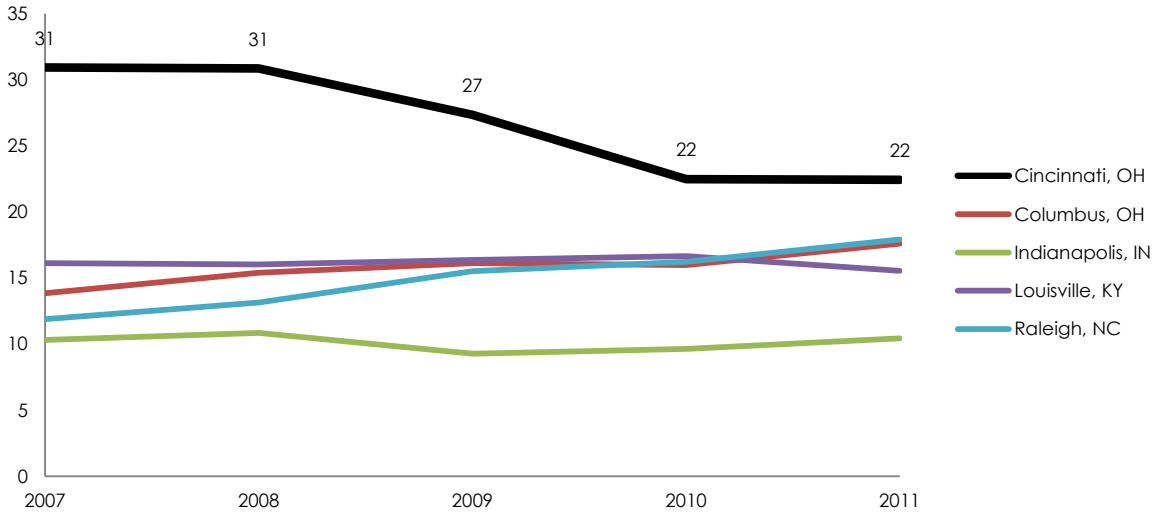


[1]See Appendix for table of all data points

II. SERVICE CAPACITY

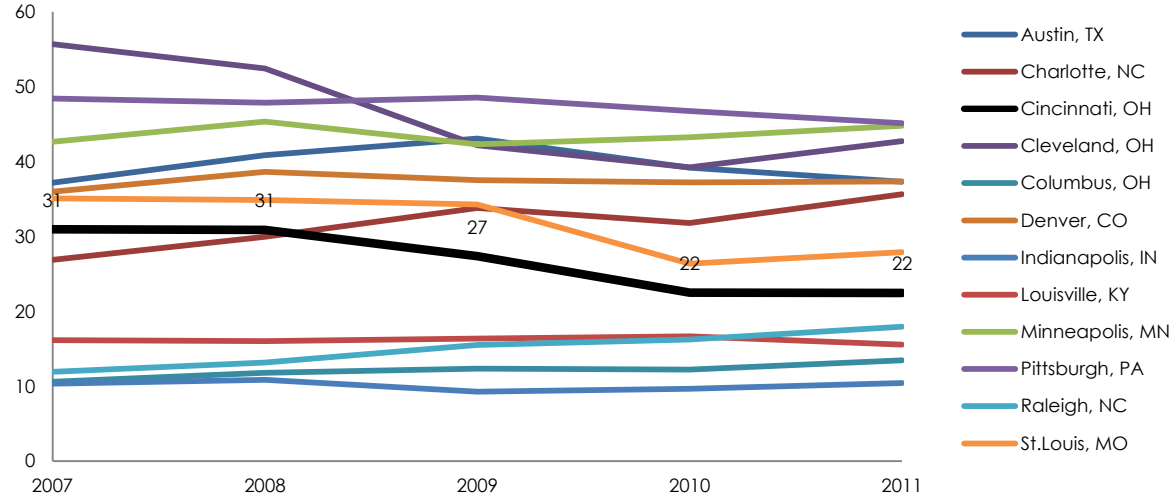
- Examining the passenger trips per capita in the service area of a transit system over time allows for an evaluation of the system's reach and service provision, and provides an opportunity to compare the supply of transit service in multiple service areas.
- While Metro has had the most passenger trips per capita in comparison to the bus-only cities over the past five years, its passenger trips per capita have steadily declined during this period (from 31 per capita in 2007, to 22 in 2011), while two other systems have steadily increased (Raleigh and Columbus) and two have stayed relatively even (Louisville and Indianapolis).

Figure 3: Bus-Only Passenger Trips per Capita (Service Area)



- Metro may outperform the bus-only peer cities under this service measure, but it lags behind in comparison to every system with multiple modes of transit.

Figure 4: Total System Passenger Trips per Capita (Service Area)



III. THE GAP

- This analysis of five years of historical data depicts Metro as an efficient system in a community that is underserved by transit and, comparatively speaking, significantly more dependent on riders to pay the cost of transit services. Put differently, Metro efficiently manages its revenues while providing less service than its peers.
- Should the community decide to expand public transportation services which, due to the current dependence on fare revenues, is likely to primarily require additional local, state and/or federal public funds, Metro's demonstrated operational efficiency should position it favorably to receive and efficiently manage additional funds.
- The next section outlines some of the differences between the transit modes offered by the peer cities with higher ridership levels.

Figure 4: Total System Passenger Trips per Capita (Service Area)

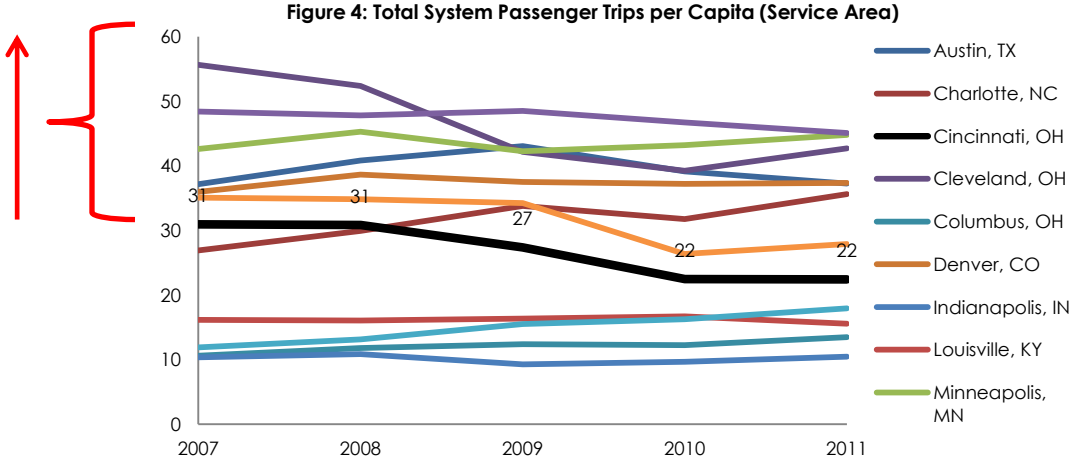


Table 1: Peer Cities Mode Comparisons

City, State	Name	Mode
Austin, TX	Capital Metropolitan Transportation Authority (CMTA)	bus, demand response, vanpool
Charlotte, NC	Charlotte Area Transit System (CATS)	bus, demand response, light rail, vanpool
Cincinnati, OH	Southwest Ohio Regional Transit Authority (SORTA/METRO)	bus, demand response
Cleveland, OH	The Greater Cleveland Regional Transit Authority (GCRTA)	bus, demand response, light rail, heavy rail
Columbus, OH	Central Ohio Transit Authority (COTA)	bus, demand response
Denver, CO	Denver Regional Transportation District (RTD)	bus, demand response, light rail
Indianapolis, IN	Indianapolis and Marion County Public Transportation (IndyGo)	bus, demand response
Louisville, KY	Transit Authority of River City (TARC)	bus, demand response
Minneapolis, MN	Metro Transit	bus, light rail, demand response
Pittsburgh, PA	Port Authority of Allegheny County (Port Authority)	bus, light rail, demand response, inclined plane
Raleigh, NC	Capital Area Transit (CAT)	bus, demand response, taxi
St. Louis, MO	Bi-State Development Agency (METRO)	bus, light rail, demand response

BENEFITS AND RECENT TRENDS IN PUBLIC TRANSPORTATION

I. GENERAL BENEFITS AND TRENDS

- The American Public Transportation Association (APTA) documents an increased interest in public transportation due to a growing population change, changing demographics and generational preferences (Millennials and Empty Nesters in particular desire and seek places with excellent public transportation systems), poverty rates, and the popularity of green and sustainable practices.

- APTA also highlights general public transportation benefits that exist for passengers, non-riders, and policy makers: strengthening the economy, reducing dependence on foreign oil, mitigating air pollution, relieving traffic congestion, mobility options and access for all ages, and increases in real estate value for nearby developments.[1] Many public transportation providers are now incorporating real-time data into their websites and mobile devices, and partnering with companies (corporations, hospitals, hotels, governmental agencies, and non-profits) to provide the best service for their communities.[2]

II. NATIONAL TRENDS BY TRANSPORTATION MODE

- In 2010, APTA reported a count of transportation modes in the top systems in urbanized areas nationally: demand response (715), bus (676), ferryboat (51), and light rail (35).

- Between 2007 and 2010, APTA reported that light rail was the transportation mode that experienced the greatest percentage increase when examining passenger miles by mode. Light rail increased by 12.5 percent while bus increased 0.2 percent.[3]

- The average fare per mode was also reported by APTA in the 2012 Public Transportation Fact Book. On average, trolley buses have the lowest fares and commuter rails have the highest: trolley-bus ($1.50); bus ($1.53); light rail ($1.87); heavy rail ($1.95); demand response ($2.31); and commuter rail ($6.66). [3]

III. PEER CITIES TRENDS

- According to the National Transit Database (2011), Cleveland, Denver, Minneapolis, and Pittsburgh (the systems with the greatest levels of service) offer not only bus service, but also light rail, heavy rail, and inclined plane (see Table 1).

- While light rail, as reported by APTA and cited above, has experienced the most growth when examining passenger miles by mode in recent years, bus rapid transit may offer another viable transit option for less and provide similar benefits as light rail. The American Public Transportation Association reports, "bus rapid transit (BRT) is promising to revolutionize public transportation, with its high-frequency service featuring superior passenger amenities along exclusive rights of way. Features such as bus stations, level boardings, off-board fare collection, and traffic signal priority lead to a much more satisfying rider experience. In just a few short years, this new mode, considered midway between light rail and traditional bus service, has significantly expanded its presence across the U.S."[2]

- The top service providing cities in the peer comparison group are all pursuing BRT as a mode option. The organizations in Austin, Cleveland, Denver, and Minneapolis all have projects and/or plans in place for BRTs. These cities continue to explore new transit options with other plans and projects including heavy rail, commuter rail, light rail, and street car.[4]

[1] Public Transportation: Moving America Forward (2010). American Public Transportation Association.
[2] America Rides the Bus. American Public Transportation Association.
[3] 2012 Public Transportation Fact Book (2012). American Public Transportation Association.
[4] Transit Space Race Projects (2013). Reconnecting America.

INDUSTRY IMPACTS

Businesses that operate within the Cincinnati Metropolitan Statistical Area (MSA), as described in Table 2 and as defined by the Bureau of Labor Statistics North American Industry Classification System (NAICS), benefit from urban transit system expenditures. The top industries (that make up greater than 1% of total sales in the Cincinnati MSA) affected by urban transit system expenditures are described in the table below. The most affected industries for the Cincinnati area and the nation as a whole are compared.

Due to the types of expenditures necessary to run a bus-only transit system, the top industries affected by urban transit system expenditures (in both the Cincinnati MSA and the U.S.) are manufacturing, transportation and warehousing, administrative and support and waste management and remediation services, and finance and insurance.

The American Public Transportation Association (APTA) estimates that, "Every $1 billion of investment in the nation's transportation infrastructure supports 36,000 jobs. These include durable and non-durable manufacturing jobs, as well as jobs in other industries, such as construction, finance, insurance and real estate, retail and wholesale trade, and services. Sixty-seven percent of the jobs directly supported by capital investment in the public transit industry replace lost blue-collar jobs with "green" jobs." [1] Additionally, they estimate that $1 billion of investment generates $3.6 billion in business sales and $400 million in tax revenues, therefore summarizing that a dollar of investment results in approximately four dollars in economic activity.

Table 2: Top Industries affected by Urban Transit System Indirect Spending (>1%)

Cincinnati MSA		U.S.	
Industry	**% Total Sales**	**Industry**	**% Total Sales**
Transportation and Warehousing	24%	Manufacturing	34%
Administrative and Support and Waste Management and Remediation Services	17%	Transportation and Warehousing	13%
Finance and Insurance	12%	Administrative and Support and Waste Management and Remediation Services	9%
Professional, Scientific, and Technical Services	8%	Finance and Insurance	9%
Real Estate and Rental and Leasing	7%	Mining, Quarrying, and Oil and Gas Extraction	6%
Government	6%	Professional, Scientific, and Technical Services	6%
Manufacturing	6%	Real Estate and Rental and Leasing	4%
Management of Companies and Enterprises	5%	Wholesale Trade	4%
Wholesale Trade	3%	Management of Companies and Enterprises	3%
Information	3%	Information	3%
Other Services (except Public Administration)	2%	Government	2%
Retail Trade	2%	Retail Trade	1%
Accommodation and Food Services	2%	Other Services (except Public Administration)	1%
Construction	1%	Accommodation and Food Services	1%
Arts, Entertainment, and Recreation	1%	Utilities	1%
Utilities	1%	Construction	1%
		Arts, Entertainment, and Recreation	1%

[1] Public Transportation: Moving American Forward (2010). APTA.

METHODOLOGY

I. DATA SOURCES

- Data utilized in this report was provided by Metro and collected from national data sources.
- National Transit Database (NTD) data tables (2011); Table 19: Transit Operating Statistics: Service Supplied and Consumed; Table 26: Fare per Passenger; Table 1: Summary of Operating Funds Applied; Table 17: Energy Consumption.
- American Public Transportation Association (APTA), 2011.
- U.S. Census Bureau, tables DP3 and DP4, 2011.

II. NOTES AND ASSUMPTIONS

- All passenger trips in the report are UNLINKED passenger trips (number of passengers who board public transportation vehicles; passengers are counted each time they board vehicles, regardless of the number of vehicles ridden from origin to destination).
- In the Industry Impacts section of the Return on Investment Chapter, it discusses the Urban Transit Systems industry group as defined by the Bureau of Labor Statistics' North American Industry Classification System (NAICS). This group includes the following industries: mixed mode transit systems; commuter rail systems; bus and other motor vehicle transit systems; all other transit and ground passenger transportation; and other support activities for road transportation. The Economics Center focused on only relevant industries within the group and therefore did not include the following industries that are typically included in the urban transit systems industry group in this analysis: special needs transportation; motor vehicle towing; and limousine service.
- Consistent with NTD reporting definitions, contract revenues with non-governmental entities are included in the fare revenue totals.
- The term "total local funds" is used to refer to the following variables provided by NTD: two total local funds amounts (general revenue; and dedicated and other) and one directly generated fund amount (dedicated and other).

III. ALL BENCHMARK MEASURES

- The tables of metrics in the report are sorted, not ranked. They are sorted by value (highest to lowest), and then they are numerated one through twelve (or one through five in the case of the bus-only peer cities).

About the Economics Center

The Research and Consulting division of the Economics Center provides the knowledge building blocks that help clients make better policy and economic development decisions. Our dynamic approach and critical data analysis empower leaders to respond to changing economic conditions, strengthen local economies and improve the quality of life for their communities.

Figure 1: Historical Passenger Trips per Capita (Service Area)

Year	Austin, TX	Charlotte, NC	**Cincinnati, OH**	Cleveland, OH	Columbus, OH	Denver, CO	Indianapolis, IN	Louisville, KY	Minneapolis, MN	Pittsburgh, PA	Raleigh, NC	St. Louis, MO
2007	37	27	**31**	43	14	36	10	16	43	48	12	35
2008	41	30	**31**	40	15	39	11	16	45	48	13	35
2009	43	34	**27**	32	16	37	9	16	42	49	16	34
2010	39	32	**22**	30	16	37	10	17	43	47	16	26
2011	37	36	**22**	33	18	37	10	16	45	45	18	28

Figure 2: Historical Revenue Earned Per Operating Expense

Year	Austin, TX	Charlotte, NC	**Cincinnati, OH**	Cleveland, OH	Columbus, OH	Denver, CO	Indianapolis, IN	Louisville, KY	Minneapolis, MN	Pittsburgh, PA	Raleigh, NC	St. Louis, MO
2007	0.09	0.16	**0.30**	0.19	0.19	0.23	0.19	0.12	0.32	0.22	0.14	0.24
2008	0.09	0.16	**0.34**	0.20	0.18	0.24	0.20	0.15	0.33	0.24	0.15	0.22
2009	0.10	0.21	**0.33**	0.22	0.17	0.26	0.18	0.17	0.31	0.25	0.12	0.24
2010	0.10	0.20	**0.37**	0.23	0.18	0.25	0.17	0.16	0.31	0.24	0.13	0.23
2011	0.11	0.23	**0.37**	0.24	0.19	0.28	0.20	0.16	0.32	0.26	0.13	0.22

DEFINITIONS

I. GENERAL

- **Fare revenues earned**: All income received directly from passengers, paid either in cash or through pre-paid tickets, passes, etc. It includes donations from those passengers who donate money on the vehicle. It includes the reduced fares paid by passengers in a user-side subsidy arrangement.
- **Total operating expenses:** Salary, wages, and benefits; materials and supplies; purchased transportation; and other operating expenses.
- **Unlinked passenger trips:** The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination. All references to passenger trips in the report refer to unlinked passenger trips.
- **Passenger miles travelled**: Passenger miles travelled is defined as the cumulative sum of the distances ridden by each passenger.
- **Service area:** Service Area is a measure of access to transit service in terms of population served and area coverage (square miles).
- **Total local funds:** a measure of financial assistance from local entities and tax payers to assist in paying capital. Total local funds include tax levies, general funds, specific contributions, reserve funds, and donations.
- **Vehicle revenue hour**: The hours that vehicles are scheduled to or actually travel while in revenue service. Vehicle revenue hours include layover / recovery time, but exclude, deadhead, operator training, and vehicle maintenance testing, as well as school bus and charter services.
- **Operating expenses**: The expenses associated with the operation of the transit agency, and classified by function or activity, and the goods and services purchased.

II. OPERATION EFFICIENCY METRICS

- **Fare revenue per vehicle revenue hour:** Ratio of fare revenues earned per vehicle revenue hour (hours during which a vehicle provides services that earn revenue; excludes testing, training, etc.).
- **Operating expense per passenger mile:** Ratio of total operating expense per passenger mile.
- **Fare revenues earned per operating expense:** Ratio of fare revenues earned per total operating expense.
- **Fare revenues earned per passenger trip:** Ratio of fare revenues earned per unlinked passenger trip.

III. SERVICE CAPACITY METRICS

- **Passenger trips per hour:** Ratio of unlinked passenger trips per vehicle hour.
- **Passenger trip per capita (city population):** Ratio of unlinked passenger trips per city population.
- **Passenger trip per capita (service area):** Ratio of unlinked passenger trips per service area.
- **Vehicle miles per capita (city population):** Ratio of annual vehicles miles per city population.
- **Vehicle miles per capita (service area):** Ratio of annual vehicle miles per service area.
- **Vehicle hours per capita (city population):** Ratio of annual vehicle hours per city population.
- **Vehicle hours per capita (service population):** Ratio of annual vehicle hours per service area.

IV. FISCAL IMPACT METRICS

- **Local funds per capita (service area):** Ratio of total local funds per service area.
- **Local and state funds per capita (service area):** ratio of total local and state funds per service area.
- **Local funds per passenger mile:** Ratio of total local funds per passenger mile.
- **Local and state funds per passenger mile:** Ratio of total local and state funds per passenger mile.

THE CONNECTED REGION

GREATER CINCINNATI & NORTHERN KENTUCKY

A 2015 Regional Indicators Report

TRANSIT

Agenda 360

skyward
ELEVATING NORTHERN KENTUCKY

ULI Urban Land Institute

Cincinnati USA Regional Chamber

ABOUT THIS REPORT

This Regional Indicators Report acknowledges the strong relationship between a vibrant economy and a robust regional transit system. Whether it's a critical support to connect people to jobs and greater self-sufficiency, or a preferred mode of travel for a young professional seeking to live without a car, transit matters.

Leveraging transit for economic prosperity requires crafting a vision of what *could* be and then building a plan to make it happen. Regions we compete with for people and jobs have used community-driven processes and innovative public-private partnerships to develop bold plans that complement and grow existing systems and introduce new modes of travel.

In these pages, we look not just at transit (scheduled bus and rail services) but also at multiple modes of travel that interact with public transit and that support a lifestyle that is less dependent on private cars for everyday needs. These include walking and bicycling, but also on-demand and sharing systems for both bikes (Red Bike) and cars (Zipcar, Uber, Lyft).

Transit is already an integral part of our region. Buses move more than 21,000 commuters to jobs every day and serve many more thousands in daily trips for goods and services. Some 20,000 people in our region walk to work every day, and another 3,000 ride bikes.[1]

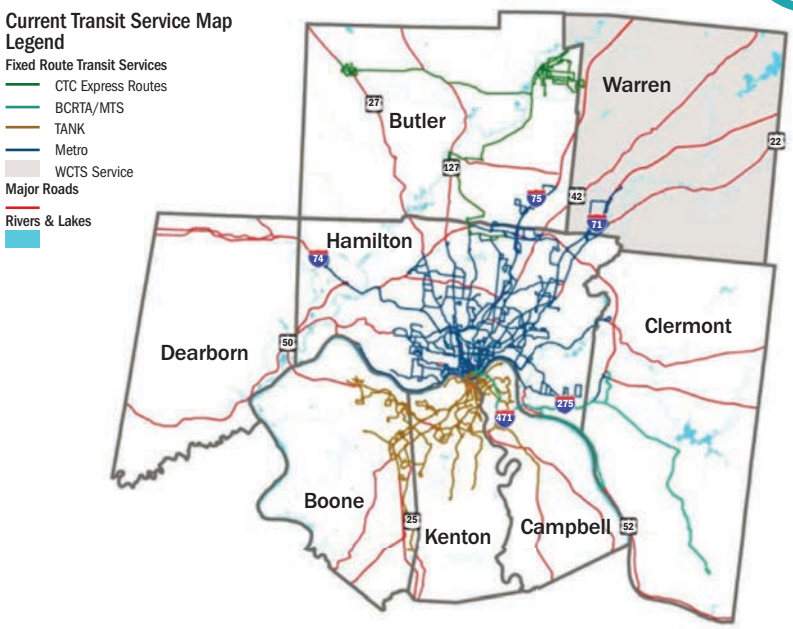
As the Greater Cincinnati regional job market expands[2], baby boomers continue to age, urban living grows, and the cost of car ownership rises, a more robust regional public transit system will only become more important to our economy.

STATE OF THE SYSTEM

The Cincinnati region currently has seven separate public transit systems. Metro, the largest, serves 81% of all transit trips in the region with the majority of its service within the City of Cincinnati. The second largest system, TANK (with 17% of trips), serves Boone, Campbell and Kenton counties in Northern Kentucky. Smaller systems include the Butler County Regional Transit Authority, Dearborn County Catch-A-Ride, Clermont Transportation Connection, Middletown Transit Service and Warren County Transit System. The Cincinnati Streetcar is slated to open for service in September 2016, offering a new transit option in the urban core.

Seven of the 12 regions in our peer set have rail systems of various capacity and extent. The portion of transit trips carried on rails varies from a high of 35% in St. Louis to a low of 2% in Austin. Over all regions, 87.4% of trips are made by bus. [3]

REGIONAL BUS SERVICE MAP



** OKI 2015. All data included in this report is for the 15-county MSA. This map shows the 8 counties where transit service is located.*

1. ACS, 2014, 1 year estimate

2. U.S. Bureau of Economic Analysis

3. National Transit Database, Average 2011-2013

KEY INSIGHTS

- Minneapolis, Denver and Pittsburgh have spent the most on public transit in recent years and also have the highest ridership rates.
- Gross differences in transit spending are partly explicable by funding sources: Pittsburgh and Minneapolis have more than 50% of their operating costs covered by state subsidy. In the Tristate, subsidies have historically been low; systems in our region get about 0.2% of their operations from state.
- In Denver, a regional sales tax levy provides a steady stream of capital funding (in the billions) for an expanding regional system. However, in Cincinnati, each jurisdiction decides if they will support transit and at what level.
- Nationwide, millennials are taking fewer trips, shorter trips and a larger share of trips by modes other than driving. This decline was mostly due to the 2008 recession, but the fact that many Millennials have not returned to cars with the economic recovery may indicate that we are experiencing a "new normal."
- Locally, Millennials (18-34) are still driving at a high rate, but growth of Millennial drivers has been slowing along with national trends. Between 2000 and 2013 (1), all peer regions—except for Cincinnati—saw a drop in the percentage of Millennials commuting by car. It's hard to know whether Cincinnati's patterns are the result of choice or a lack of options.

HOW TO READ THIS REPORT

Like all Regional Indicators Reports, The Connected Region compares the Cincinnati MSA with 11 peer cities* that we know we compete with for people and jobs. In all Regional Indicators Reports, region are ranked by performance under each indicator. The number one position is generally considered "best."

*Austin, Charlotte, Cleveland, Columbus, Denver, Indianapolis, Louisville, Minneapolis, Pittsburgh, Raleigh and St. Louis

INNOVATIVE TRANSIT TECHNOLOGY

New technologies like real-time transit data that tells a commuter when the next bus is arriving and mobile applications that allow you to review opportunities for travel on multiple transportation modes have made it possible for more people to lead full and active lives without owning a car. Each of these tools is valuable on its own, but combined with transit and walkable and bikeable infrastructure, they make for a robust transportation system.

In this report, "region" and "Cincinnati" refer to the federally defined 15-county Cincinnati-Middletown-OH-KY-IN Metropolitan Statistical Area (MSA). The data for peer regions also refers to the respective MSAs.

1. Census 2000 and ACS 2009-2013 5-year estimate

A VIEW FROM THE SUBURBS

> Strategic routes and partnerships connecting people to businesses, jobs, healthcare and shopping benefit our economy and restore a level of dignity and pride to our residents.

Successful connections contribute to the vitality of our businesses and communities. The return on investment can be significant. Statistics from the Economic Development Research Group show that a $1 investment in public transit has a rate of return ranging from $4-$9.

CHRISTINE MATACIC
Liberty Township trustee and OKI board member

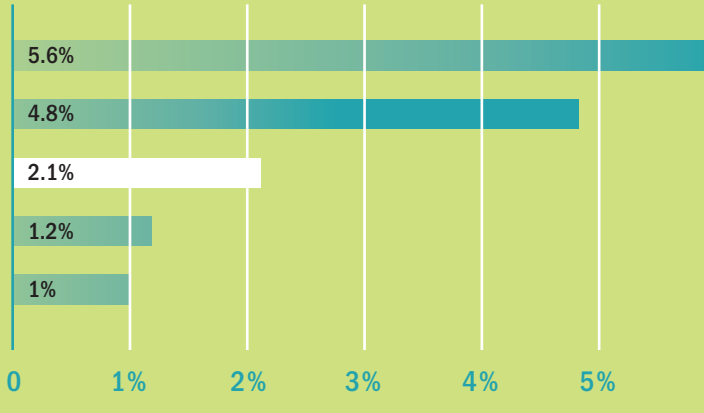
TRANSIT USE PER CAPITA [1]

This indicator shows the average number of trips per person made on transit each year. Many people never use transit, and many others use it every day, so this is not meant to be a measure of the average person's experience; it is a measure of overall transit use. With an average of 10 trips annually per person, Cincinnati is ninth among peer regions. For the sake of comparison, the Chicago metropolitan area has about 44 annual transit trips per capita.

1. DENVER	37.1
2. MINNEAPOLIS	27.4
9. CINCINNATI	10.0
11. RALEIGH	7.7
12. INDIANAPOLIS	5.5

WORKFORCE COMMUTING BY TRANSIT [2]

This indicator shows the percentage of workers commuting by bus or rail. Cincinnati ranks seventh and performs below both the national average of 5.2% and below the peer-city average of 3.1%. In order for the Cincinnati region to reach Pittsburgh's rate, 35,000 more people would have to switch to transit for their commute.

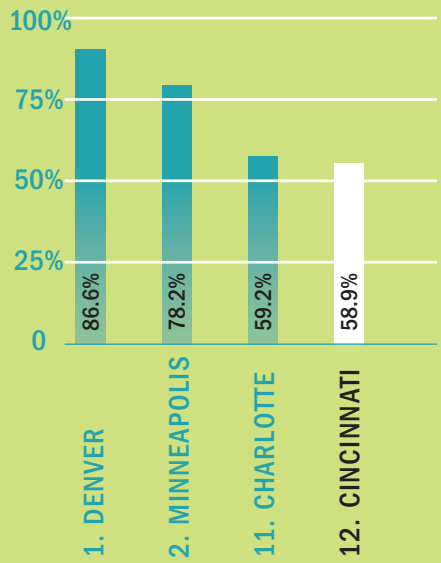


1. Annual unlinked passenger trips per capita, National Transit Database, 2011-2013 average and ACS 2012 population estimates

2. Workers 16 and older, ACS 2014, 1-year estimate

SHARE OF JOBS IN NEIGHBORHOODS WITH TRANSIT [1]

Many parts of each region are inaccessible by public transit, with the effect that some employment opportunities are literally out of the reach of transit users, particularly in suburban areas. Cincinnati ranks last in this indicator, with only 58.9% of our region's jobs reachable by public transit.



ACCESS TO JOBS USING TRANSIT [1]

This measure is an average of each job's accessibility to workers by transit in 90 minutes or less. The portion of the workforce that can reach a job is significantly reduced when commutes stretch longer than 90 minutes. The Cincinnati region's job access rate is roughly half of Denver's, the top performing region, with jobs accessible by transit connecting with only 22.5% of the region's working population.

1. DENVER	45.6%
2. AUSTIN	30.1%
7. CINCINNATI	22.5%
11. RALEIGH	21.8%
12. PITTSBURGH	20.5%

TRANSIT DRAWS JOBS TO THE REGION

> "In one of our first meetings with General Electric's site selection team for its U.S. Global Operations Center, direct access to safe and convenient multiple modes of transportation was important.
>
> Cincinnati's commitment to build the streetcar, in combination with other existing and potential transit-related development, were factors we discussed as GE chose The Banks."

TOM GABELMAN
Hamilton County Counsel, The Banks

1. Brookings Institution, Where the Jobs Are: Employer Access to Labor by Transit, 2012

WORKFORCE WALKING OR BIKING TO WORK [1]

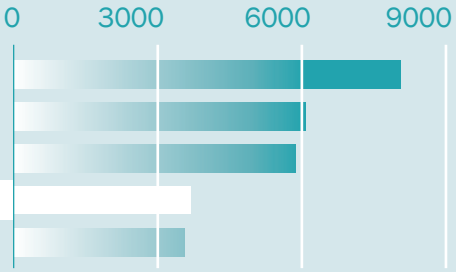
This indicator shows the percentage of workers either walking or riding a bike to work. Pittsburgh has the largest share of pedestrian commuters at 3.4%, and Austin has the largest share of bicycle commuters, at 0.7%. In real numbers, the Cincinnati region is estimated to have roughly 3,000 bike commuters and about 20,000 people commuting on foot.

1. PITTSBURGH	3.9%
2. MINNEAPOLIS	3.4%
6. AUSTIN	2.4%
7. CINCINNATI	2.3%
11. INDIANAPOLIS	1.6%
12. RALEIGH	1.5%

JOBS ACCESSIBLE BY A WALK OF 30 MINUTES OR LESS [2]

Nationally, walking is the third most common way to commute after driving and transit. Walking to work accounts for 2.8% of trips to work nationally and roughly 5% of such trips in large cities. In Cincinnati walking accounts for about 2.0% of commutes.

1. DENVER	8,191
2. MINNEAPOLIS	6,063
3. AUSTIN	5,916
11. CINCINNATI	3,290
12. LOUISVILLE	3,236



MILLENNIALS COMMUTING BY CAR [3]

Locally, Millennials (18-34) are still driving at a high rate, but growth of Millennial drivers has been slowing along with national trends. For the period between 2000 and 2013 [4], all peer regions—except for Cincinnati—saw a drop in the percentage of Millennials commuting by car.

1. PITTSBURGH	82.5%
2. DENVER	85.4%
9. CINCINNATI	91.3% (9T)
11. LOUISVILLE	91.9%
12. INDIANAPOLIS	93%

BICYCLING

Like most American regions, Cincinnati has seen growth in the number of cyclists hitting the roads in recent years. Only a small share of all trips are made by bike, but the number is growing quickly. We've responded by implementing a regional bike-sharing system and adding bike lanes on some frequently used routes.

Cycling, besides having the potential to replace short car trips, is also an important last-mile solution, allowing people access to transit from places that are outside of walking distance from a stop or station.

1. Workers 16 and older, ACS 2014, 1 year estimate

2. University of Minnesota, Access Across America: Walking 2014

3. ACS 2009-2013 5-year estimate

4. Census 2000 and ACS 2009-2013 5-year estimate

TRANSIT OPERATIONS FUNDING PER CAPITA [1]

Operations funding is the money that keeps a transit system in motion every day. Generally speaking, the more money there is to pay for service, the more service there will be. As an example, if operations funding increases, a service might extend later into the evening or operate more frequently, reducing wait times. The amount of money spent on operations is strongly correlated with the number of people using transit.

1. DENVER	$180.24
2. PITTSBURGH	$161.63
9. CINCINNATI	$52.28
11. INDIANAPOLIS	$31.48
12. RALEIGH	$27.54

PORTION OF TOTAL TRANSIT OPERATIONS FUNDING COMING FROM FARES [2]

All transit systems are subsidized by public funds, with only a portion of the total cost paid directly by customers. Even though Cincinnati does not rank highly in terms of overall public funding for transit, our region does a good job of managing its resources in such a way that many people are still willing to pay fares to use transit. Depending on your perspective, this ranking could be inverted due to the relatively large responsibility placed on the rider and the relatively limited responsibility placed on the larger community.

1. CINCINNATI	32.6%
2. MINNEAPOLIS	27.6%
11. LOUISVILLE	16.9%
12. AUSTIN	11.7%

TRANSIT CAPITAL INVESTMENT PER CAPITA [3]

Capital or infrastructure funding is money that is used to purchase physical things that are necessary for transit to operate and to operate efficiently. The point of capital investment is to make things bigger, better or more efficient in the future. However future transit service is still entirely dependent on the availability of operations funding to keep it going.

1. DENVER	$264.45
2. MINNEAPOLIS	$127.23
9. CINCINNATI	$12.99
11. LOUISVILLE	$5.54
12. INDIANAPOLIS	$4.28

WHY DOES THIS MATTER?

Over the last few years, the nation has been having a broad discussion about the importance of public transit. People from our region have hardly been quiet observers of this discussion; transit debates here are often fractious and unproductive. The essential division is not about whether we can or should have transit service, but whether it's worth the money and who will pay for it.

After decades of declining investment in transit, many regions—including those that perform well in this report—are taking this moment of introspection to reinvest in their transit systems, thereby reinvigorating their core cities and shifting development toward walkable neighborhoods served by transit.

It's interesting to note that competitive regions that out-perform Cincinnati on 15 top indicators of economic strength [4], tend to top the transit indicators as well.

As businesses and neighborhoods expand in our region, we need to think strategically about the ways in which people access jobs, goods and services, education, healthcare, recreation and more. Transit should be an important topic of discussion as we grow talent, jobs and economic opportunity in service to a more vibrant region.

1. National Transit Database, Average for 2011, 2012 & 2013 and ACS 2012, 1-year estimate

2. National Transit Database, Average for 2011, 2012 and 2013

3. National Transit Database, Average for 2011, 2012 and 2013 and ACS 2012, 1-year estimate

4. regional-indicators.org

TRANSIT'S IMPACT ON HEALTH

In walkable, bikeable and transit-oriented communities people are more physically active and have lower body weight.

Most Americans spend an average of only six minutes walking each day. Public transit users spend an average of 19 minutes walking each day, getting them much closer to the 22 minutes of daily walking recommended by the Centers for Disease Control for optimal health. [1]

In order to achieve health improvements, roads need to be designed to be pedestrian, cyclist and public-transit friendly and allow people to use active transportation methods in their everyday lives. Increasing active transportation options leads to improvements in rates of diabetes, obesity and cardiovascular disease. [2]

MEGAN FOLKERTH
Program Officer, Interact For Health

1. Better Transportation Options=Healthier Lives
2. Centers for Disease Control and Prevention, Transportation Health Impact Assessment Toolkit

TRANSIT AND THE ENVIRONMENT

Transit produces significantly lower greenhouse gas emissions per passenger mile than private vehicles;

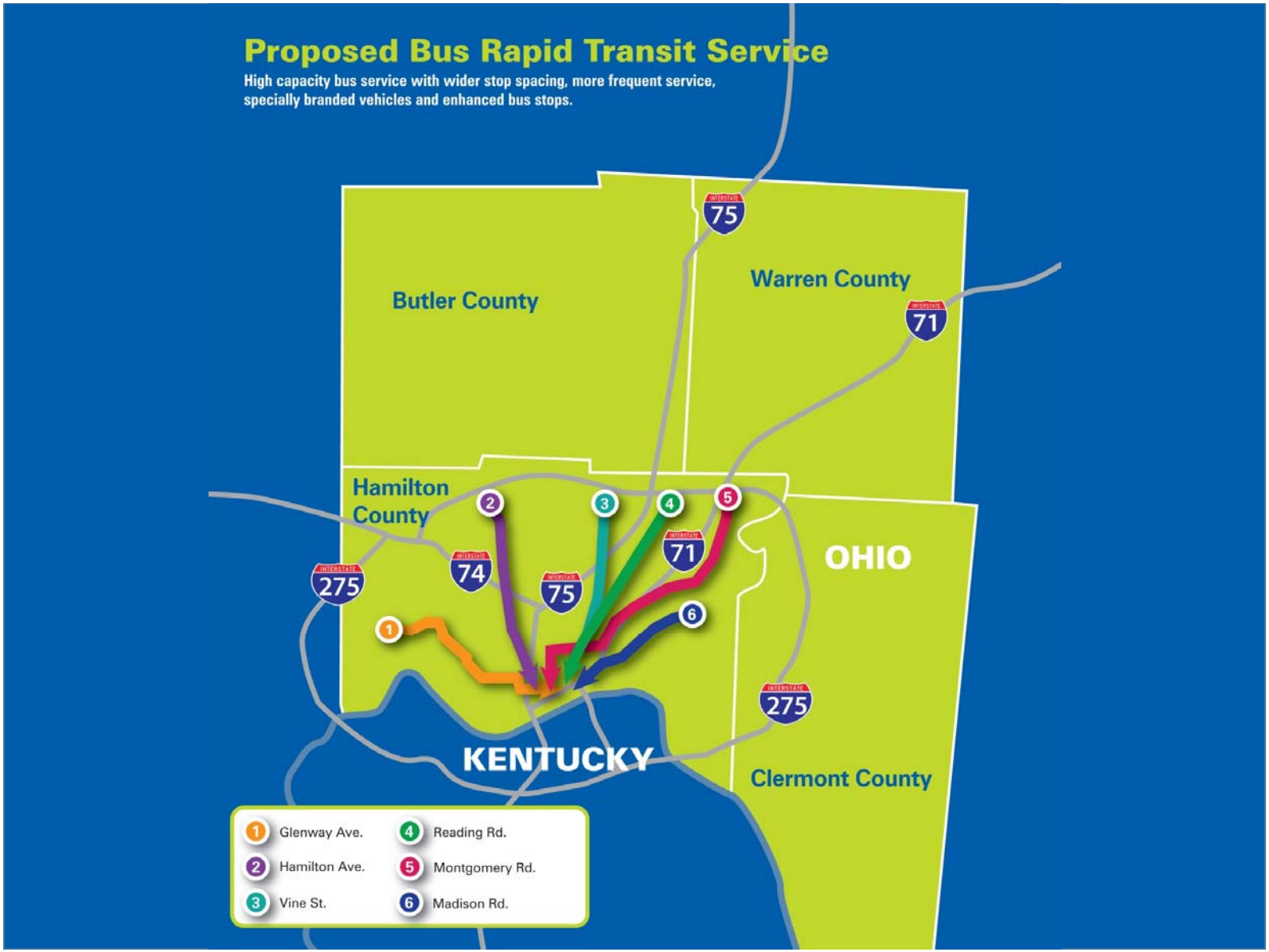
33% less in the case of buses. The average 40-passenger bus only has to carry seven passengers to be more efficient than the average single-occupancy vehicle. [1]

Sharing rides through public transportation decreases the need to build more transportation infrastructure and manufacture new vehicles, meaning fewer environmental impacts and improved regional air quality. Transit also saves fuel as it reduces the number of vehicles stuck in gridlock that waste fuel and generate emissions.

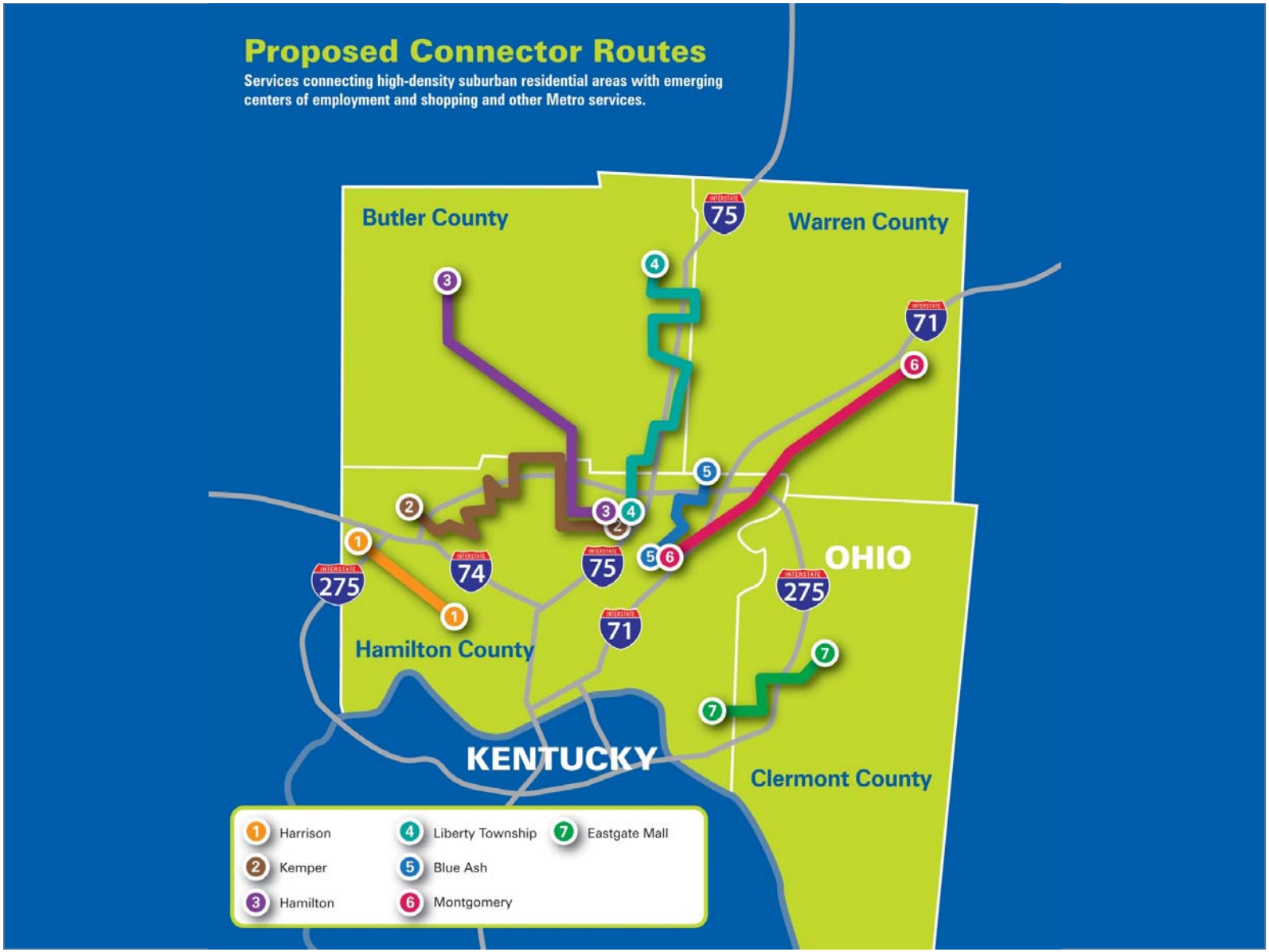
KRISTIN WEISS
Executive Director, Green Umbrella

1."Public Transportation's Role in Responding to Climate Change," Federal Transit Administration, Updated 2010

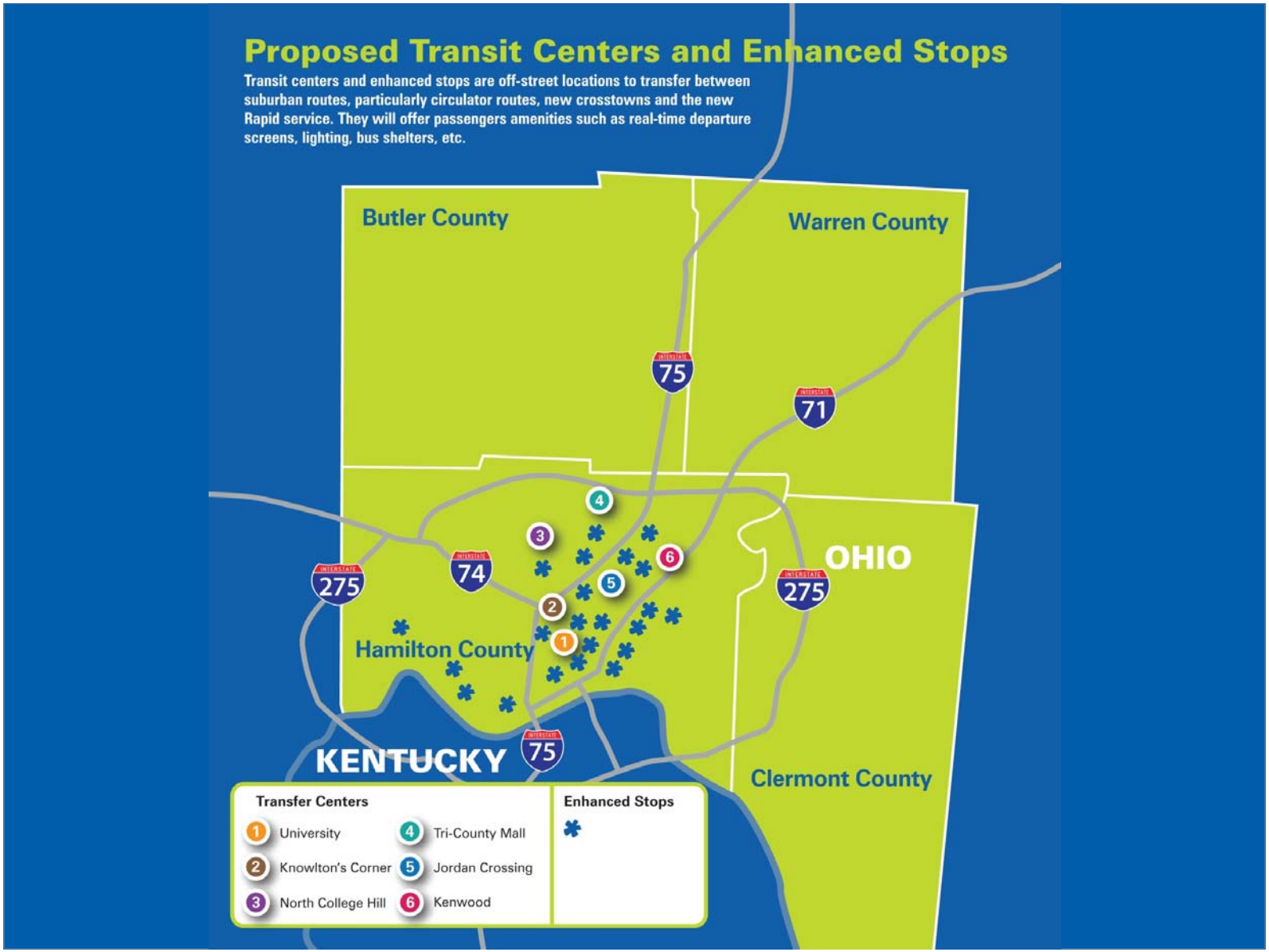

Long-term enhancements
Butler County
Warren County
71
275
Hamilton County
75
OHIO
275
275
KENTUCKY
Clermont County

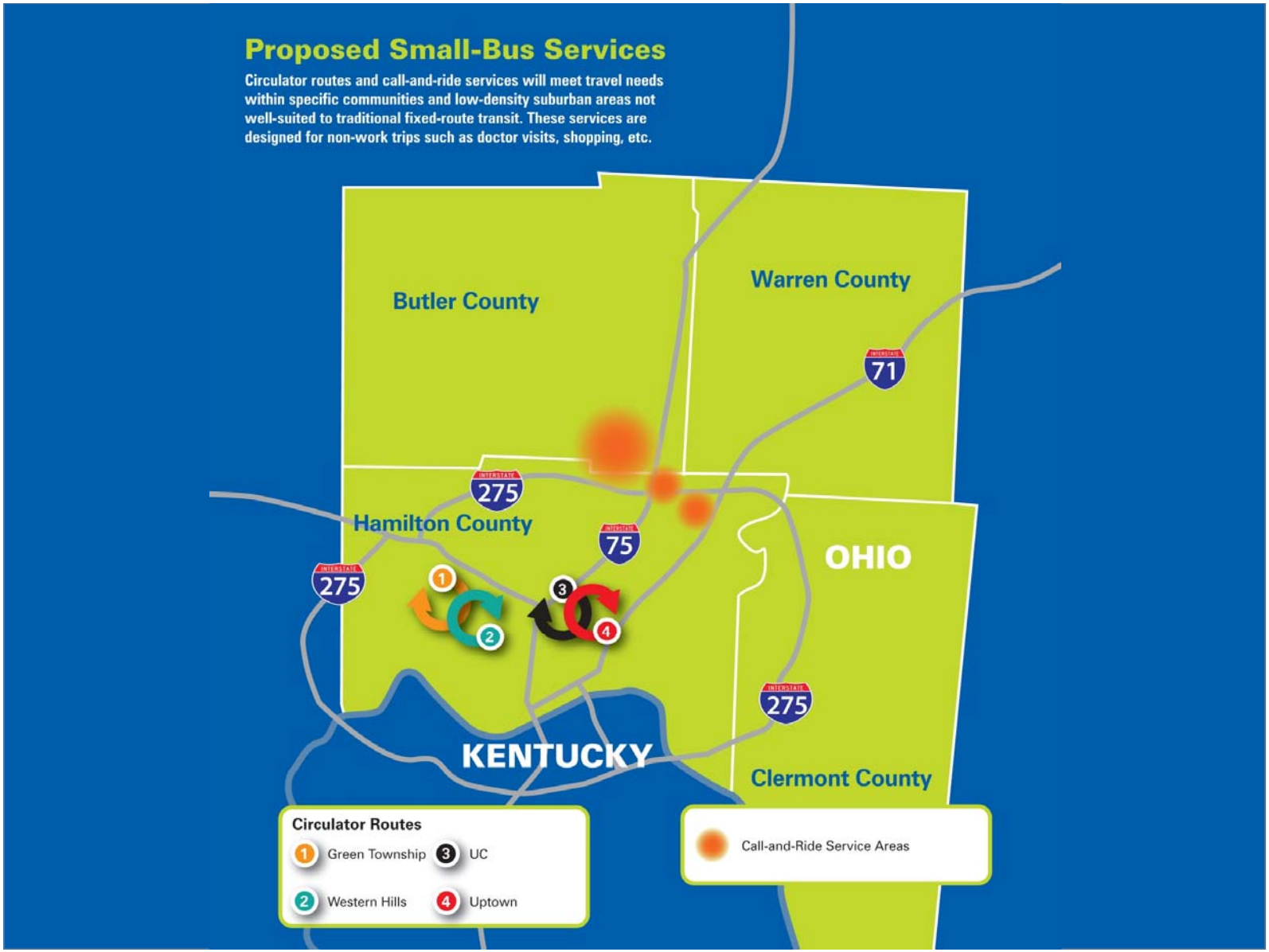

Proposed Bus Rapid Transit Service
High capacity bus service with wider stop spacing, more frequent service, specially branded vehicles and enhanced bus stops.
Butler County
Warren County
Hamilton County
OHIO
KENTUCKY
Clermont County
75
71
275
74
1 Glenway Ave.
2 Hamilton Ave.
3 Vine St.
4 Reading Rd.
5 Montgomery Rd.
6 Madison Rd.


Proposed Express Routes
Routes designed to bring suburban commuters into downtown Cincinnati and take city residents from Cincinnati to jobs in outlying areas
Butler County
Warren County
Hamilton County
OHIO
KENTUCKY
Clermont County
75
71
275
74
1 Green Township
2 Union Centre
3 Liberty Township Revised Rt. 42X
4 US 42
5 Mason


Proposed Connector Routes
Services connecting high-density suburban residential areas with emerging centers of employment and shopping and other Metro services.
Butler County
Warren County
Hamilton County
Clermont County
OHIO
KENTUCKY
75
71
74
275
1 Harrison
2 Kemper
3 Hamilton
4 Liberty Township
5 Blue Ash
6 Montgomery
7 Eastgate Mall


Proposed Crosstown Routes
Non-downtown oriented routes that provide north/south or east/west connections to other routes and services without traveling downtown.
Butler County
Warren County
Hamilton County
OHIO
KENTUCKY
Clermont County
75
71
275
74
1 Glenway Crossing-Jordan Crossing Center
2 Glenway Crossing-Madisonville
3 Galbraith Rd.
4 Jordan Crossing Center-Columbia-Tusculum
5 Jordan Crossing Center-Hyde Park


Proposed Transit Centers and Enhanced Stops
Transit centers and enhanced stops are off-street locations to transfer between suburban routes, particularly circulator routes, new crosstowns and the new Rapid service. They will offer passengers amenities such as real-time departure screens, lighting, bus shelters, etc.
Butler County
Warren County
Hamilton County
Clermont County
OHIO
KENTUCKY
75
71
275
74
275
75
Transfer Centers
1 University
2 Knowlton's Corner
3 North College Hill
4 Tri-County Mall
5 Jordan Crossing
6 Kenwood
Enhanced Stops


Proposed Small-Bus Services
Circulator routes and call-and-ride services will meet travel needs within specific communities and low-density suburban areas not well-suited to traditional fixed-route transit. These services are designed for non-work trips such as doctor visits, shopping, etc.
Butler County
Warren County
71
275
Hamilton County
75
275
OHIO
1
2
3
4
275
KENTUCKY
Clermont County
Circulator Routes
1 Green Township
3 UC
2 Western Hills
4 Uptown
Call-and-Ride Service Areas

TRANSIT SERVICES
2014 PUBLIC OPINION SURVEY RESULTS
Hamilton County, Ohio

Telephone Interviews Performed by Specially-trained Opinion Research Interviewers

Conducted with 503 Randomly-selected Registered Voters within Hamilton County, Ohio with Histories of Voting in Recent Elections, using a Combination of Valid Residential and Cellular Telephone Listings

+/- 4.36% Overall Estimated Margin of Error, with a Confidence Interval of 8.72% Within Which the Results Could Vary

September 15 – September 19, 2014

Data was Stratified so that the Differences in Vital Characteristics, such as Age, Race, Gender and Geography are Represented in Proportion to Their Percentages of the Electorate

Unless Otherwise Noted, Only Statistically–Significant Differences Outside the Confidence Intervals for the Overall Estimated Margin of Sampling Error are Reported in this Presentation of Key Findings

Due to rounding, not all results add up to 100%, and the data is presented in a different order than the questions were asked

Opinion Environment

28% **Attracting more businesses and jobs to the area**

21% Stopping crime
16% Improving the quality of public education

9% Lowering taxes
4% Reducing traffic congestion
4% Expanding public transit services*

4% Other
13% All/combination
1% Unsure

What do you think should be the top priority for county leaders and elected officials to work on right now?

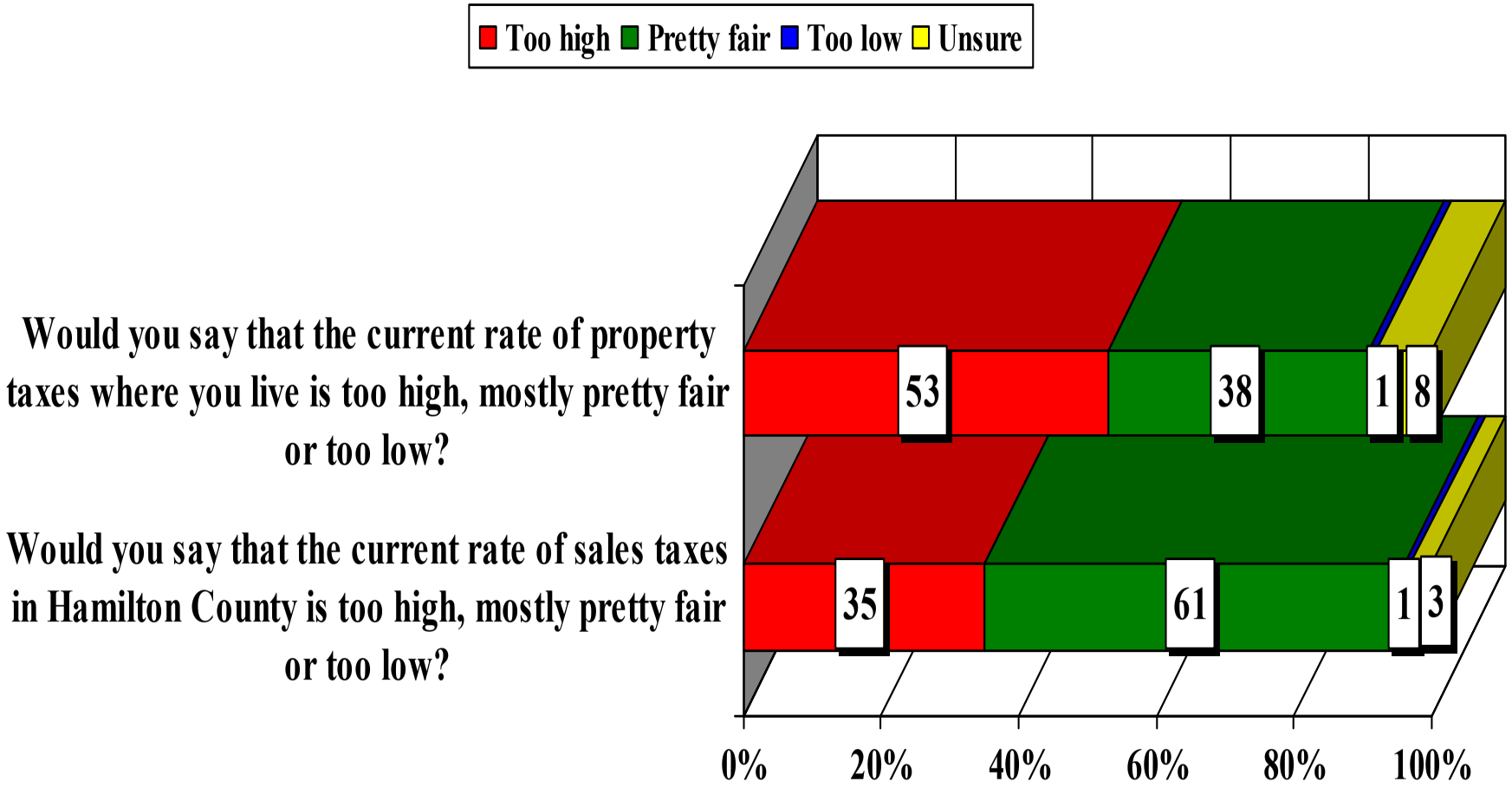
Forced Choice Battery

** No statistically significant differences by sub-group for this response option*

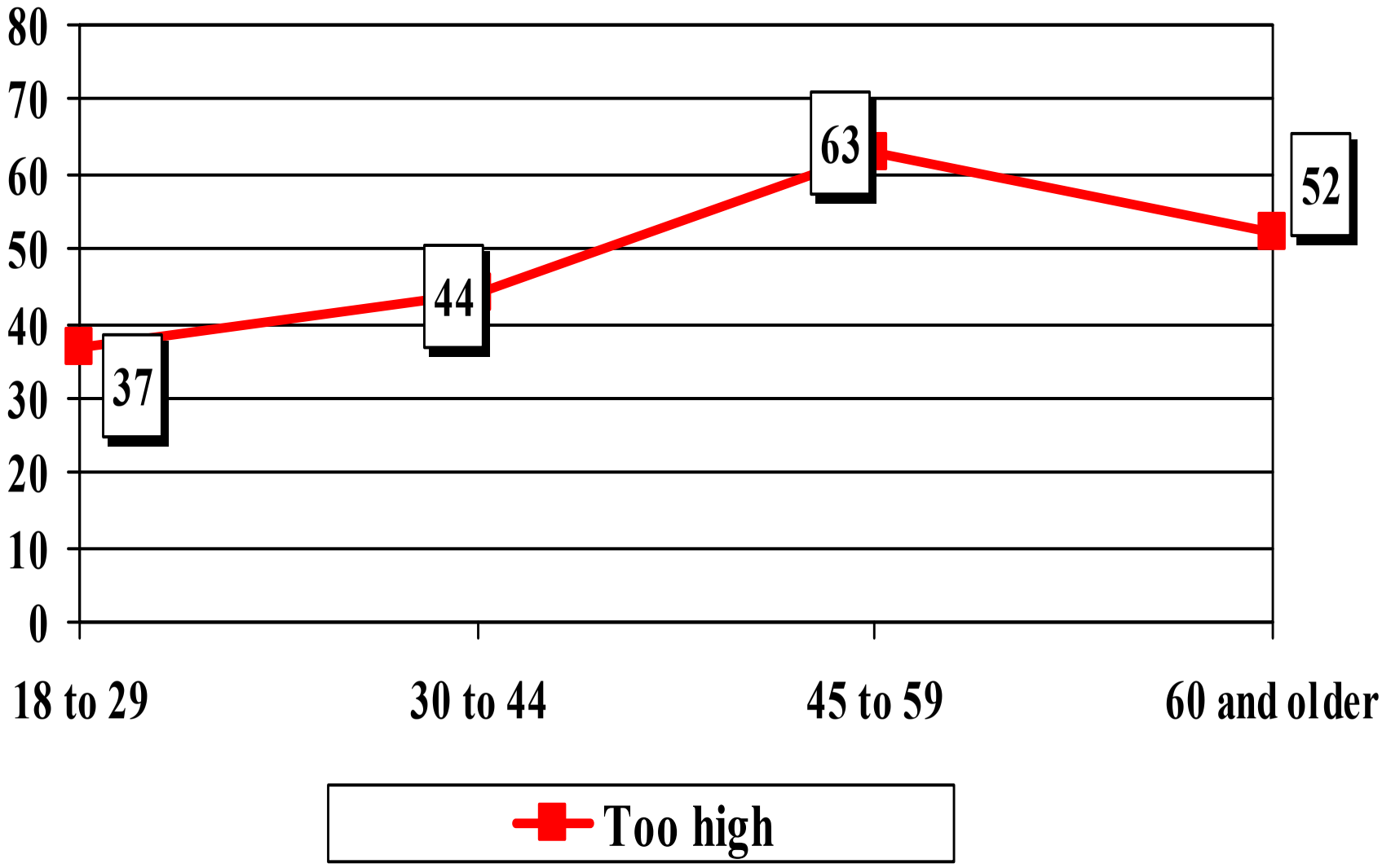
2014	2010	
28%	**40%**	**Attracting more businesses and jobs to the area**
21%	18%	Stopping crime
16%	20%	Improving the quality of public education
9%	12%	Lowering taxes
4%	2%	Reducing traffic congestion
4%	4%	Expanding public transit services

What do you think should be the top priority for county leaders and elected officials to work on right now?

Comparing 2010 Results

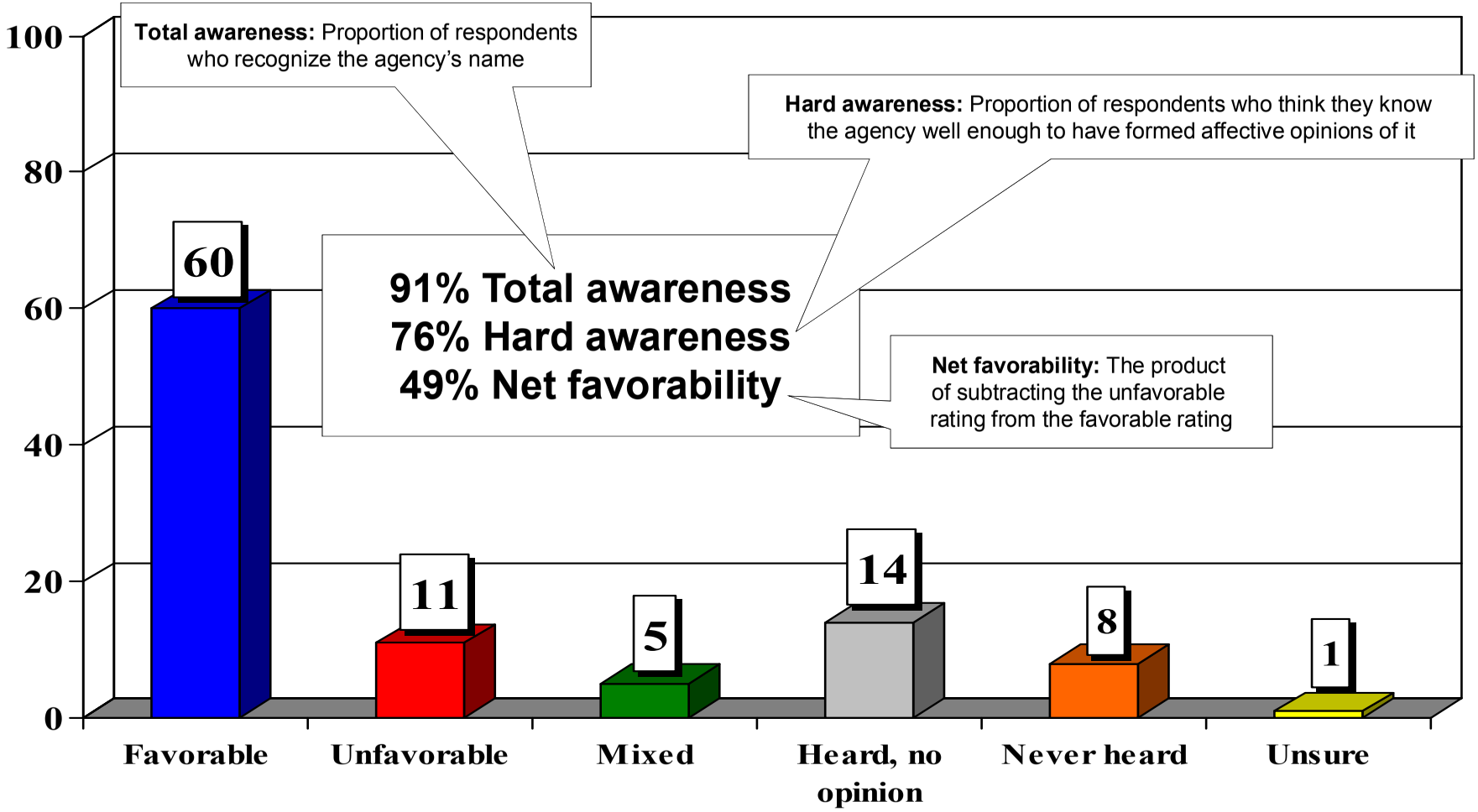


53% Property Taxes Too High

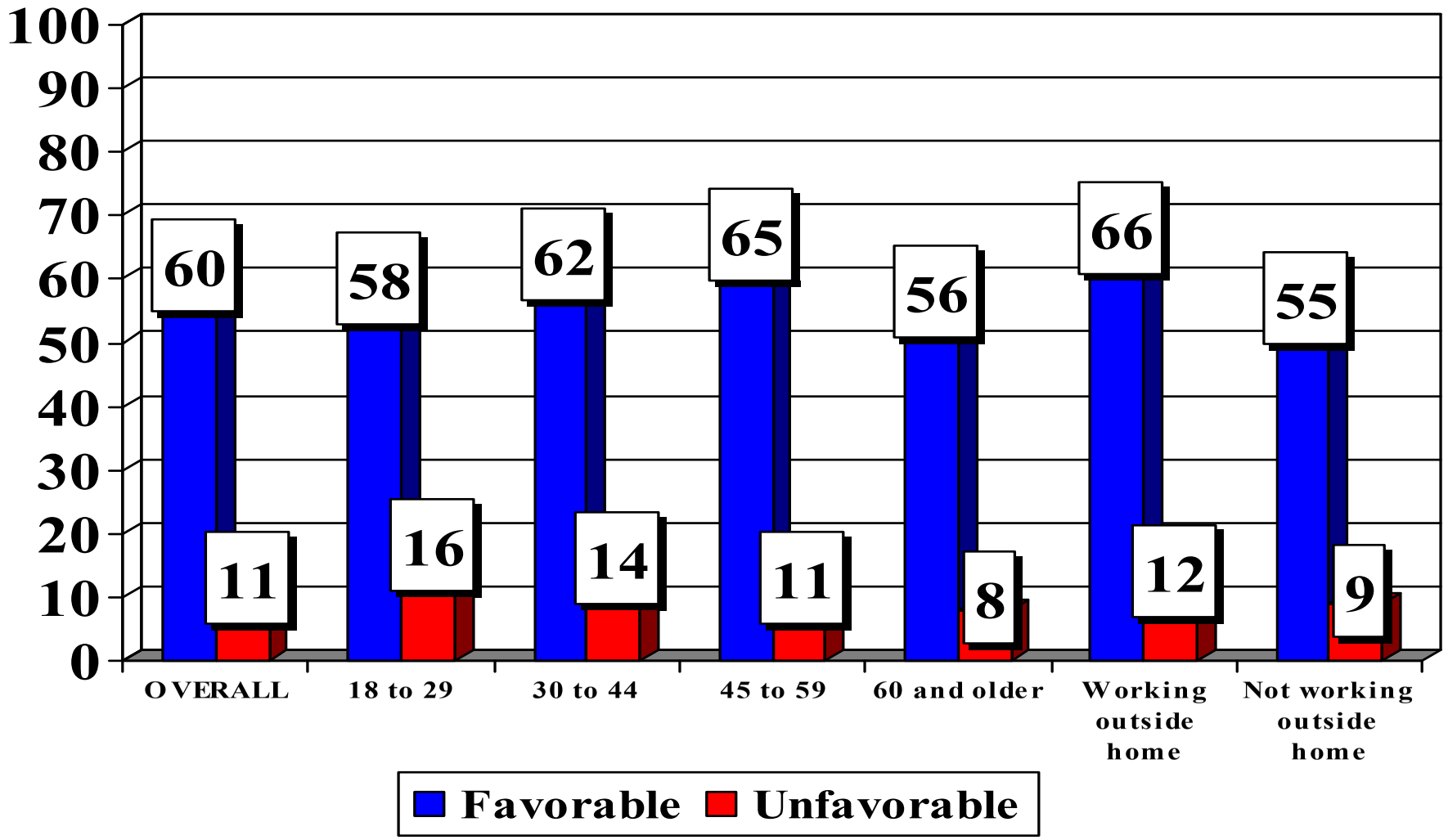


53% Property Taxes Too High*

* Only statistically significant differences by sub-group for this question



Prior to this survey, have you ever heard of the agency named METRO, which provides bus and public transit services in the community?



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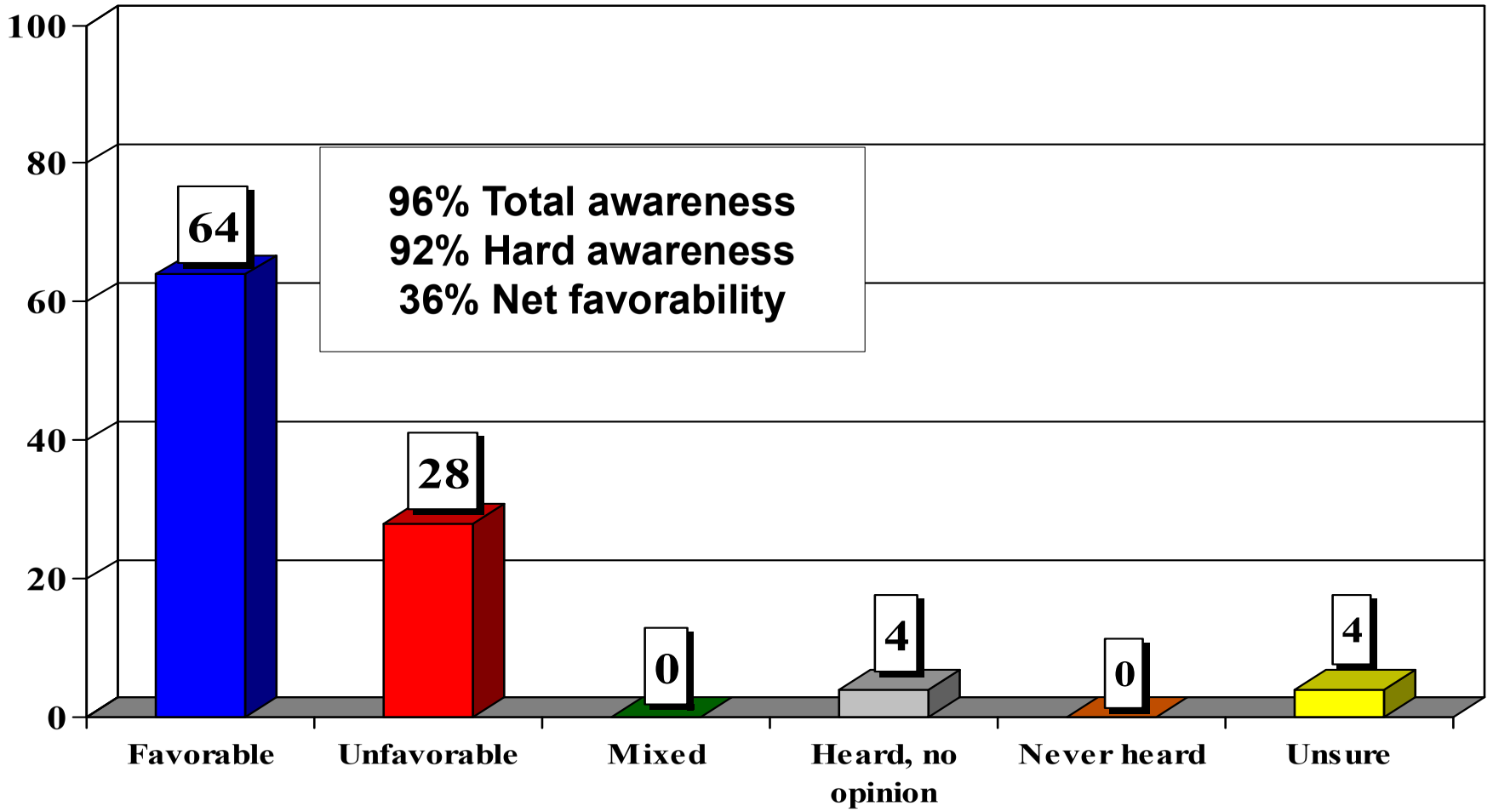
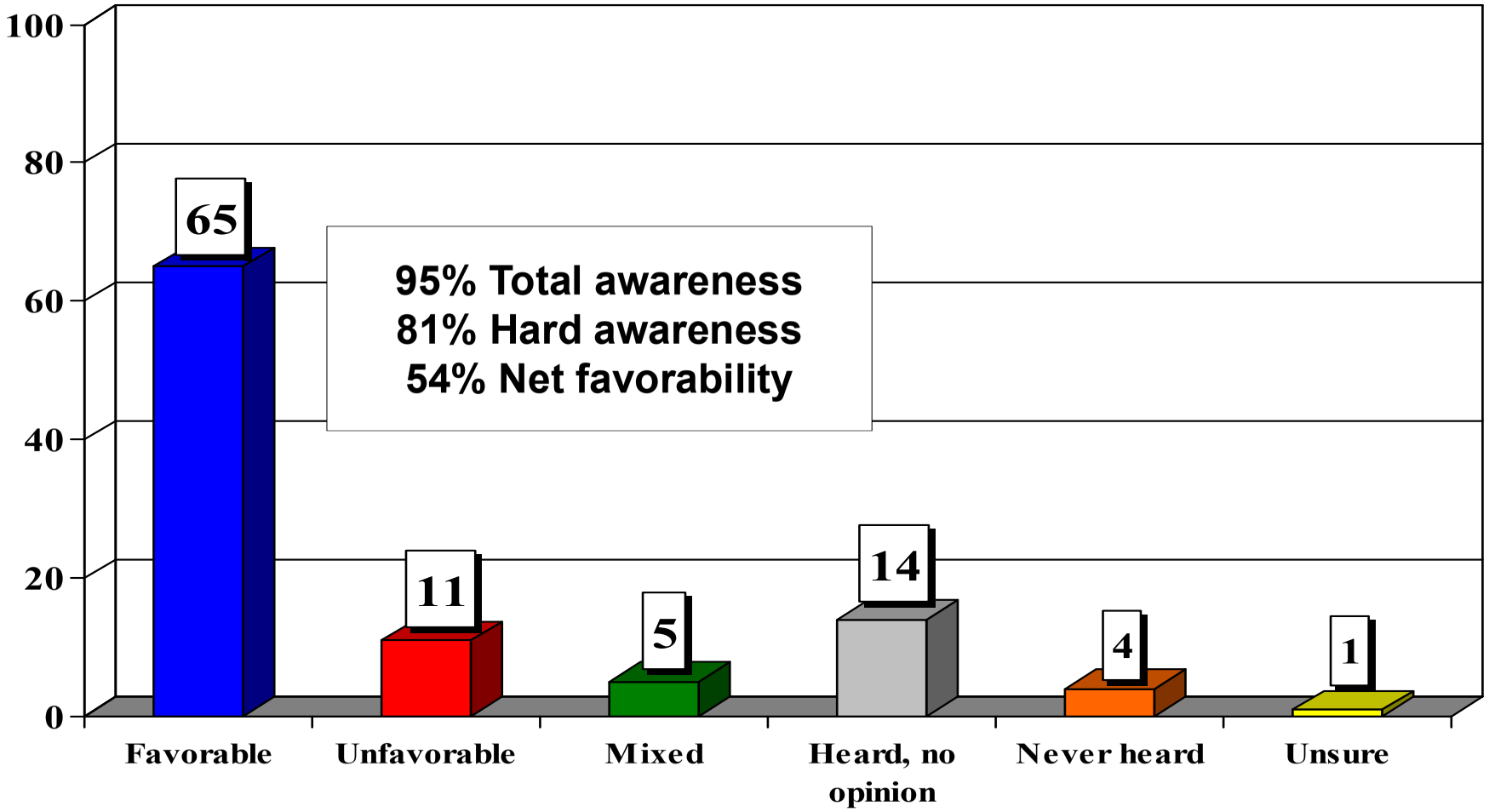
Results by Sub-groups



Prior to this survey, have you ever heard of the agency named METRO, which provides bus and public transit services in the community?

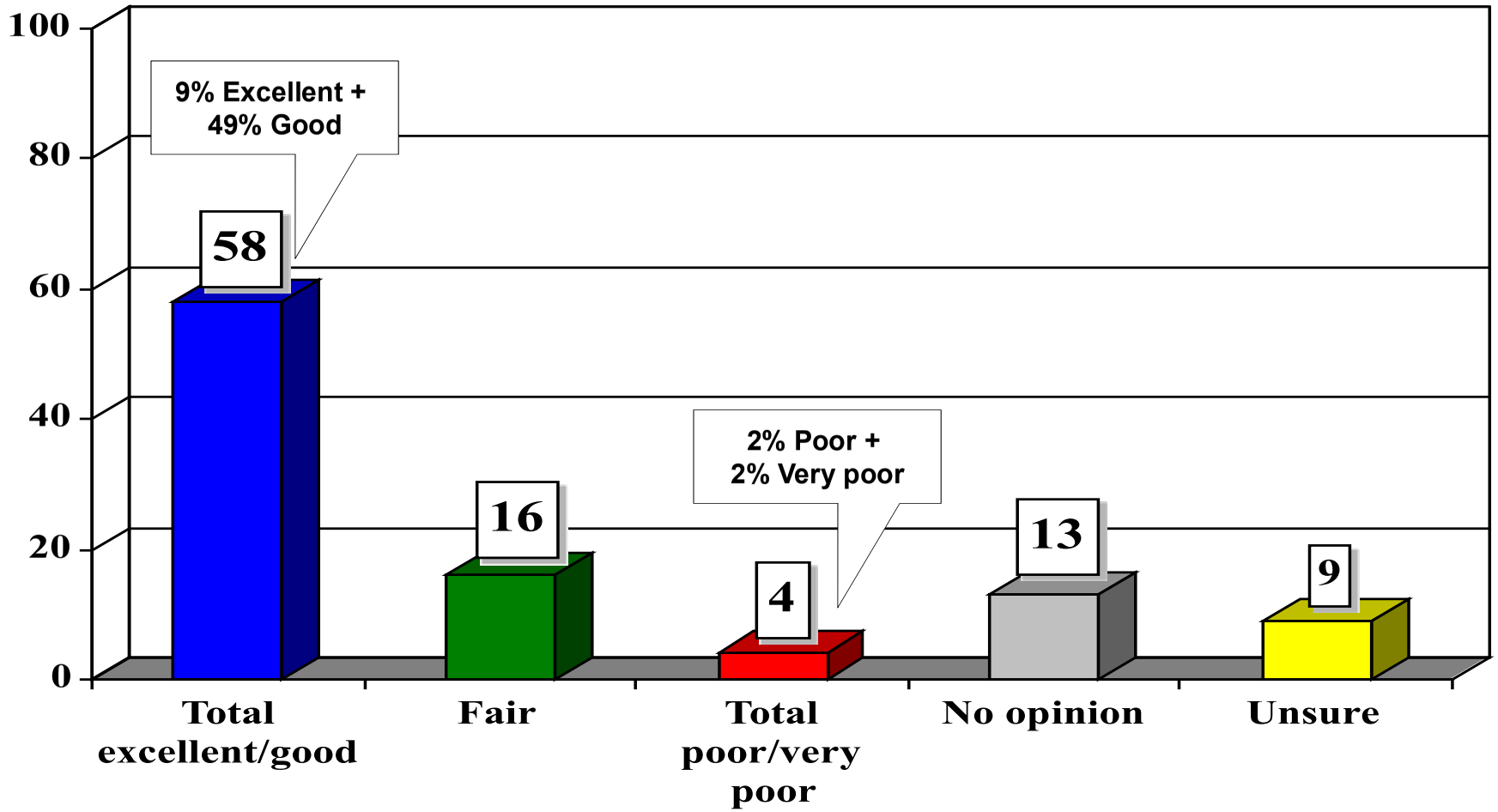
Among Frequent Transit Users

n=31



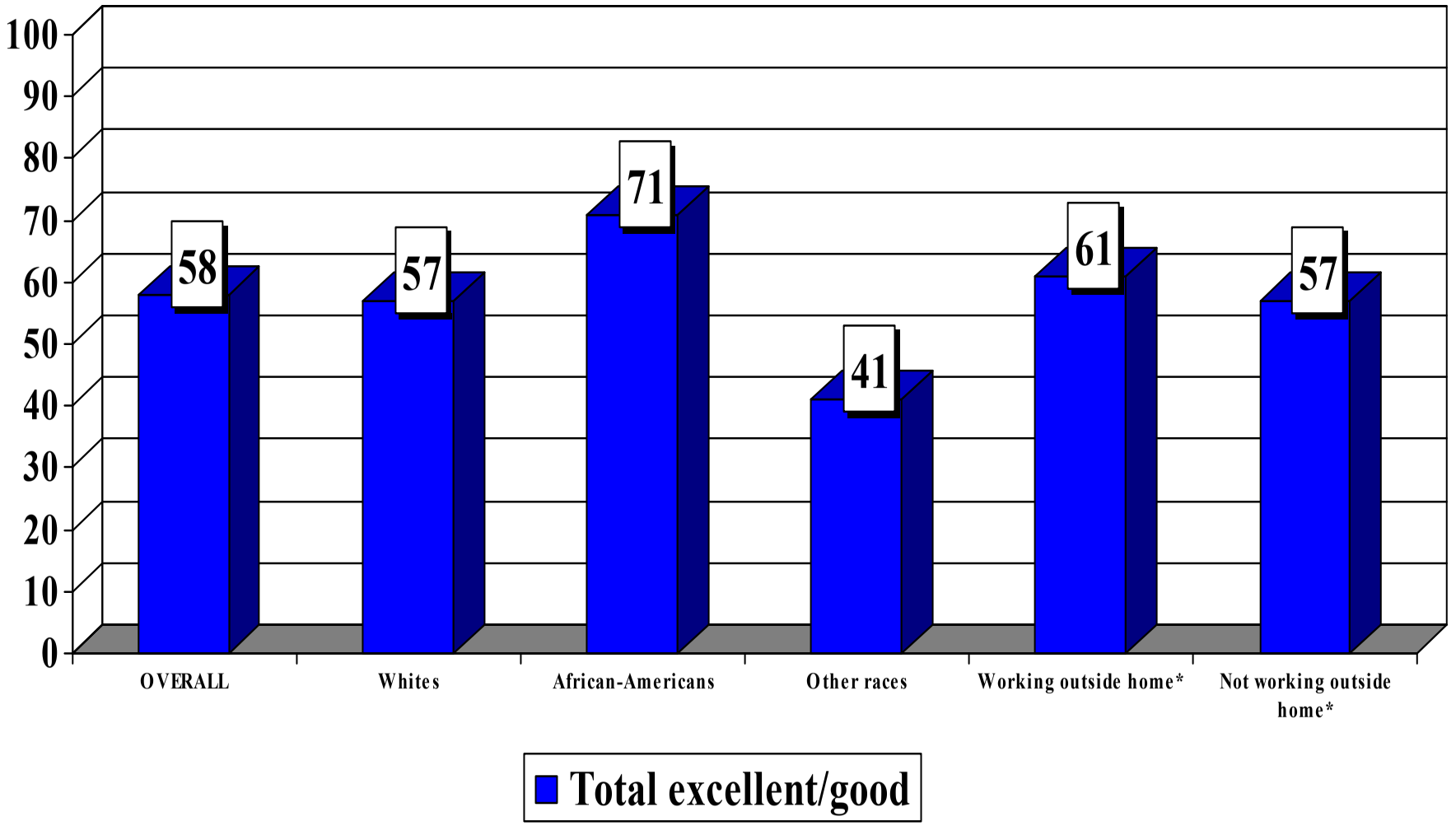
Prior to this survey, have you ever heard of the agency named METRO, which provides bus and public transit services in the community?

2010 Results



Generally speaking, how would you rate the job METRO does providing bus and public transit services?

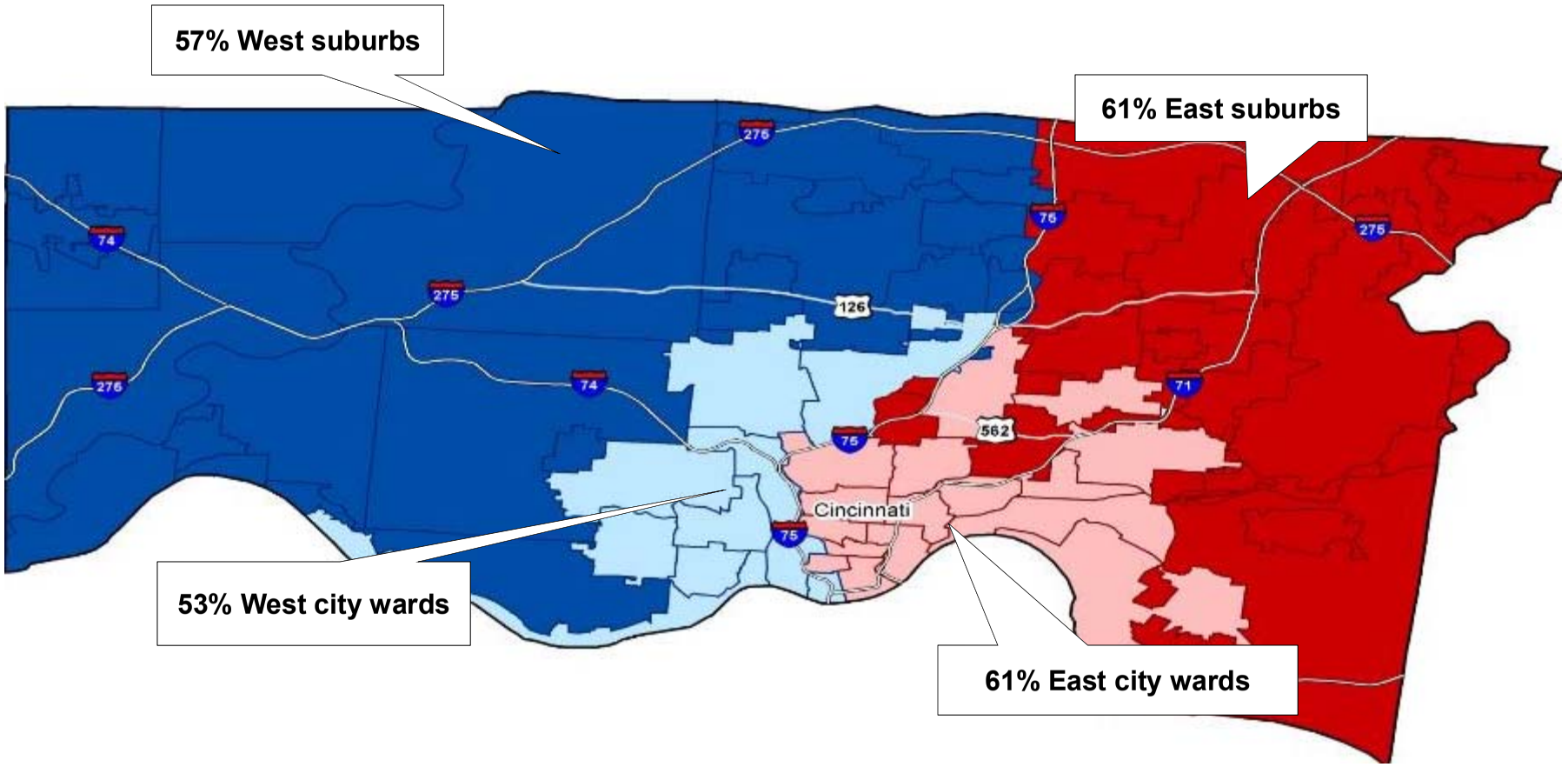
54% Net Positive



Generally speaking, how would you rate the job METRO does providing bus and public transit services?

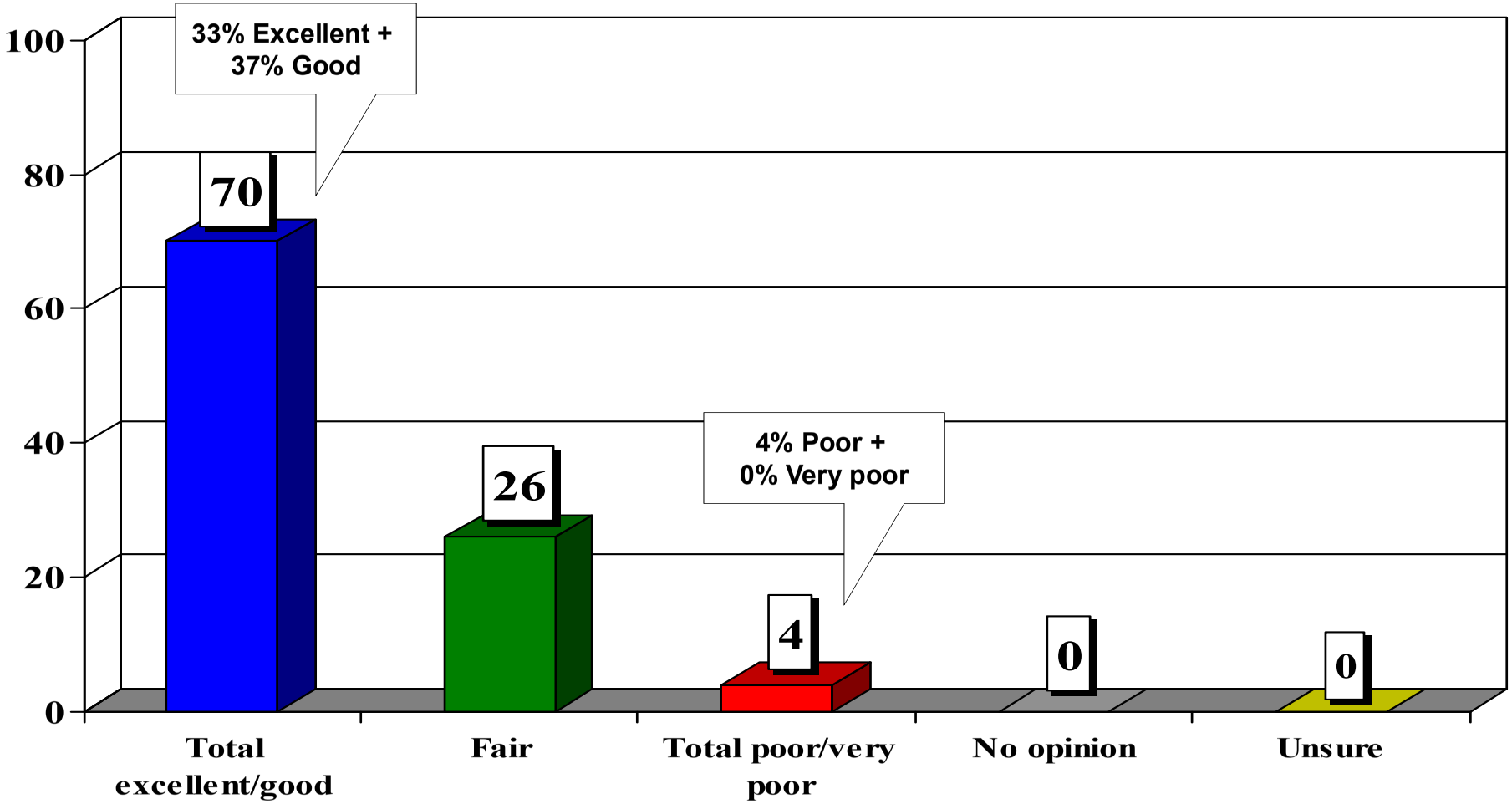
** Differences were not statistically significant*

Results by Sub-groups



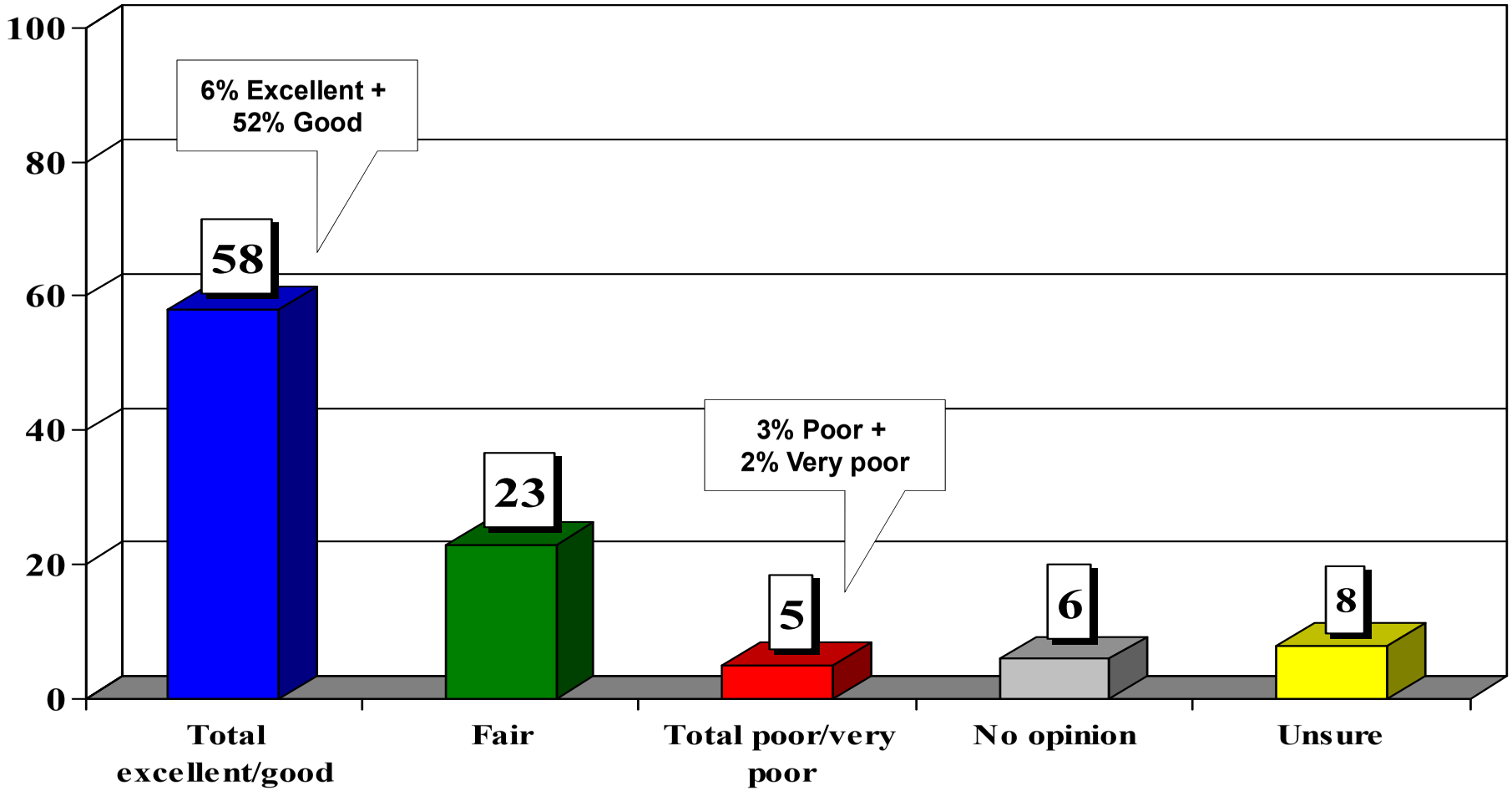
Generally speaking, how would you rate the job METRO does providing bus and public transit services?

Results by Area



Generally speaking, how would you rate the job METRO does providing bus and public transit services?

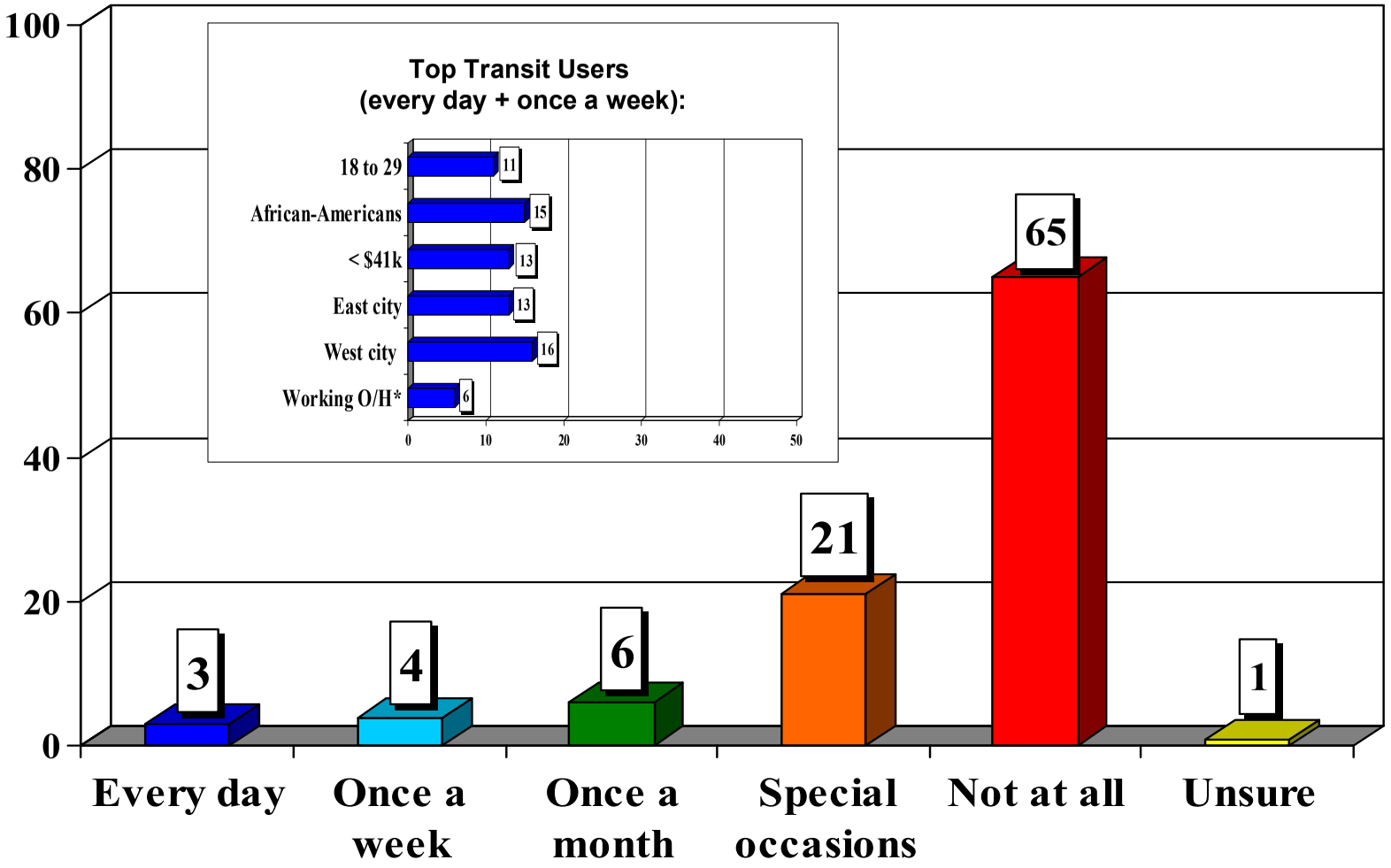
Among Frequent Transit Users



Generally speaking, how would you rate the job METRO does providing bus and public transit services?

2010 Results

Transit Usage & Attitudes



Which of following best describes how often you use public transit, such as METRO buses?

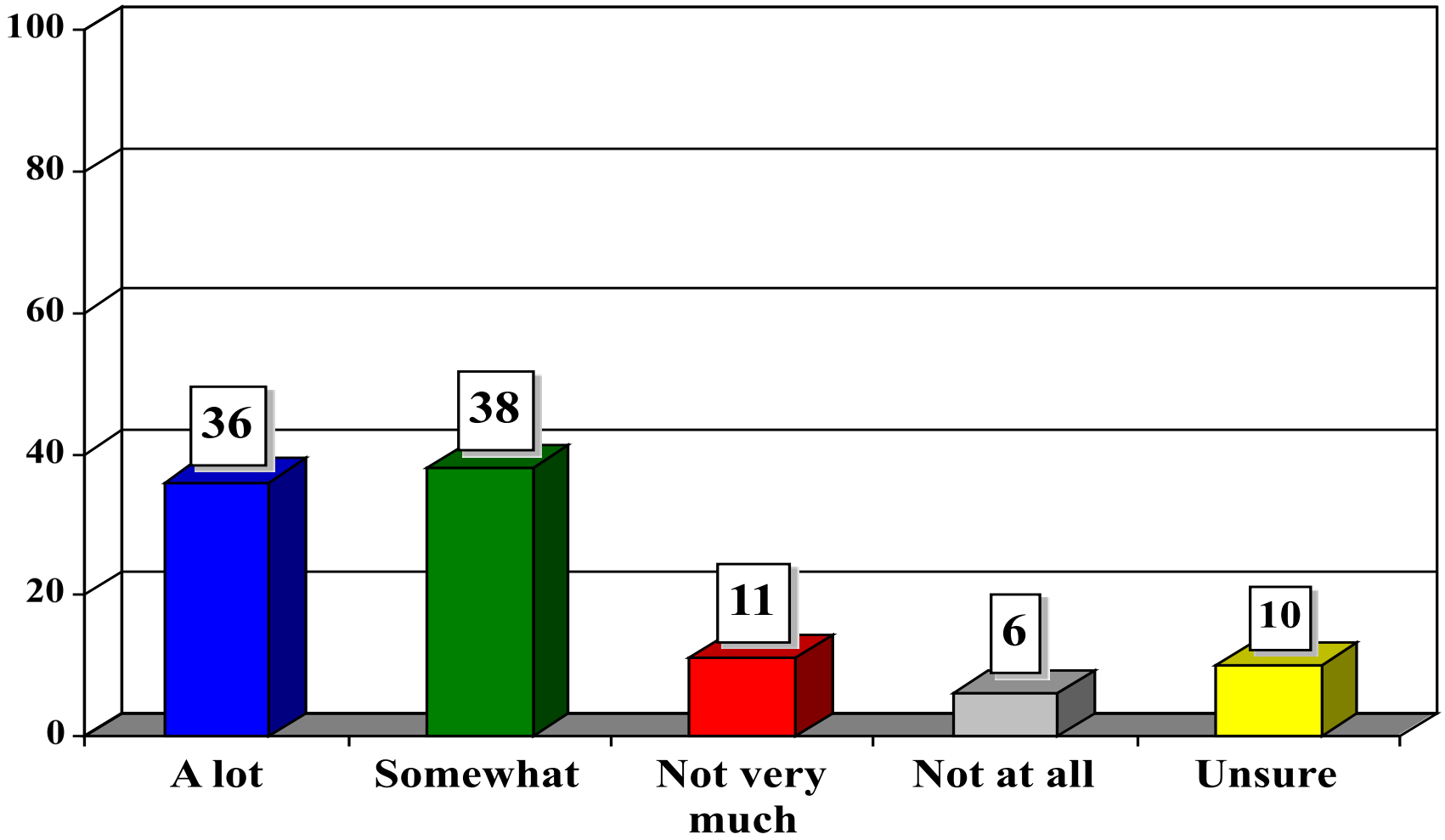
7% Frequent Transit Users

* Difference was not statistically significant

All	Users	
28%	**19%**	**Attracting more businesses and jobs to the area**
21%	22%	Stopping crime
16%	16%	Improving the quality of public education
9%	13%	Lowering taxes
4%	0%	Reducing traffic congestion
4%	0%	Expanding public transit services

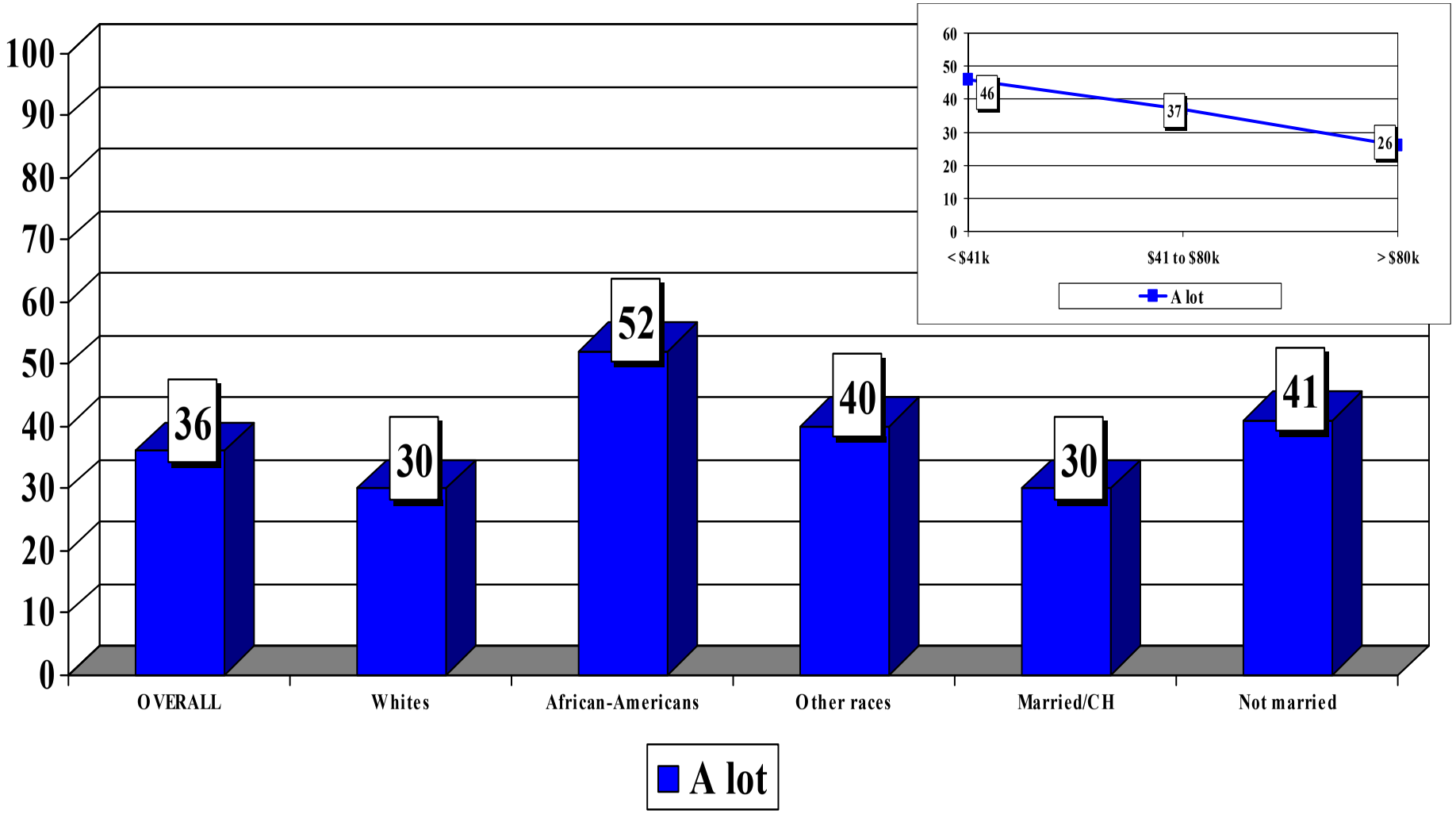
What do you think should be the top priority for county leaders and elected officials to work on right now?

Comparing Transit Users



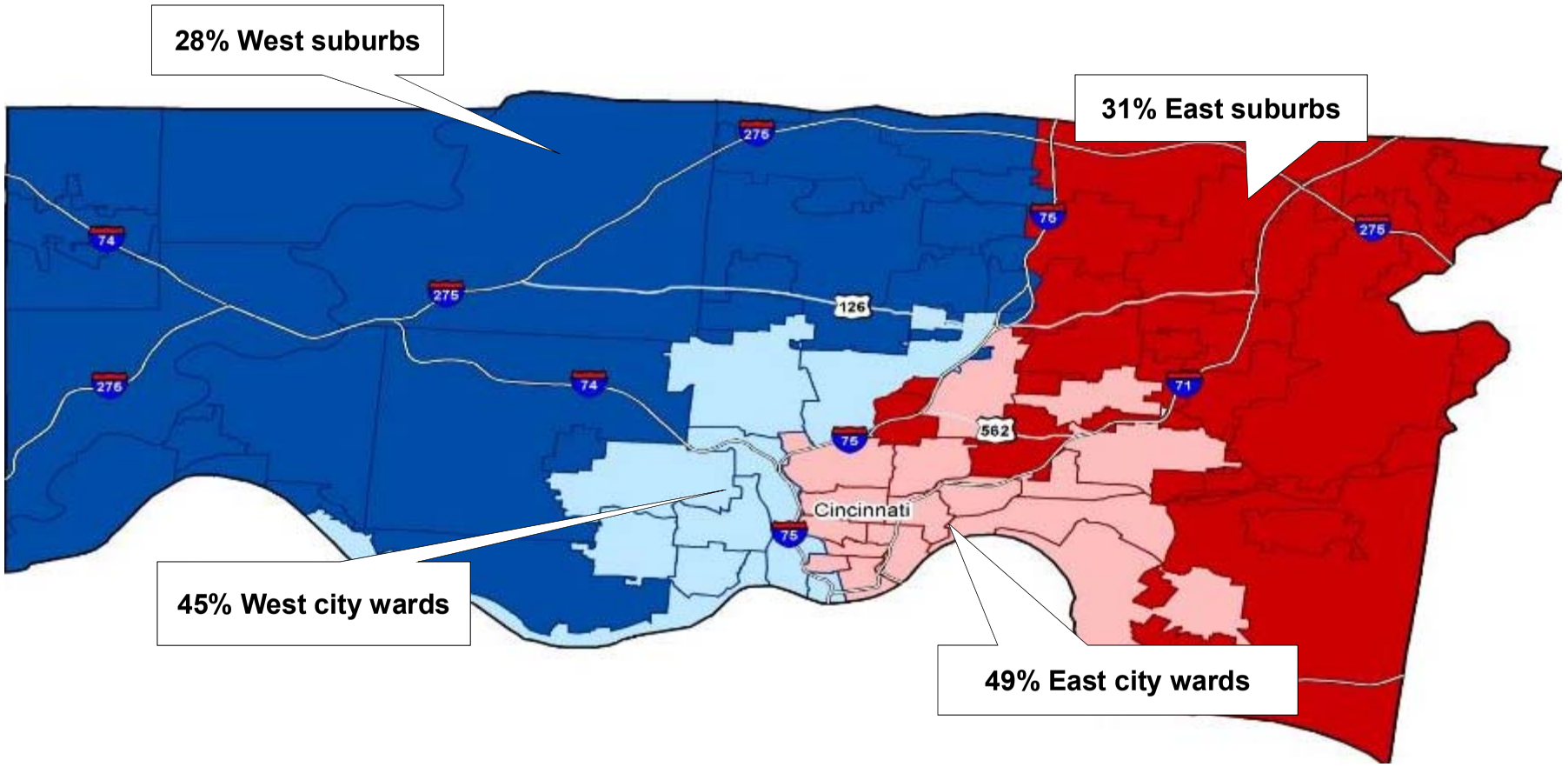
How much do you think that expanded and improved bus and public transit services are needed in Hamilton County?

36% A Lot



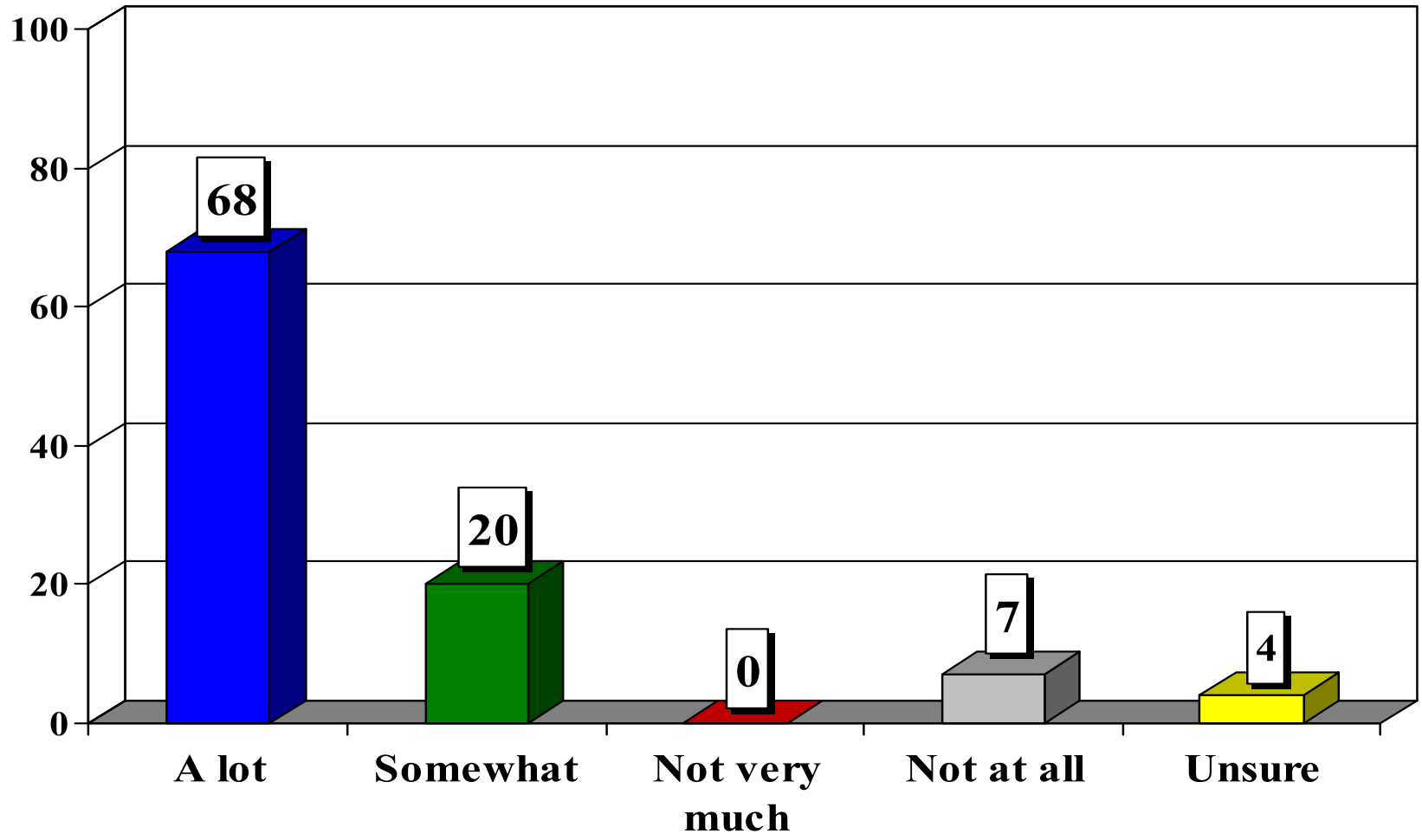
How much do you think that expanded and improved bus and public transit services are needed in Hamilton County?

Results by Sub-groups



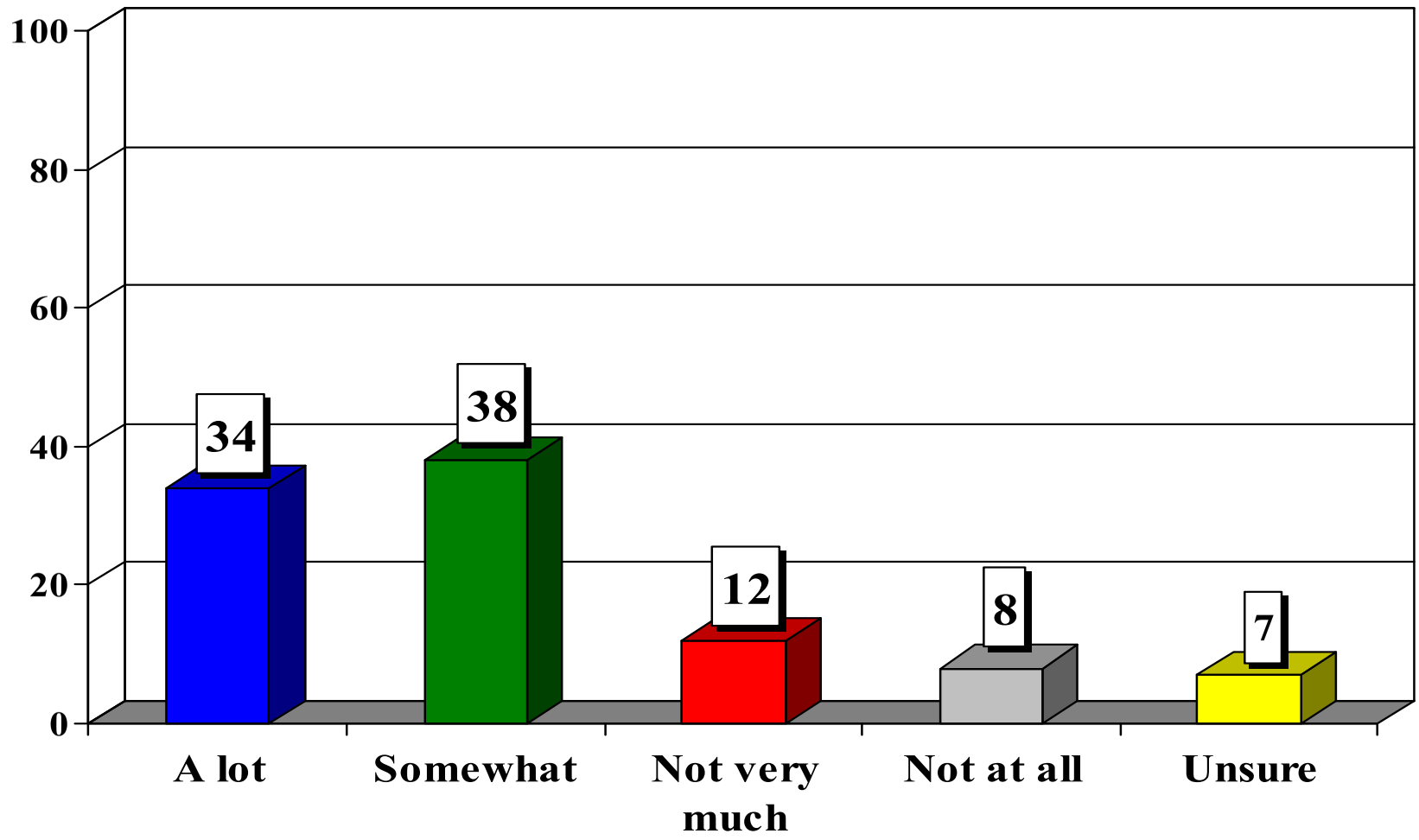
How much do you think that expanded and improved bus and public transit services are needed in Hamilton County?

Results by Area



How much do you think that expanded and improved bus and public transit services are needed in Hamilton County?

Among Frequent Transit Users



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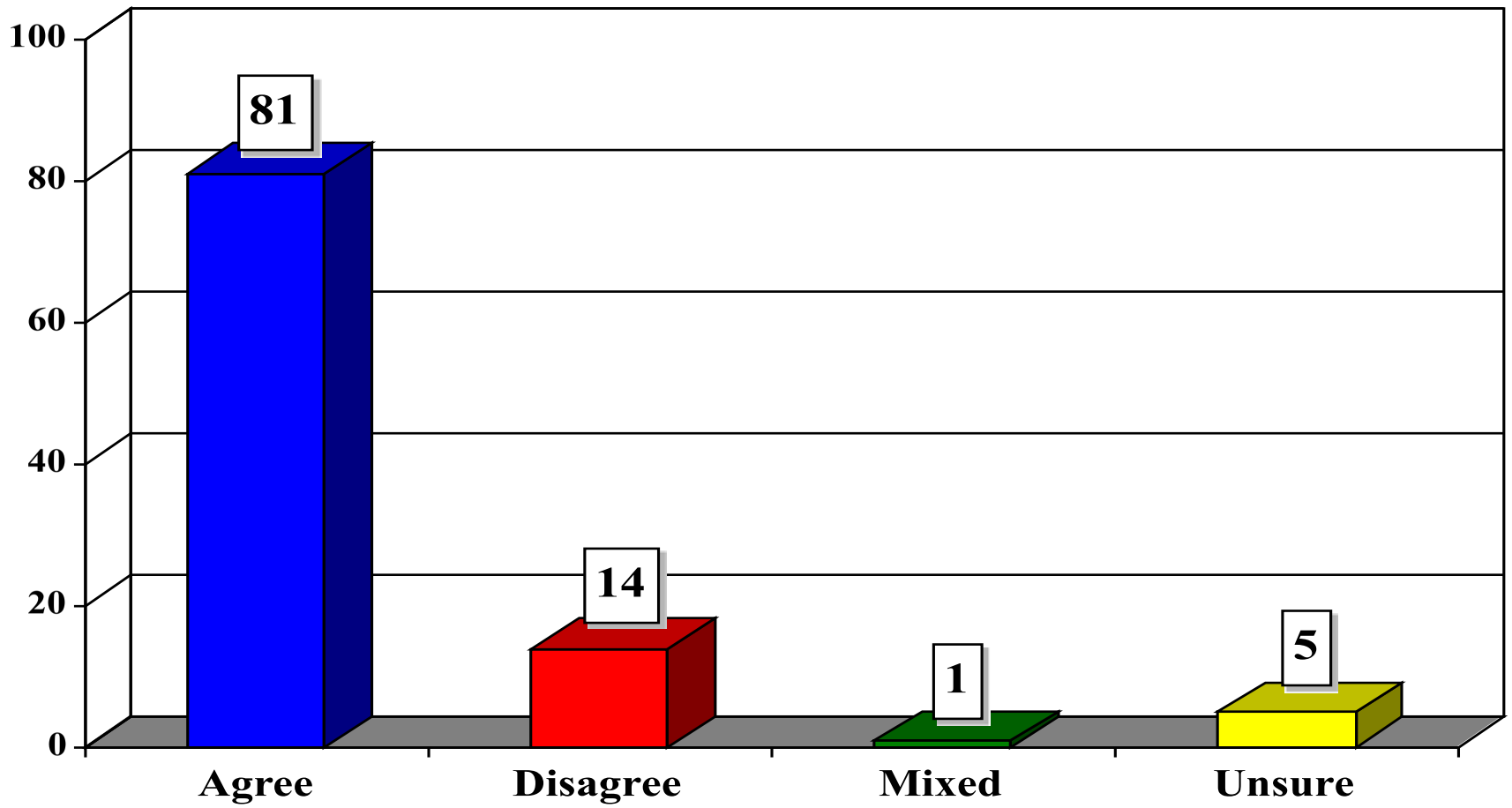
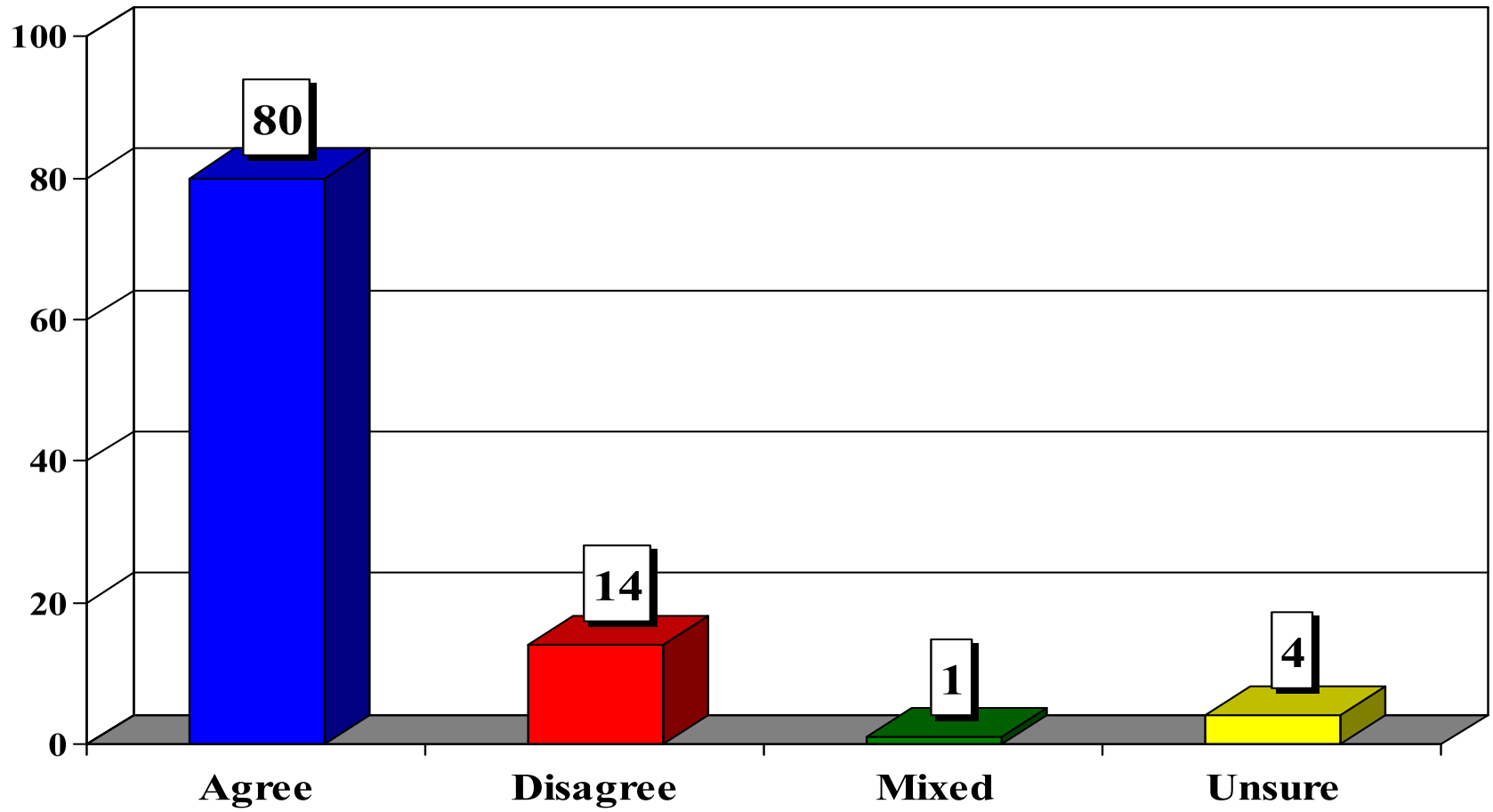
2010 Results



Do you agree or disagree with people who say that, even though they may not ever use them, they will, in some way, benefit by having expanded and improved bus and public transit services in Hamilton County?

67% Net Agreement



Do you agree or disagree with people who say that, even though they may not ever use them, they will, in some way, benefit by having expanded and improved bus and public transit services in Hamilton County?

Not Frequent Transit Users*

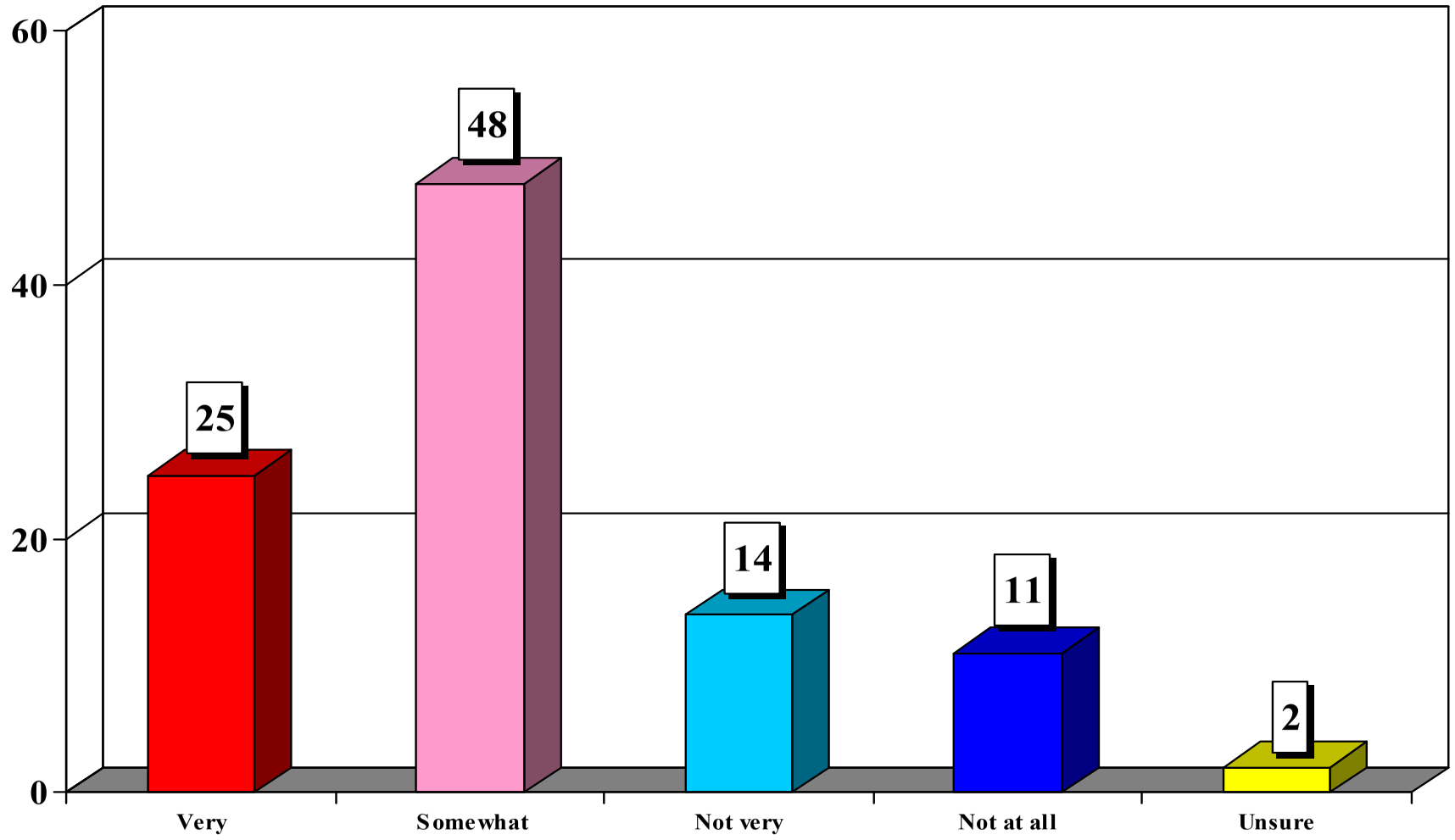
* Difference was not statistically significant

Taxes & Public Funding

28%	**The local schools**
26%	Law enforcement services
16%	Street and road surfaces
11%	Public and community health services
4%	Improved public transit services
2%	Preserving historic buildings
1%	Other
11%	All/combination
1%	Unsure

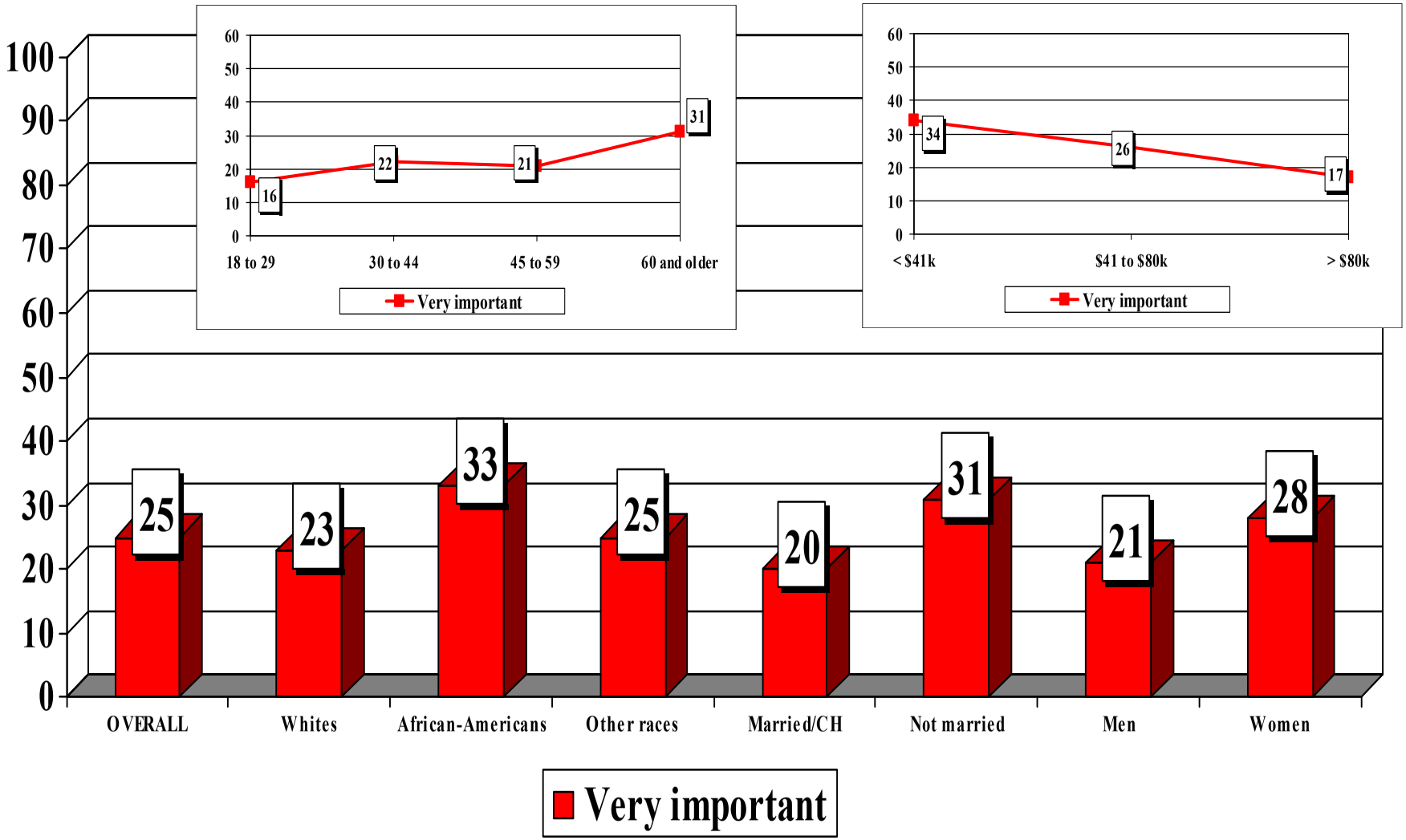
Which of the following do you think should be the top priority for using available tax dollars?

Forced Choice Battery



Compared to the other priorities we just discussed, how important is it to fund the expansion and improvement of public transit services, such as the local bus system?

25% Very Important



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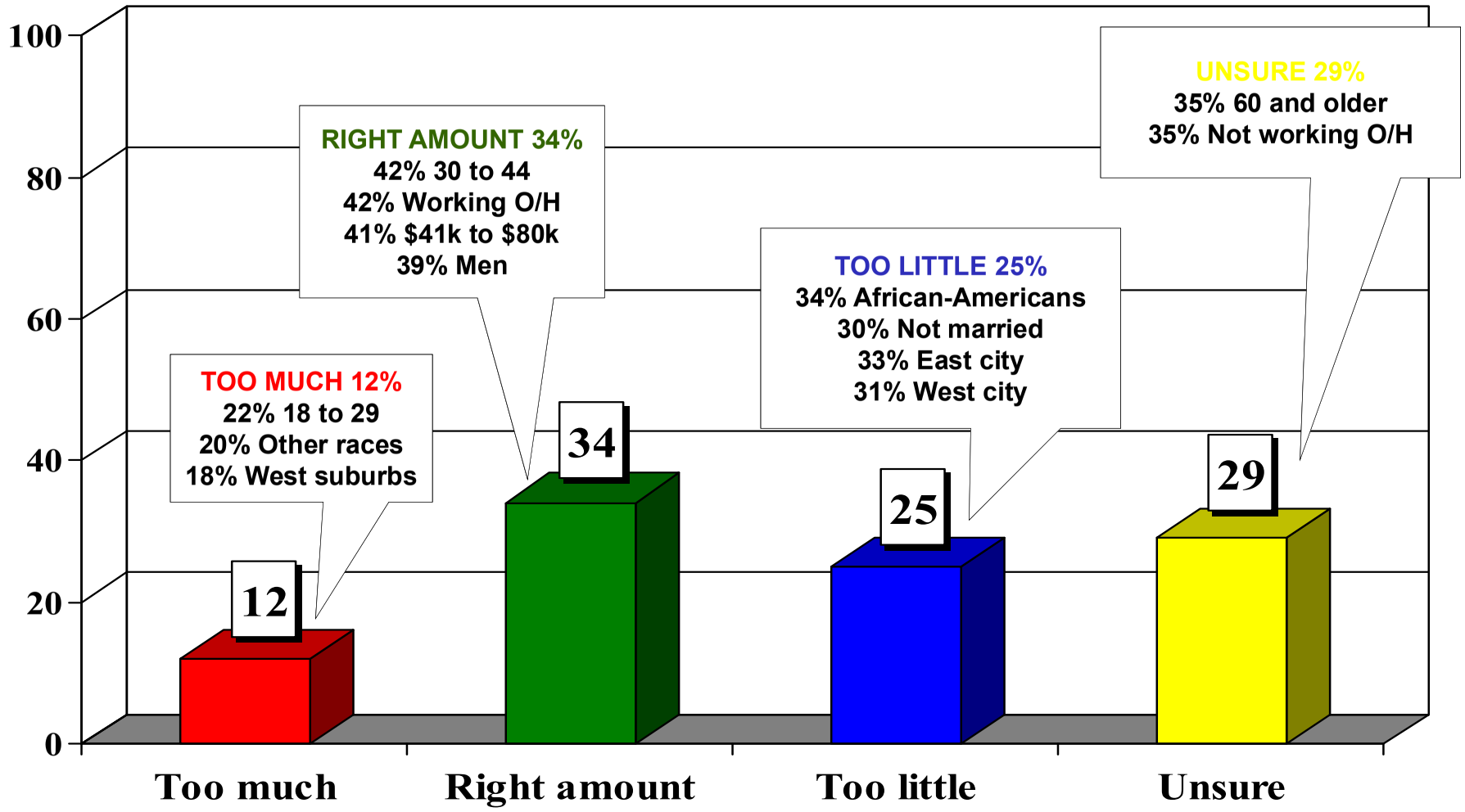
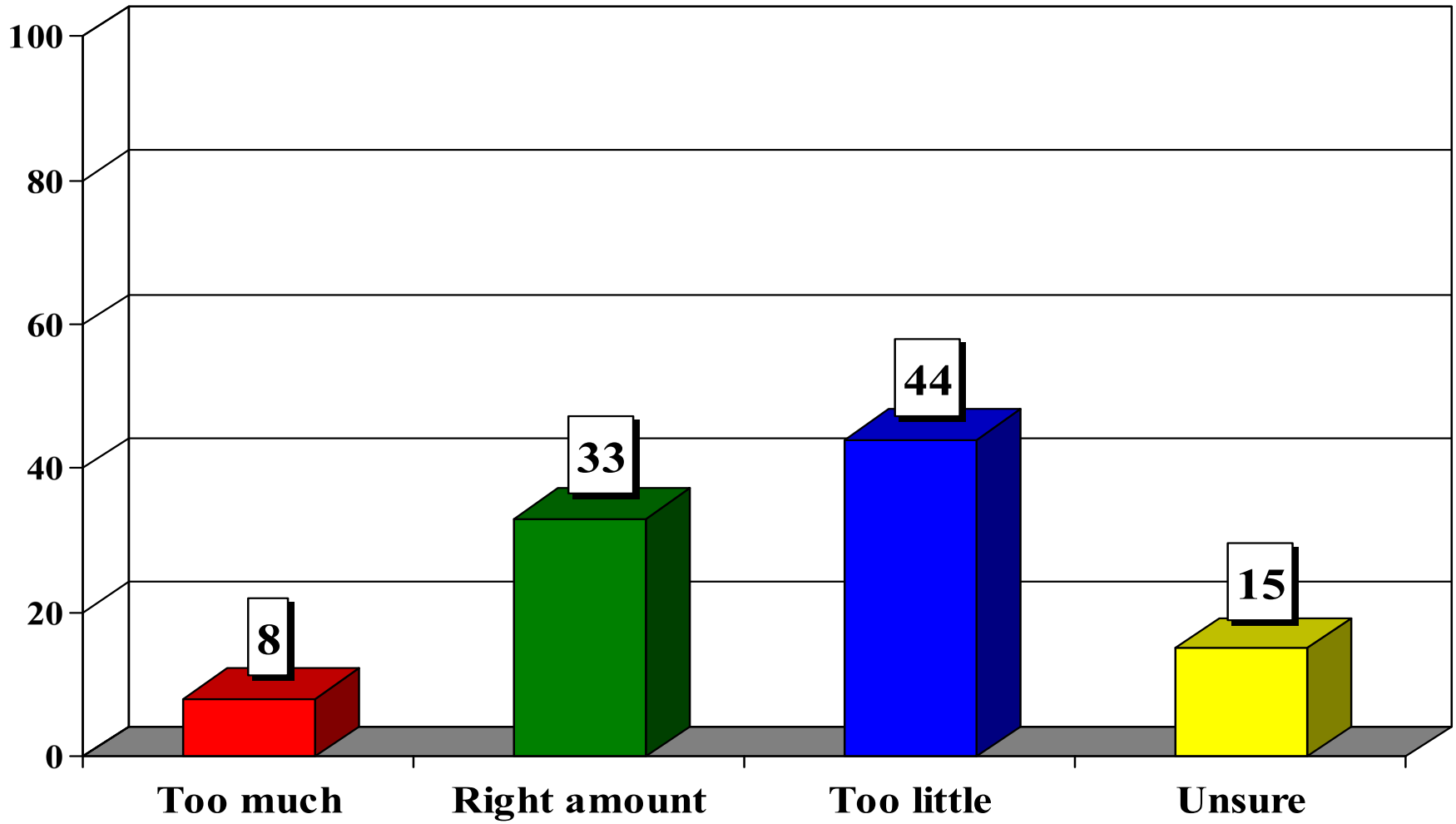


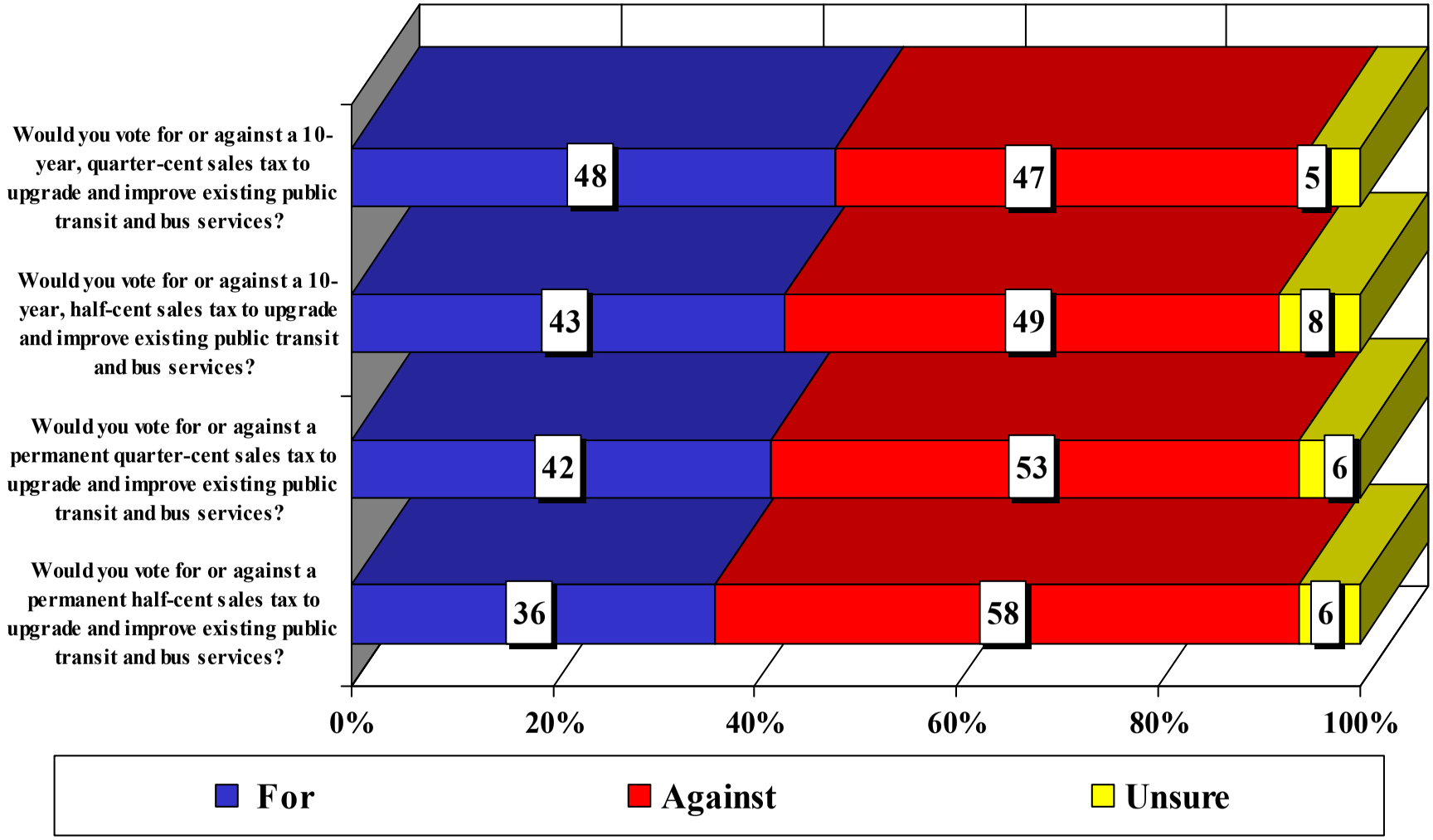
At this time, do you think too much, about the right amount or too little is being spent in Hamilton County on public transit services, such as the local bus system?

25% Too Little

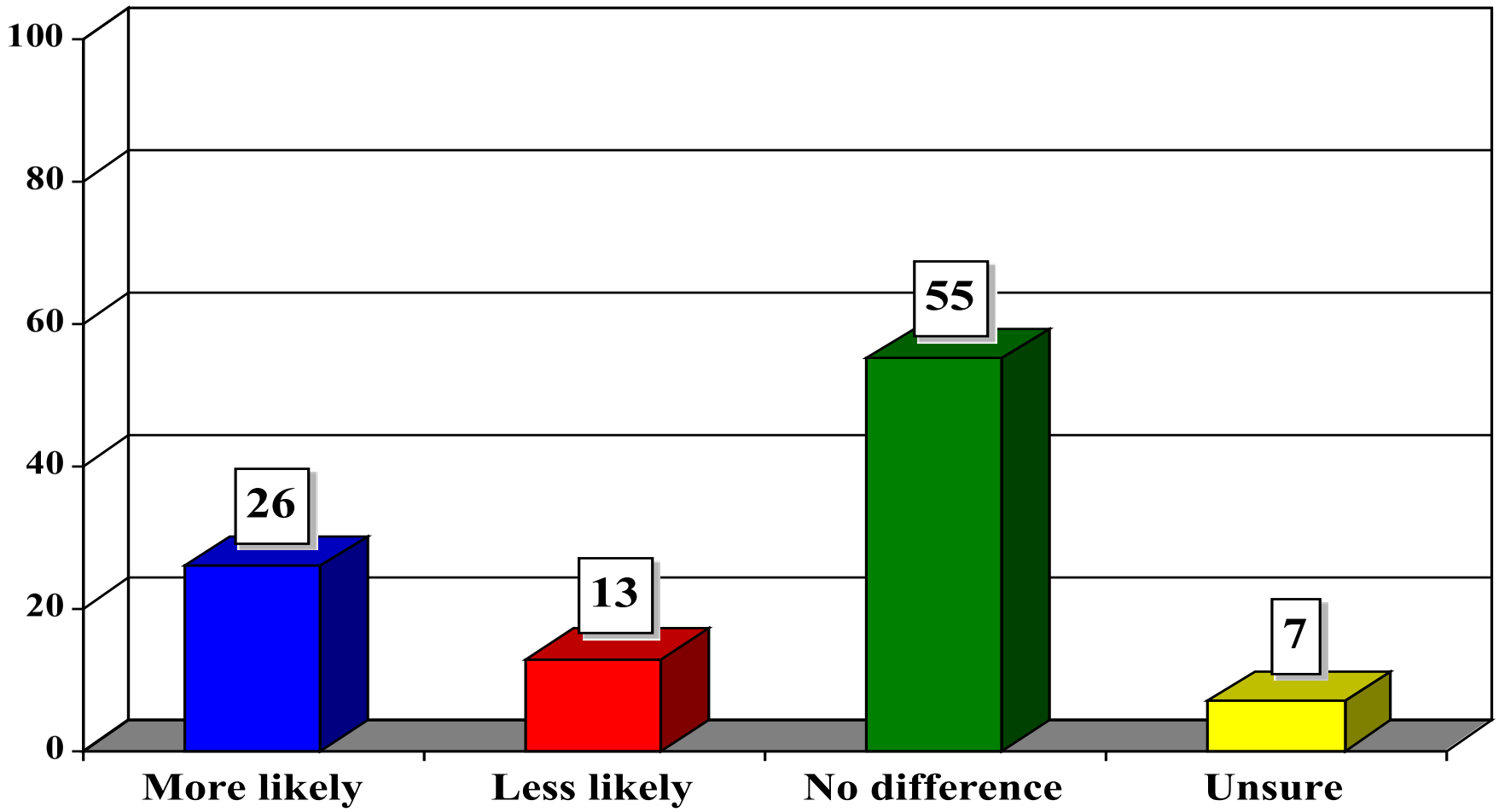


At this time, do you think too much, about the right amount or too little is being spent in Hamilton County on public transit services, such as the local bus system?

Among Frequent Transit Users



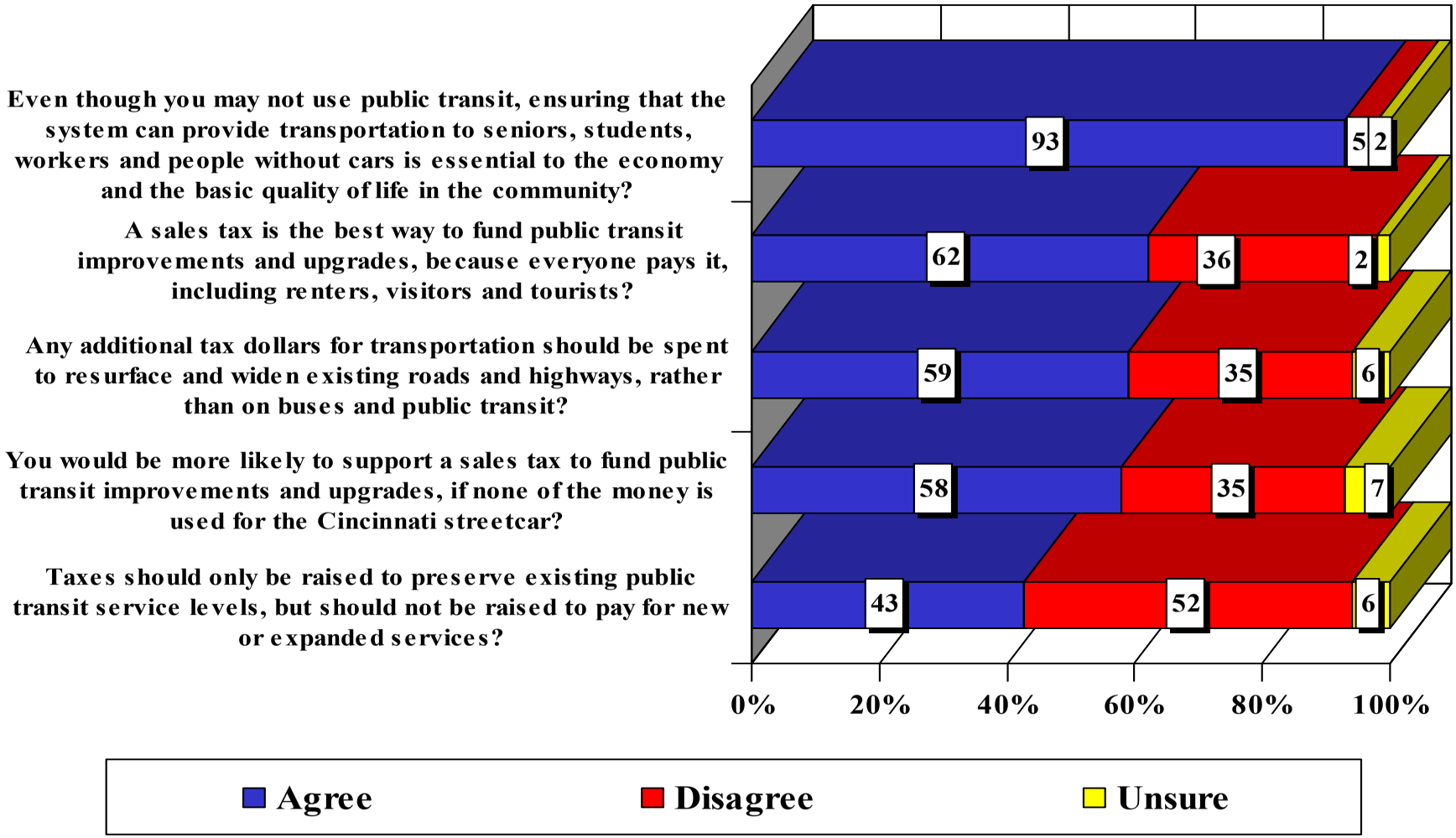
Split Sample Testing



Generally speaking, if the METRO system reduces the city earnings tax currently being collected for transit by more than 30%, would you be more or less likely to support a sales tax increase to improve public transit and bus services or would it make no difference to you?

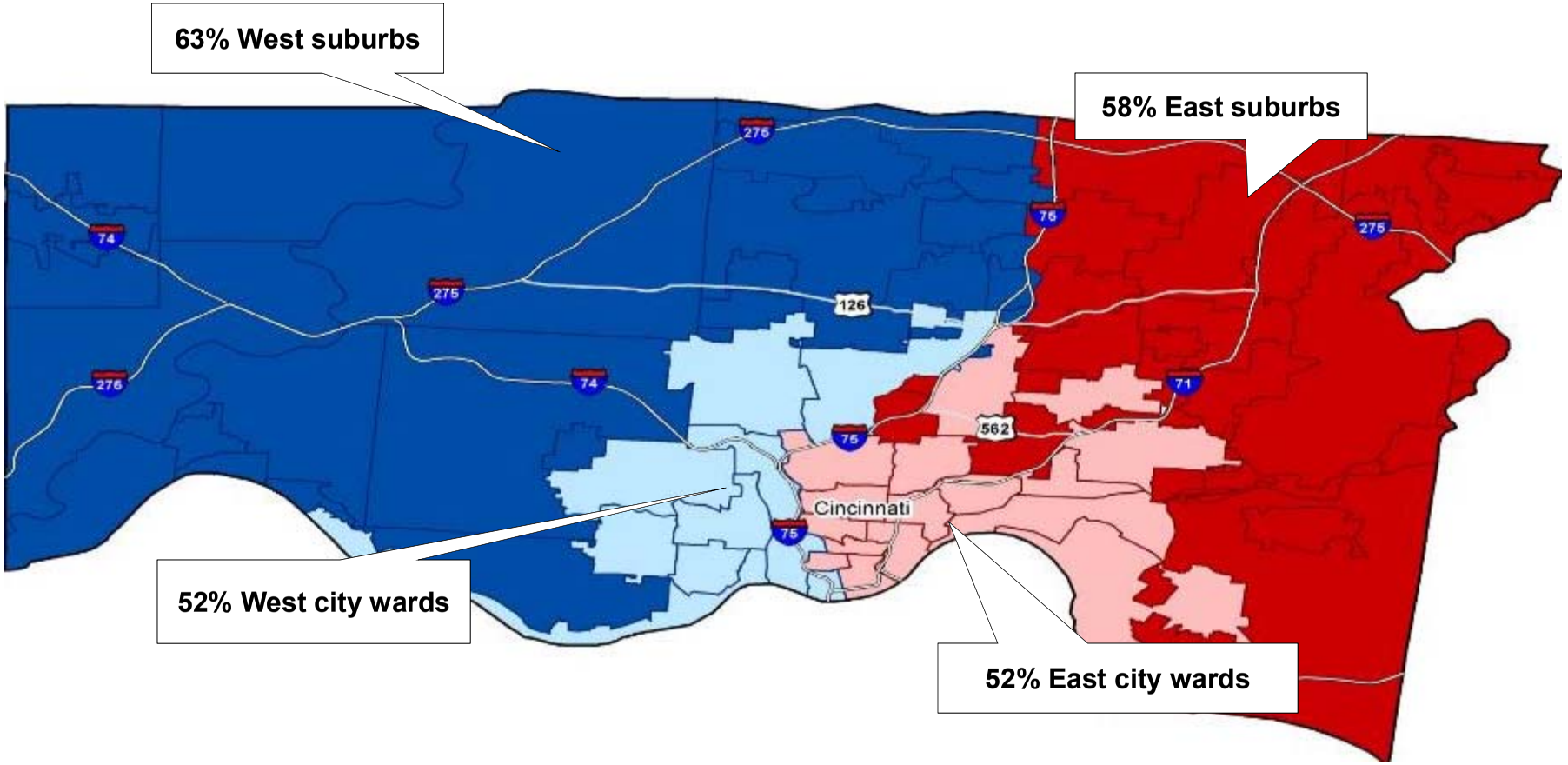
City of Cincinnati Respondents

n=168



Do you agree or disagree that…

Transit Funding Sentiments

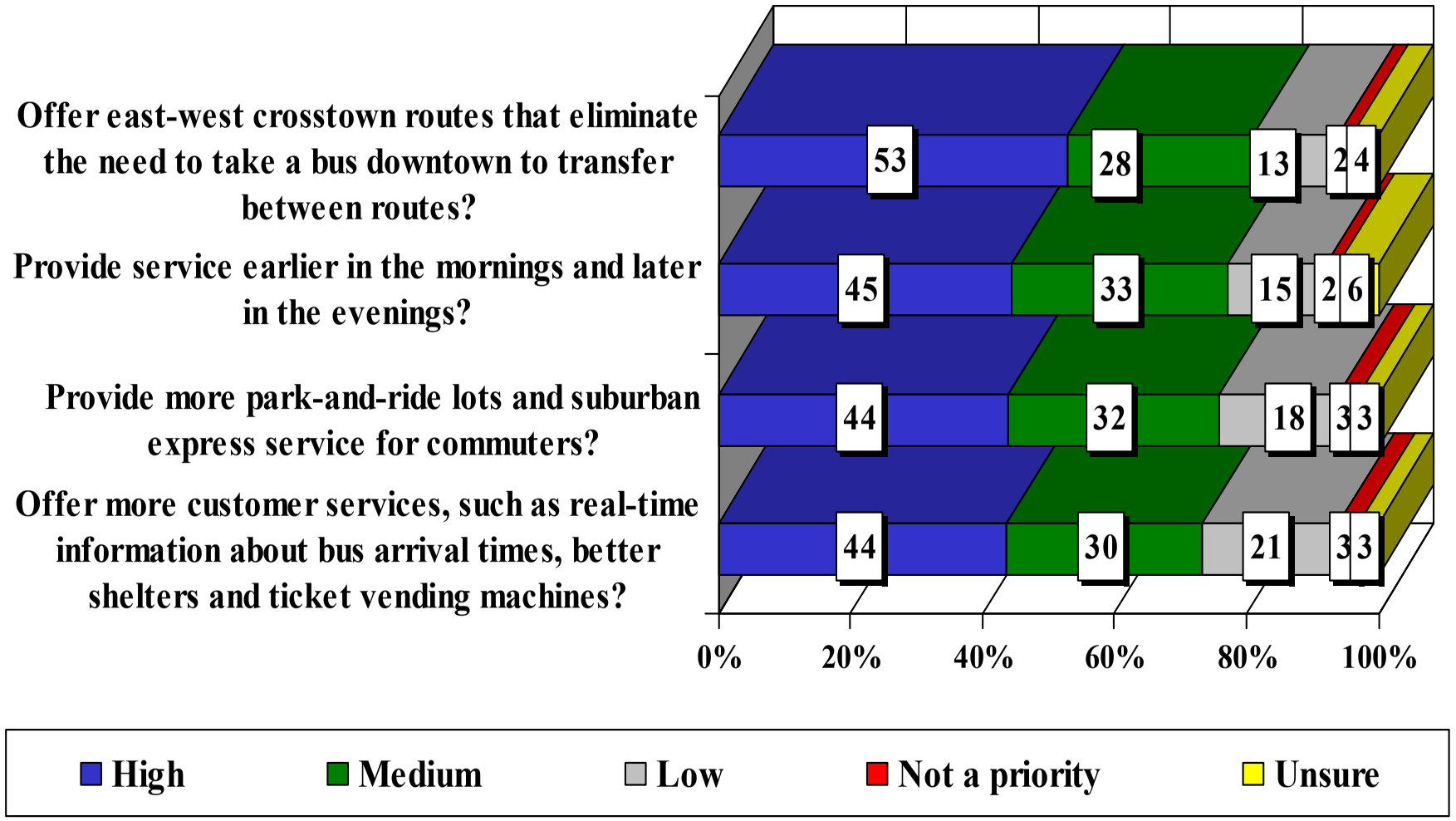


Do you agree or disagree that…You would be more likely to support a sales tax to fund public transit improvements and upgrades, if none of the money is used for the Cincinnati streetcar?

58% Agree*

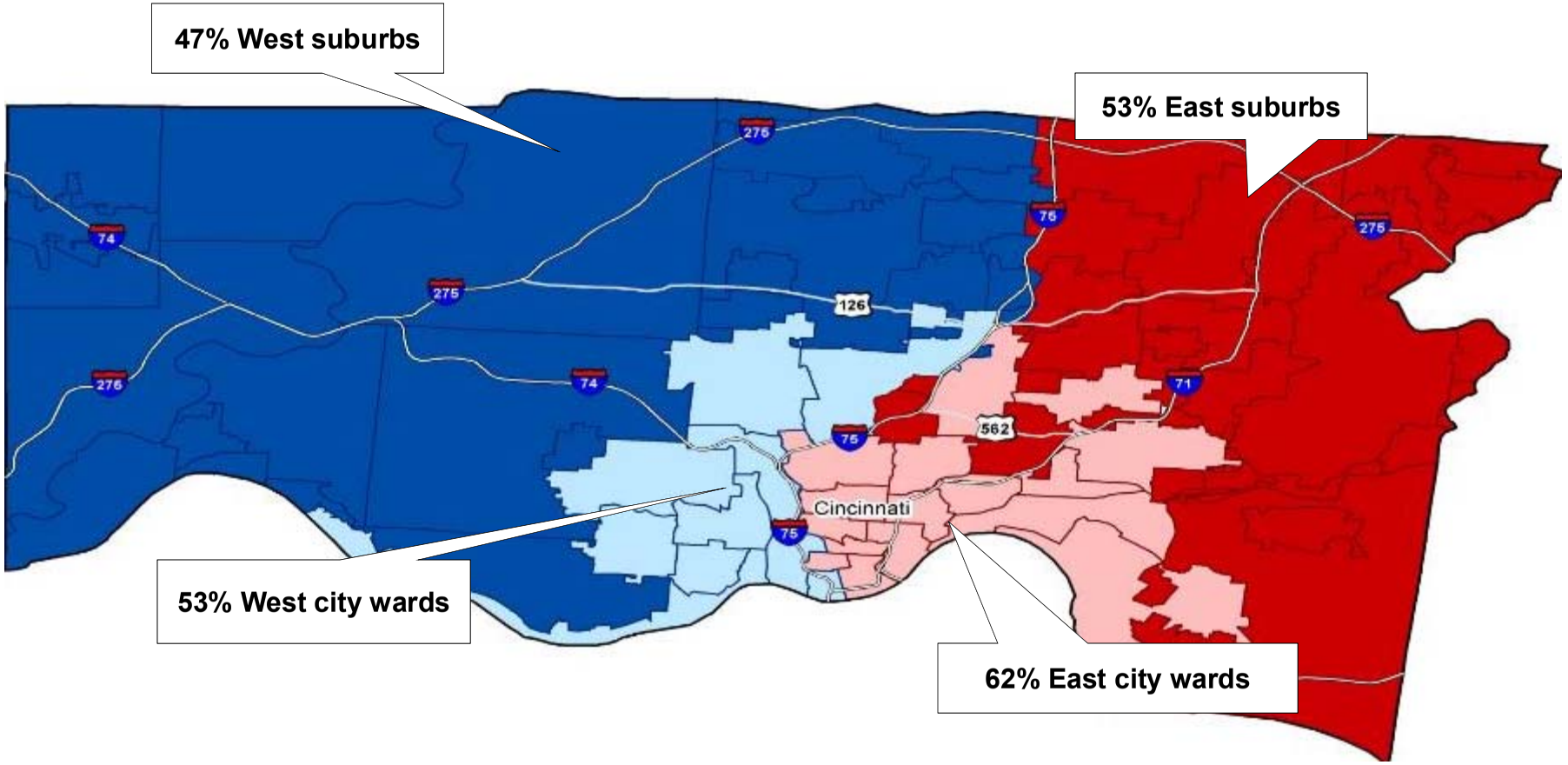
** Differences were "nominally" significant*

Transit Service Priorities



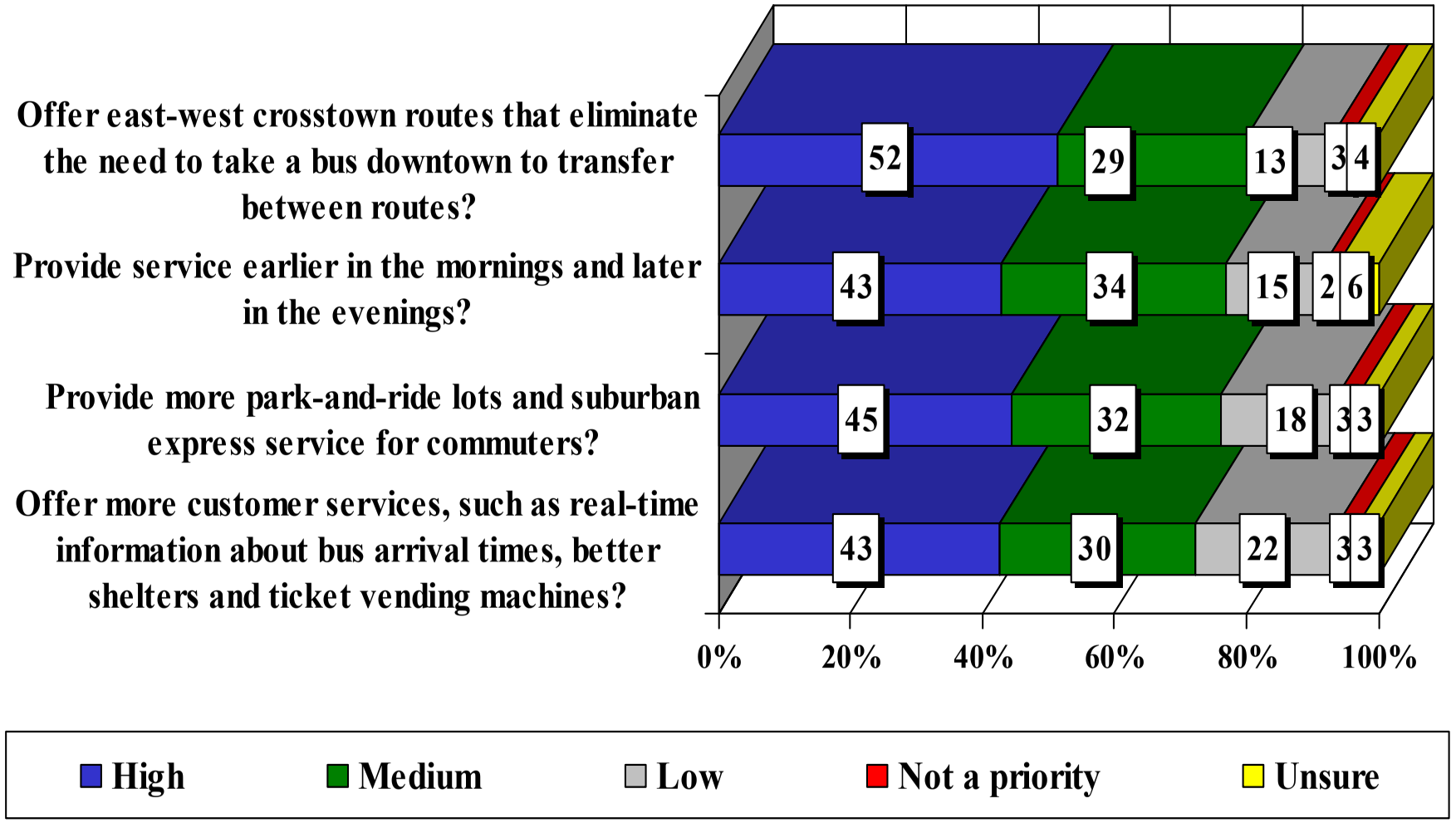
How much of a priority should it be to…

Crosstown Service Highest Priority



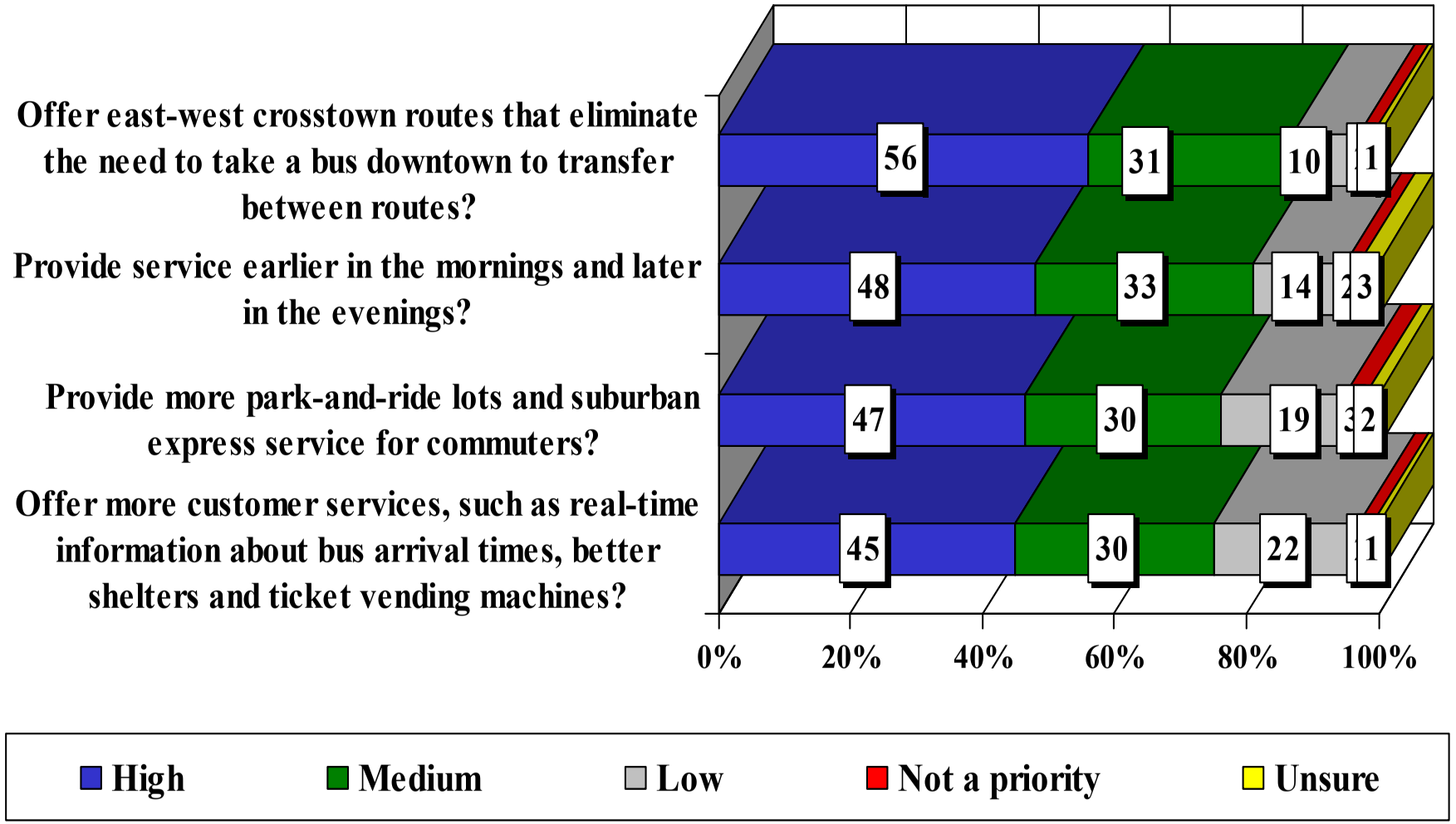
How much of a priority should it be to offer east-west crosstown routes that eliminate the need to take a bus downtown to transfer between routes?

53% High Priority



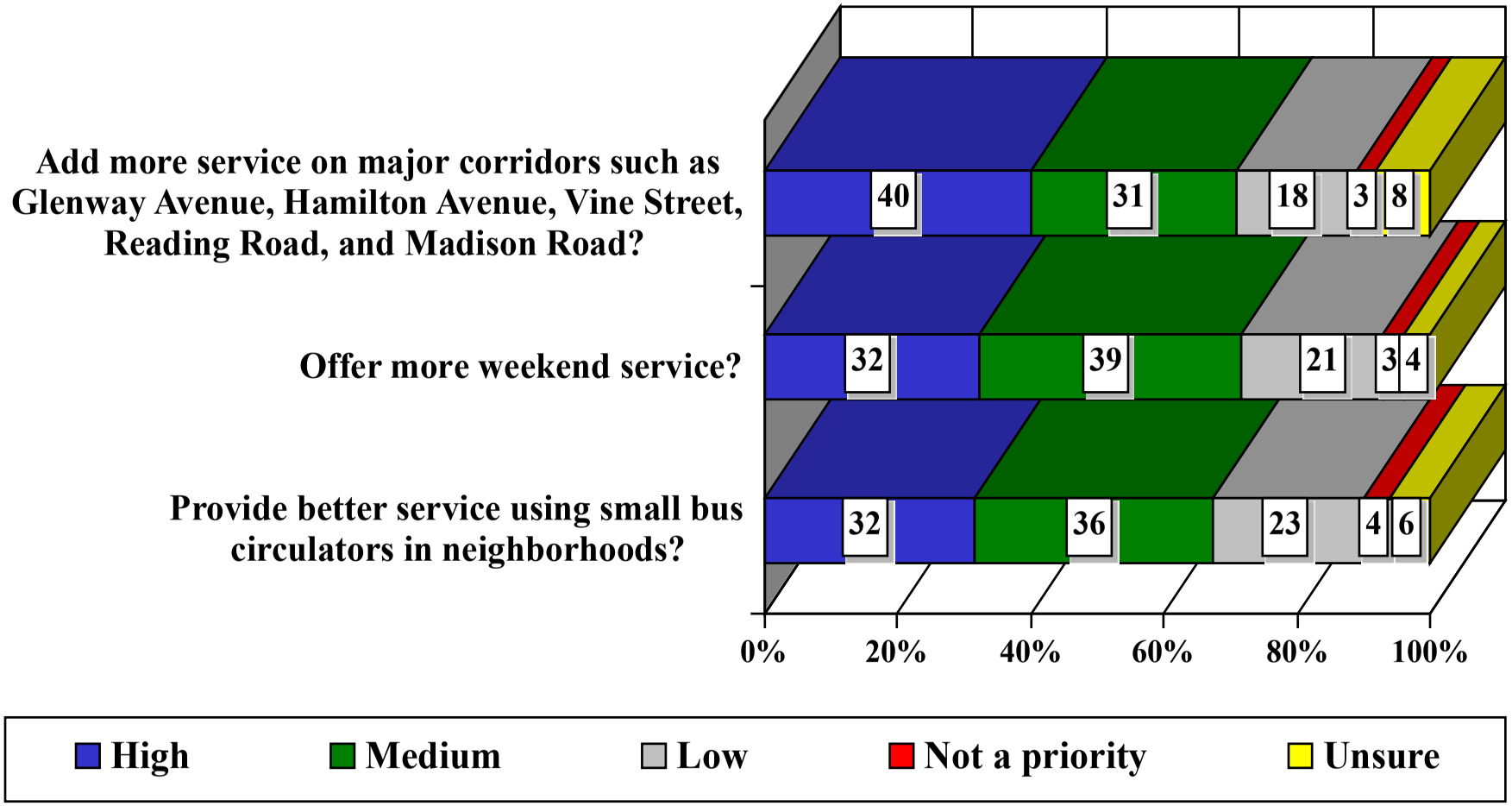
How much of a priority should it be to…

Among Non-Transit Users



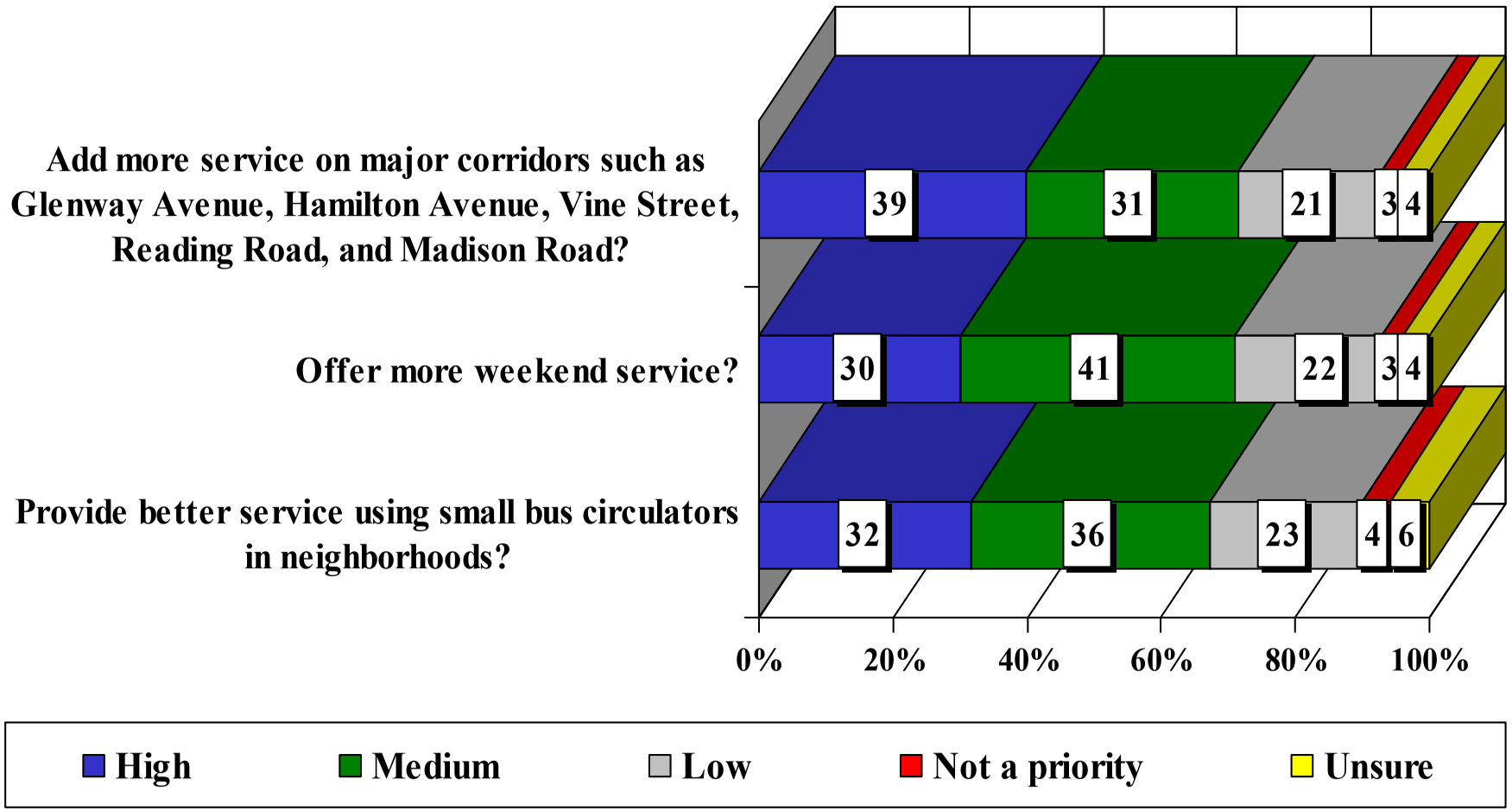
How much of a priority should it be to…

Among Those Working O/H



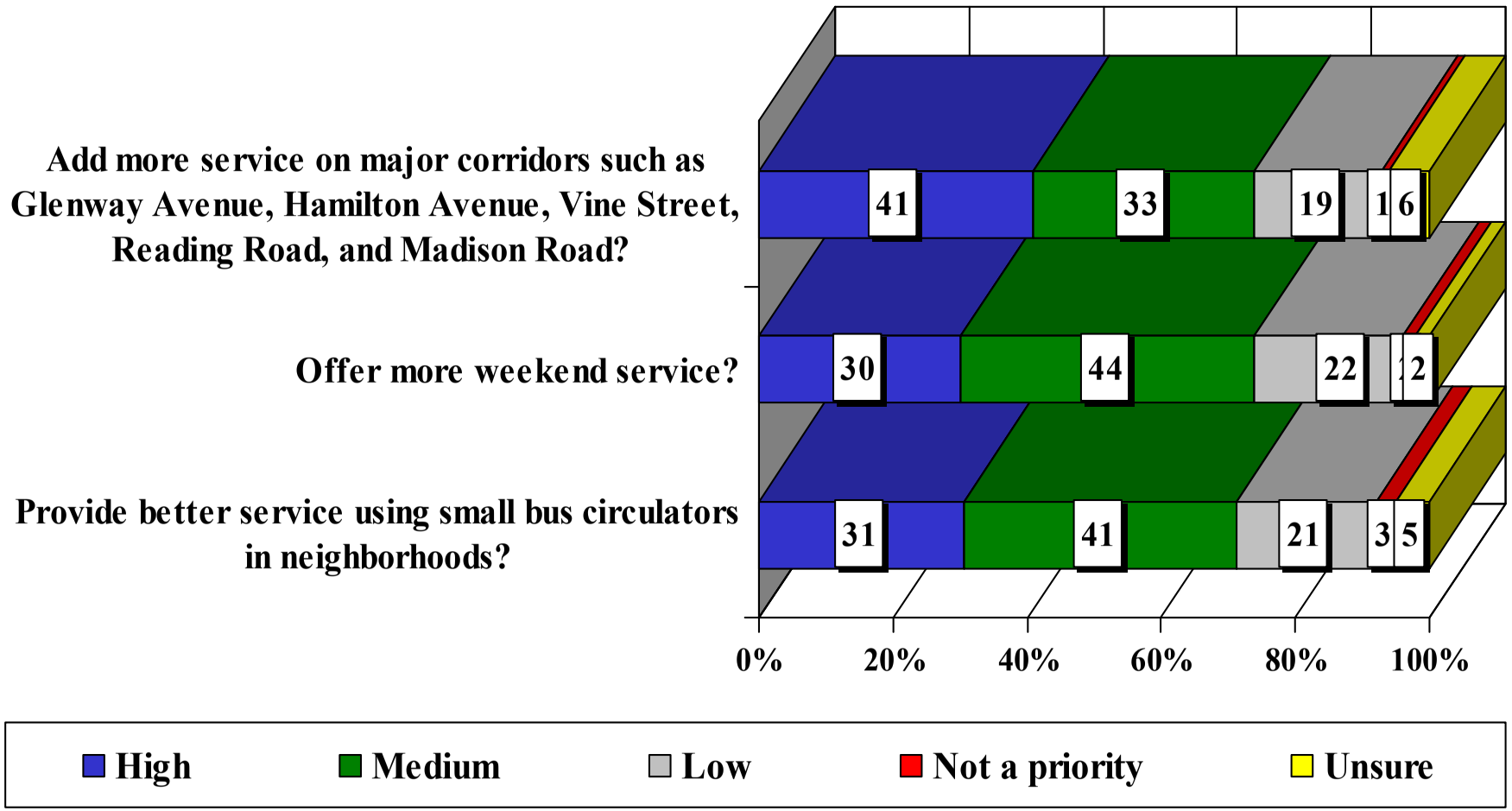
How much of a priority should it be to…

Circulators Lowest Priority



How much of a priority should it be to…

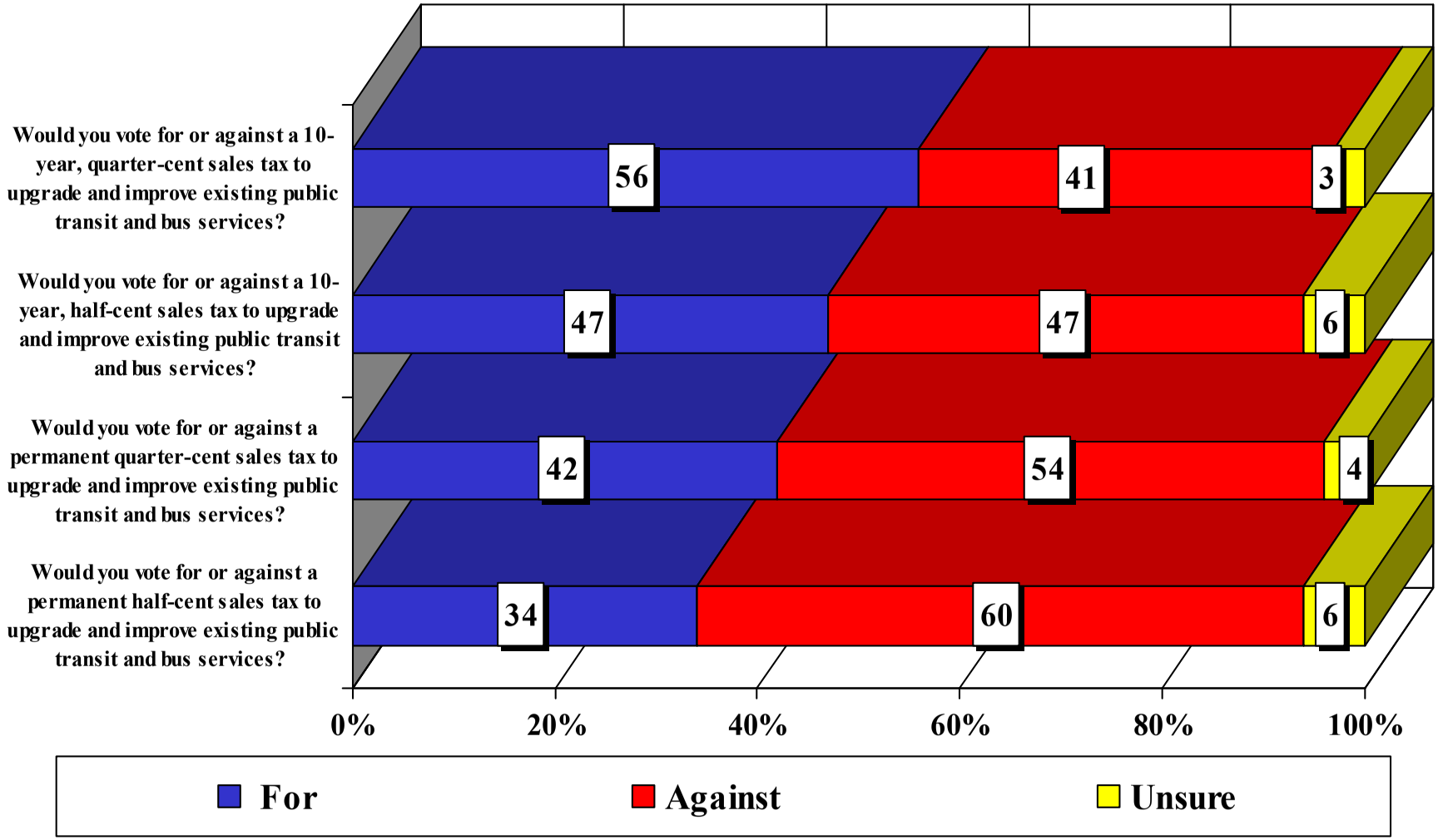
Among Non-Transit Users



How much of a priority should it be to…

Among Those Working O/H

Conclusion



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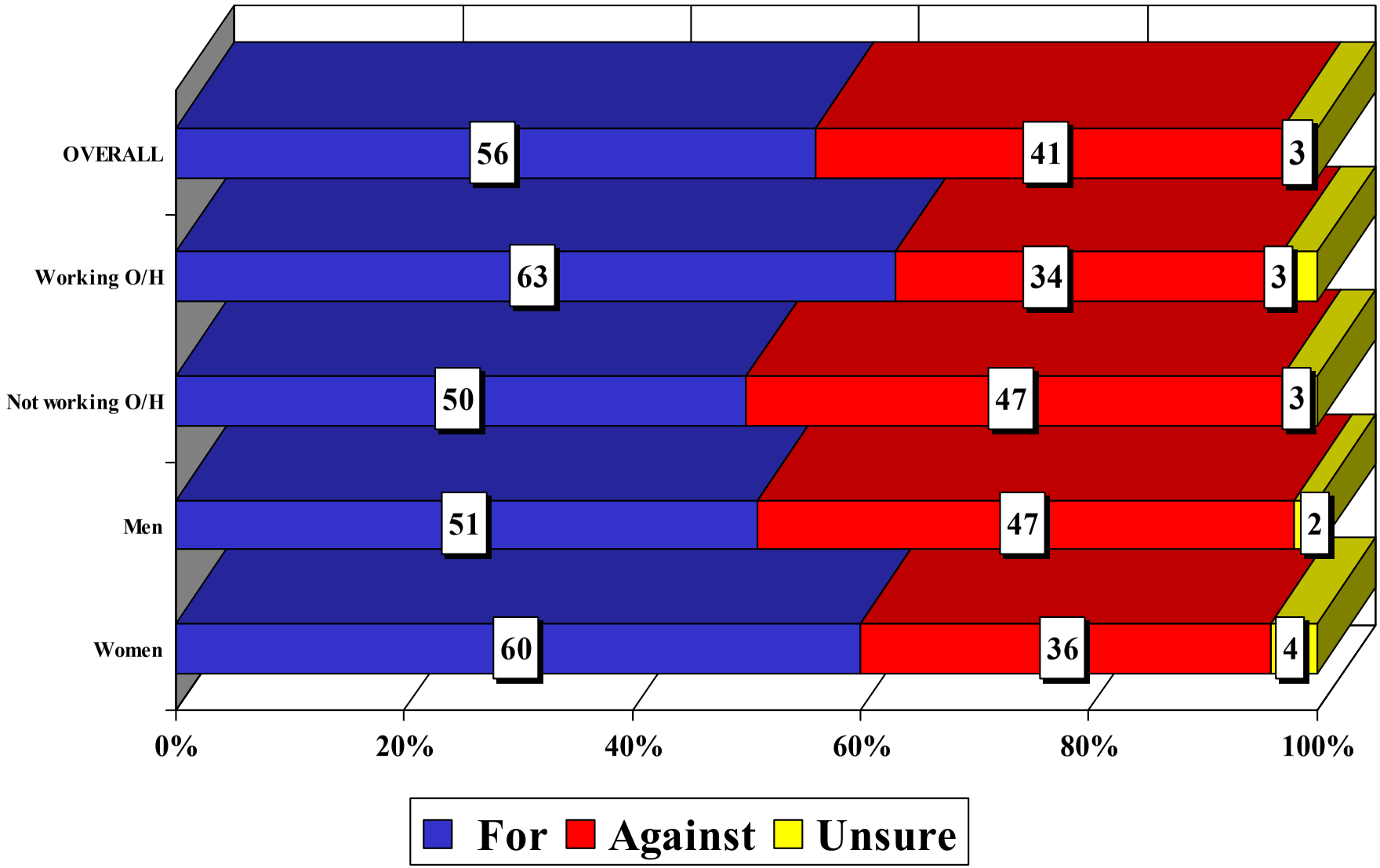
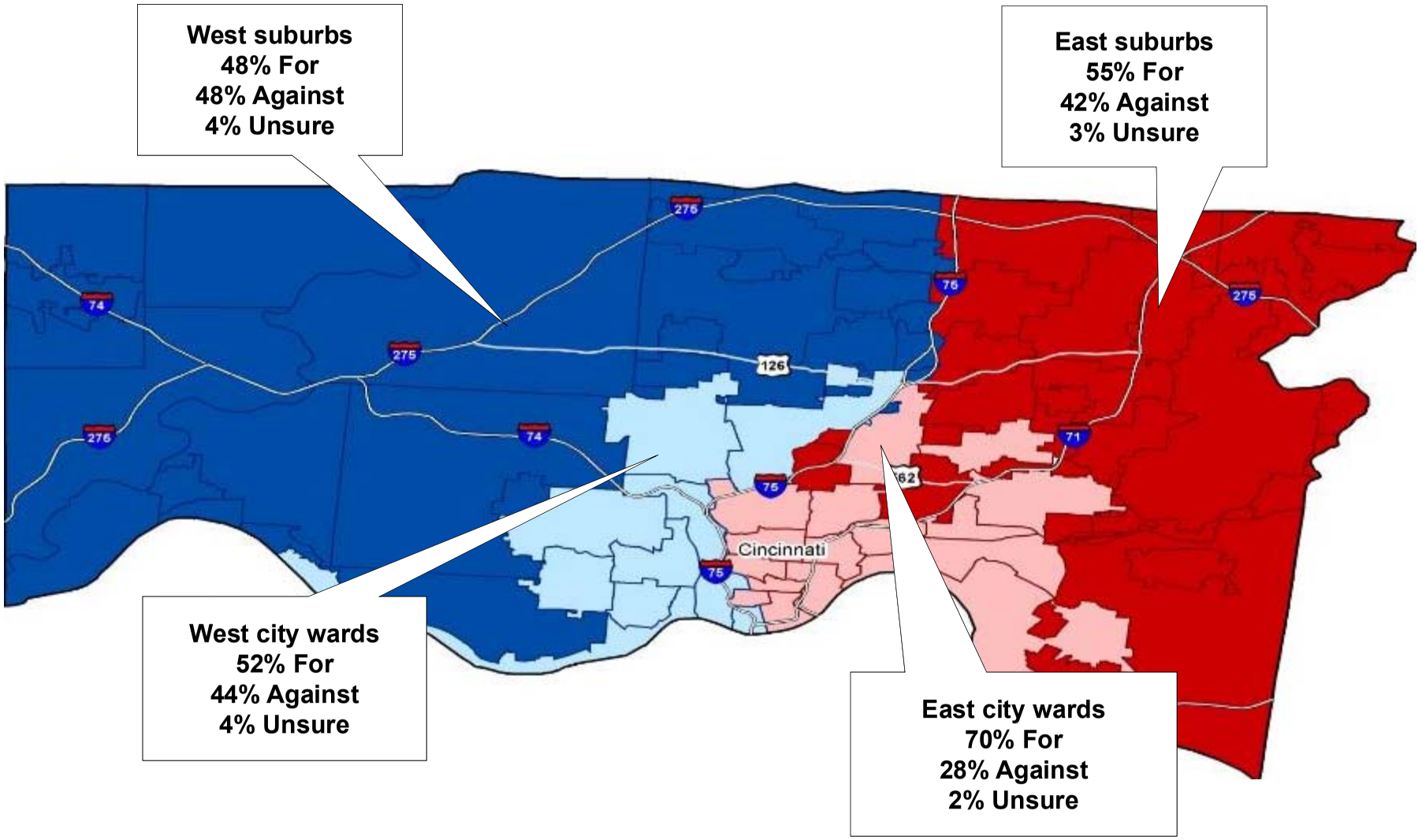


10-Year, Quarter-Cent Sales Tax



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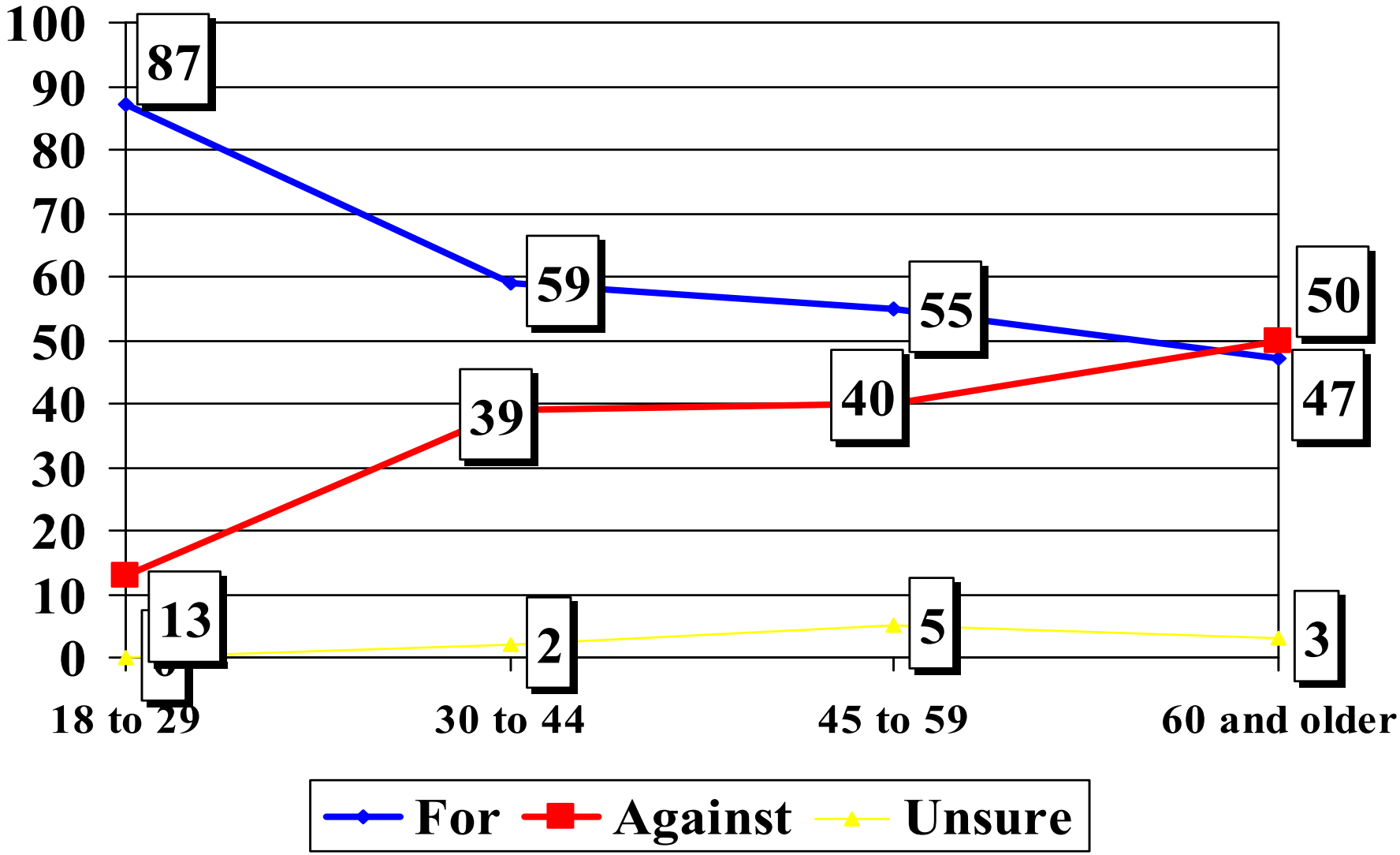
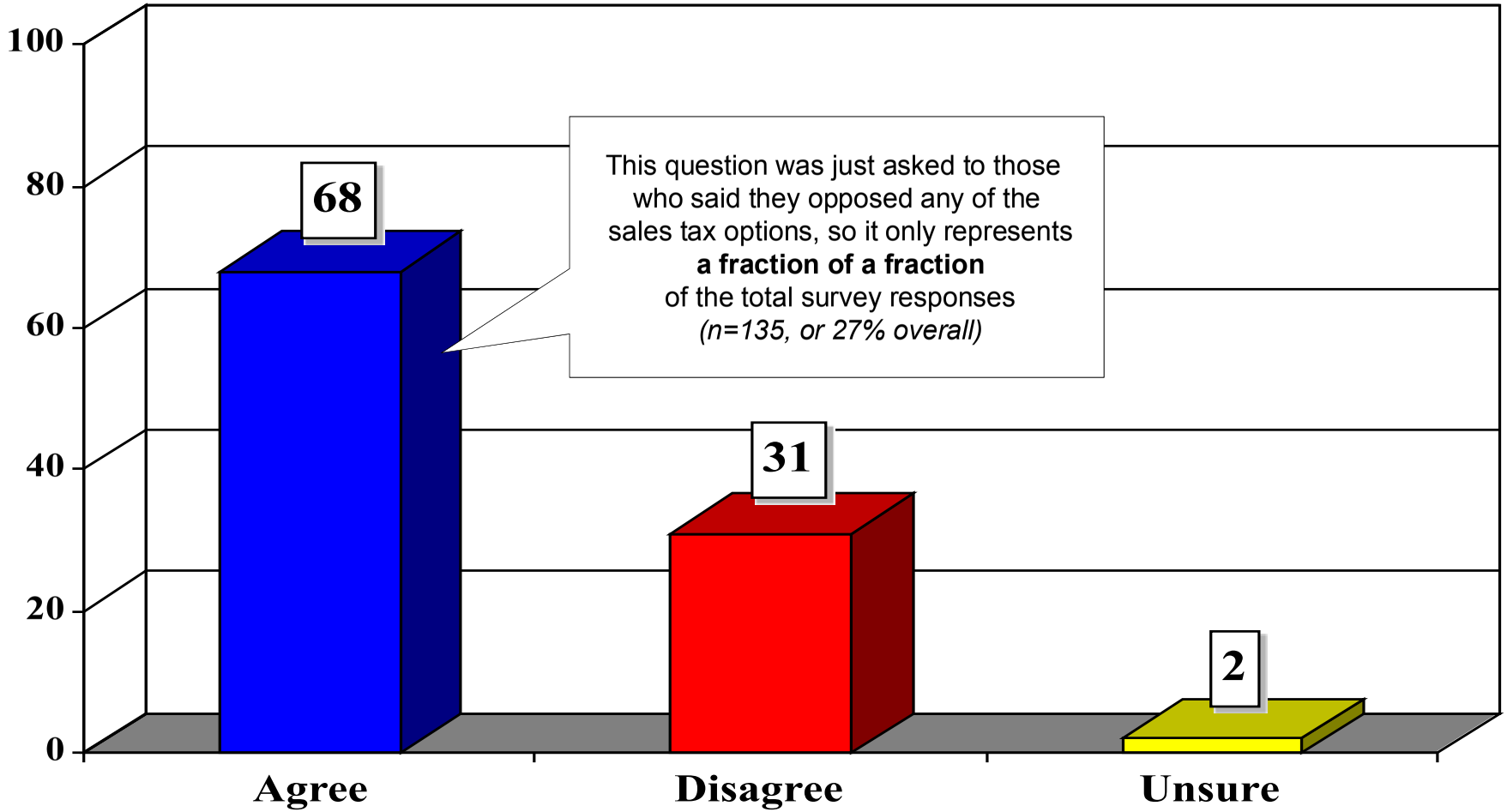


10-Year, Quarter-Cent Sales Tax



Do you agree or disagree that you would not vote for additional taxes to improve existing public transit and bus services under any circumstances?

Respondents Opposed to Sales Taxes

n=199

QUESTIONS?

The Community Impact and Related Benefits of Metro

Prepared by the

Economics Center

November 2015

EconomicsCenter

The Community Impact and Related Benefits of Metro

TABLE OF CONTENTS

EXECUTIVE SUMMARY

I. Purpose

- The Economics Center conducted a study to examine Metro's role as an economic development driver in the region by connecting workers to jobs, customers to businesses, and patients to medical facilities. With this information, Metro can better manage existing services and better plan for expansions in services based on the identification of areas of greatest need. Metro can also use this information to target those areas with the greatest economic, employment, and quality-of-life impacts within the region.

- Although not an extension of this study, the Economics Center conducted a Benchmarking Analysis of Cincinnati against its Peer Cities in 2013. The findings were that Metro was the most operationally efficient and had the highest service capacity of all Bus only peer cities. This means that Metro best used its available resources to deliver public transportation services within the service area and that Metro was provided the highest amount of transportation services relative to population, time, service area, and households. This research is further supported by Metro's current reach to over 70% of establishments and 50% of Hamilton County's workforce within a quarter mile of a Metro route.

II. Key Findings

Riders

- There is a substantial relationship between where current and new routes are located relative to where current and new businesses are located. While this relationship is certainly mutual, Metro is both an active listener to the needs of riders and businesses as well as an important local influencer of and contributor to employer localization decisions. Metro is also the largest provider of public transit in the Greater Cincinnati area, providing **17 million rides annually** and bringing approximately **20% of Cincinnati's downtown workforce** into the City.

- Metro serves approximately 40,000 riders per weekday on average[1], with almost **45%** of those coming from the **top five Metro routes** (these 40,000 riders do not include Metro's "XTRA routes", such as bus services for Cincinnati Public Schools). These routes support the local economy and bring individuals from the suburbs to the downtown as well as vice versa. However, the **23 routes** with the least ridership have a combined ridership (4,600 daily riders) of **less than that of the top Metro route**, number 43 (4,800 daily riders). Additional information concerning the average bus size and capacity would offer insight into means of optimizing Metro's ridership and network capacity.

- Metro has an average bus ridership of **less than 9 riders at a time** (total passenger miles divided by total revenue miles). Demand Response trips have an average ridership of **less than 1.5 persons at a time.**[2]

[1] According to Metro provided ridership survey data from December 2014 until February 2015
[2] 2013 National Transit Database for SORTA

Average Passenger Count based on Passenger Miles and Revenue Miles

Transit Area	Average Passenger Count
Cincinnati	8.57
Columbus	6.99
Raleigh	10.80
Indianapolis	5.91
Louisville	9.31

Data from 2013 National Transit Database

- Metro supports one job per **$5,900** of expenditure within Hamilton County**, $2,700** of which is locally subsidized. This means that when looking only at commuters and the total Metro expenditures, each commuter costs approximately $5,900 in total with $2,700 of those dollars coming from local tax revenues. The $2,700 is from the $42 million of local subsidy whereas the other $3,200 is comprised of federal, state, fare, and other funding sources. Based on four other bus-only peer cities, Cincinnati is tied for the least local cost and second least total cost per commuter. This is likely due to Metro's substantial reliance on fare revenue, with the highest proportion of revenues coming from fares relative to the peer cities.

Operations Costs per Commuter

Transit Area	Local Cost	Total Cost
Indianapolis	$ 2,700	$ 7,400
Cincinnati	$ 2,700	$ 5,900
Raleigh	$ 2,800	$ 5,200
Louisville	$ 3,900	$ 6,500
Columbus	$ 5,600	$ 7,400

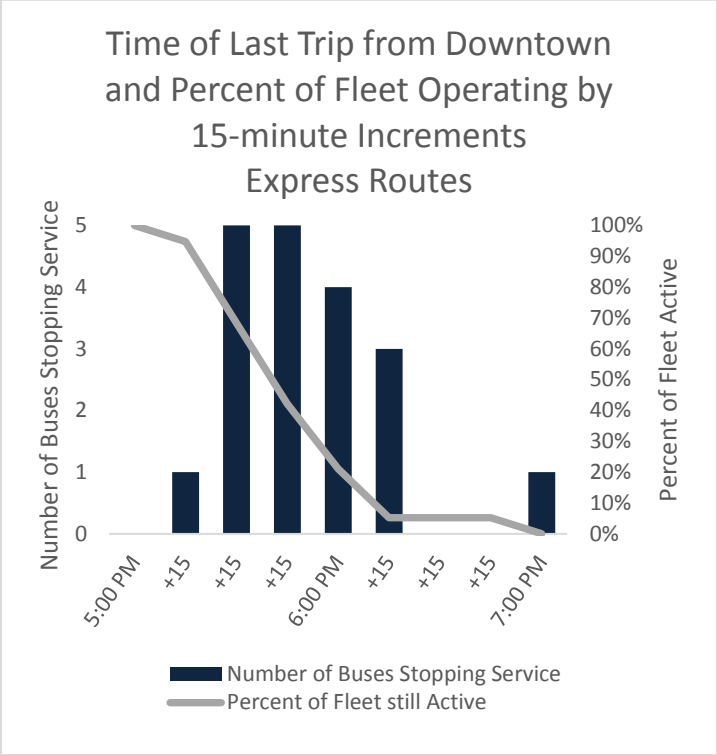
Data from 2013 National Transit Database and 2013 American Community Survey

Jobs and Establishments

- There are approximately 15,500 daily commuters using Metro as a means of transportation to or from work.[3] There are over 421,000 total job positions within a quarter mile of a Metro route. Assuming that a quarter mile is the furthest distance an individual would walk from the bus to work, **only 3.7% of potential commuters are utilizing Metro to get to work**. This number would be even lower if one was willing to walk further than a quarter mile.
- Additionally, more than **16,400 (70% of total)** establishments in Hamilton County are within a quarter mile of a Metro route. However, this 70% does not take into account limited route timing by hour or the level of service by day.
- Although Metro has a seemingly low commuter saturation rate of 3.7% of the potential commuters, Columbus, OH, only supports 2.3% of potential commuters by the same metrics. Additionally, more than 75% of all jobs and more than 80% of all establishments in Franklin County are within a quarter mile of a Central Transit Authority route.

[3] Calculated from Metro's service area using 2013 American Community Survey data

- **16 of the bottom 20 Metro routes**, in terms of daily riders, **are Express routes**. Further, all of the express routes combined have a total of **less than** any of the top four Metro routes. This means that there are four routes that individually carry more daily riders than the entire Express system. Based on the peak ridership and schedule information, it is likely that the Express routes have a limited ridership base due to limited schedules. Further, **only four out of nineteen** Express routes continue downtown pickup service until or after **6:00pm**.



- There are over 50,000 jobs in Health Care that do not have access to Metro services within a quarter mile of a work establishment, which also means that consumers of Health Care cannot use Metro to get to these hospitals, clinics, or doctors' offices. Manufacturing has a gap of approximately 25,000 workers that cannot use Metro or would have to commute over a half mile from a route to get to work.

- The top five fastest growing zip codes in terms of job growth from 2009 until 2014 are all within the service areas for the top five Metro routes, however, they are also adjacent to Interstate 71 and Interstate 75. This is likely due to site selection criteria for a number of industries including proximity to transit and highway access for trade, transportation, and warehousing as well as access to a qualified knowledge workers labor force for service providing industries such as professional or technical services. Additionally, incentives offered by local municipalities influence the localization of firms.

- There are two primary hubs of job growth within Cincinnati; the first includes four out of the top ten fastest growing zip codes (45220, 45229, 45219, & 45202) and includes Downtown up through CUF, Clifton, and Avondale and North Avondale. The second hub includes five of the ten fastest growing zip codes (45241, 45242, 45141, 45243, & 45227) and contains Sharonville, Blue Ash, Montgomery, Loveland, Indian Hill, and Madisonville. The only top ten fastest growing zip code that is not adjacent to any other top ten is 45255, which includes Cherry Grove/Forestville. These findings might lend support to the case that Metro is serving or providing opportunity to the fastest growing areas, however there may exist gaps in frequency of service or stop location.

Congestion and Services

- Metro potentially reduces the impact of parking congestion in downtown by approximately **25%** (approximately 8,500 parking spots) of the total monthly permit spots within the central business district based on the top-5 routes alone.
- Metro's reduction in drivers' vehicle miles traveled is equal to approximately **$6.5m in social costs** (e.g., costs of pollution, safety and injury, congestion, and time).
- Based on midday service offerings, utilizing Metro from Blue Ash (Kenwood and Cooper Road) to the Sharonville Convention Center would take anywhere from **two hours and twenty minutes** to approximately **three hours** depending on connections and transfers. This finding provides some evidence that Metro may be lacking radial or crosstown service.

III. Concluding Remarks

- While Metro provides access to a number of employment, amenity, and entertainment hubs, the Economics Center explored the level of service relative to the total potential users. The technical analysis provides valuable insight into the total number of riders, jobs within a walking catchment (a quarter and half mile were used as they closely represent five- to ten-minute and ten- to fifteen-minute walks), the number of establishments, and the makeup of jobs and the economic strength of service regions along Metro routes.
- Metro is an important means of transportation to over 15,500 local employees of companies within the Cincinnati and Hamilton County areas. The top five bus routes provide critical access for thousands of individuals to get to work across all income levels and job types. However, **only 3.7%** of the total workforce within a quarter mile of a Metro route utilize the bus services to commute.
- Metro's provides access to hubs of employment, namely Downtown, the CUF/Heights/Clifton area, and the northern I-75/I-71 corridors, ensures that individuals have access to employment in a variety of industries and wages. In particular, Metro currently connects the fastest growing industries amongst the top five fastest growing zip codes in terms of employment.
- The Metro system currently offers transportation opportunities to over half of Hamilton County's workforce.[4] Additionally, 70% of all establishments in Hamilton County are within a quarter mile of a Metro line. However, only **3.7%** of potential commuters use Metro as a means to work. The research indicates that timing of buses, limited Express route offerings, and Express peak capacity may be a limiting factor in terms of ridership.
- According to the City of Cincinnati Zoning Code, new Commercial Use office buildings are required to construct one parking spot per **400 gross square feet**. Based on a number of new construction projects in Cincinnati, this means that an office building requires approximately **one parking spot** per **1.3 employees**. This requirement may be enabling and contributing to

[4] Based on the total number of jobs in Hamilton County and the number of jobs within a quarter mile of a Metro route.

additional congestion in the Central Business District, a lesser-reliance on public transportation, and fewer individuals using Metro to commute to work.

- Nearly half of Metro's budget is funded locally through an earnings tax on all wages earned within the City of Cincinnati. While the City's total earnings tax is 2.1%, Metro's share is 0.3% of the City's total earnings. This equates to $150 of tax revenue for Metro per $50,000 in earnings, one-seventh of the total City's earnings tax of $1,050 per $50,000.

- Based on the Economics Center research, Metro could benefit from further research detailing capacity issues relative to peak Express route timing, the impact of additional radial, crosstown, and paratransit vehicles, and a demand analysis of Hamilton County individuals' perceptions, user experiences, and information concerning opting out of Metro transportation services.

PURPOSE

Metro, Southwest Ohio's publicly-funded, fixed-route bus system operated by the Southwest Ohio Regional Transit Authority (SORTA), has economic, environmental, and quality-of-life impacts on the City of Cincinnati and the Hamilton County region. The bus system connects individuals from all over the region to employment hubs, amenities, the airport, and entertainment options.

The Economics Center conducted a thorough analysis of the economic impacts derived from the Metro system. The study examined Metro's role as an economic development driver in the region by connecting workers to jobs, customers to businesses, and patients to medical facilities. Metro also fills an important role in workforce development in the region by connecting students to education institutions.

Although not an extension of this study, the Economics Center conducted a Benchmarking Analysis of Cincinnati against its Peer Cities in 2013. The findings were that Metro was the most operationally efficient and had the highest service capacity of all Bus only peer cities. This means that Metro best used its available resources to deliver public transportation services within the service area and that Metro was provided the highest amount of transportation services relative to population, time, service area, and households. This research is further supported by Metro's current reach to over 70% of establishments and 50% of Hamilton County's workforce within a quarter mile of a Metro route.

By better understanding the relationships between Metro, the community, and the commercial environment in Hamilton County, SORTA will be able to better plan for expansion based on the needs of the individuals living, working, and engaging within the Cincinnati Metropolitan Statistical Area[5] (MSA).[3] The Economics Center highlighted both the fastest growing industry sectors and the fastest growing employment areas. In addition, the Economics Center provided data on the fastest growing industries along the most valuable and traveled Metro routes.

Further, the Economics Center evaluated the benefits to the community due to reduced congestion from Metro's operation. Factors such as vehicle emissions, reduction in travel time, vehicle cost savings, and prevented accidents were quantified to summarize the total direct and indirect impact to the Hamilton County economy.

Lastly, the Economics Center conducted an economic impact assessment to determine the total number of jobs supported for every dollar spent by Metro. This analysis utilized multiple data sources to describe the usage of public transit within the Hamilton County and Cincinnati regional economy.

[5] The Cincinnati MSA consists of fifteen counties across three states: Dearborn (IN), Franklin (IN), Ohio (IN), Boone (KY), Bracken (KY), Campbell (KY), Gallatin (KY), Grant (KY), Kenton (KY), Pendleton (KY), Brown (OH), Clermont (OH), Hamilton (OH), Warren (OH), Butler (OH), Wilmington (OH), and Clinton (OH).

TECHNICAL ANALYSIS

The Economics Center conducted a series of analyses investigating the economic, employment, and wage impacts of the Metro bus system on the regional economy. Moreover, the Economics Center looked specifically at the impact of routes and stops, and the number of employers, employees, and job growth.

There is a significant relationship between the demand for new routes and stops and the development of businesses based on existing routes and infrastructure. While the relationship is certainly mutual, Metro is an important local influencer of and contributor to employment and transit in the Greater Cincinnati area, providing 17 million rides annually and bringing approximately 20% of the downtown Cincinnati's workforce into the City.

The Technical Analysis is divided into six distinct economic, employment, and impact sections. The sections are as follows:

- Analysis of Metro's economic benefits by ridership
- Identification of growing job clusters in Metro's service area
- Analysis of Metro's economic benefits: employment impacts
- Analysis of Metro's economic benefits: personal impacts
- Congestion mitigation
- Jobs supported by Metro

Each section outlines findings and information concerning methodology and the scope of the analysis. Additionally, assumptions are outlined within each section.

ANALYSIS OF METRO'S ECONOMIC BENEFITS BY RIDERSHIP

Metro provided approximately 17 million trips in 2013. Also, Metro drove approximately 80 million passenger miles. Based on these numbers, the average Metro trip is just over four miles. Further, based on the number of revenue miles, Metro's average bus capacity is just under nine passengers at a time. Metro's Demand Response transit system averages approximately one-and-a-half riders at any time.

Table 1 details Metro's average ridership and contextualizes the ridership to four other peer cities that have Bus-only public transit. Cincinnati has a higher average ridership than both Columbus and Indianapolis, but a lower ridership than Raleigh and Louisville.

Table 1

Average Passenger Count based on Passenger Miles and Revenue Miles

Transit Area	Average Passenger Count
Cincinnati	8.57
Columbus	6.99
Raleigh	10.80
Indianapolis	5.91
Louisville	9.31

Data from 2013 National Transit Database

Metro enables more than 421,000 individuals to access the bus system within a quarter mile of their employer. This accounts for over half of all jobs within Hamilton County. Table 2 details the number of total jobs in 2014 in Hamilton County, as well as the number of jobs within a quarter-mile and half-mile buffer of a Metro route.

Table 2

Number of Employees in Hamilton County with Access to Metro Route by Radii from Place of Employment

Geography	Employees
Hamilton County	825,527
Half Mile	462,399
Quarter Mile	421,870

Source: 2014 Q3 ES-202

The Economics Center used two distance buffers from Metro routes to determine accessibility. These distances are a quarter- and a half-mile from a Metro route. The buffers are continuous along routes and do not scallop based on distance from stops; this is due to limited stop data concerning the overlap of routes. The analysis uses these two buffers to be proxies for a pedestrian walking catchment of approximately five to ten minutes depending on walking speed (three miles per hour being the assumed average).

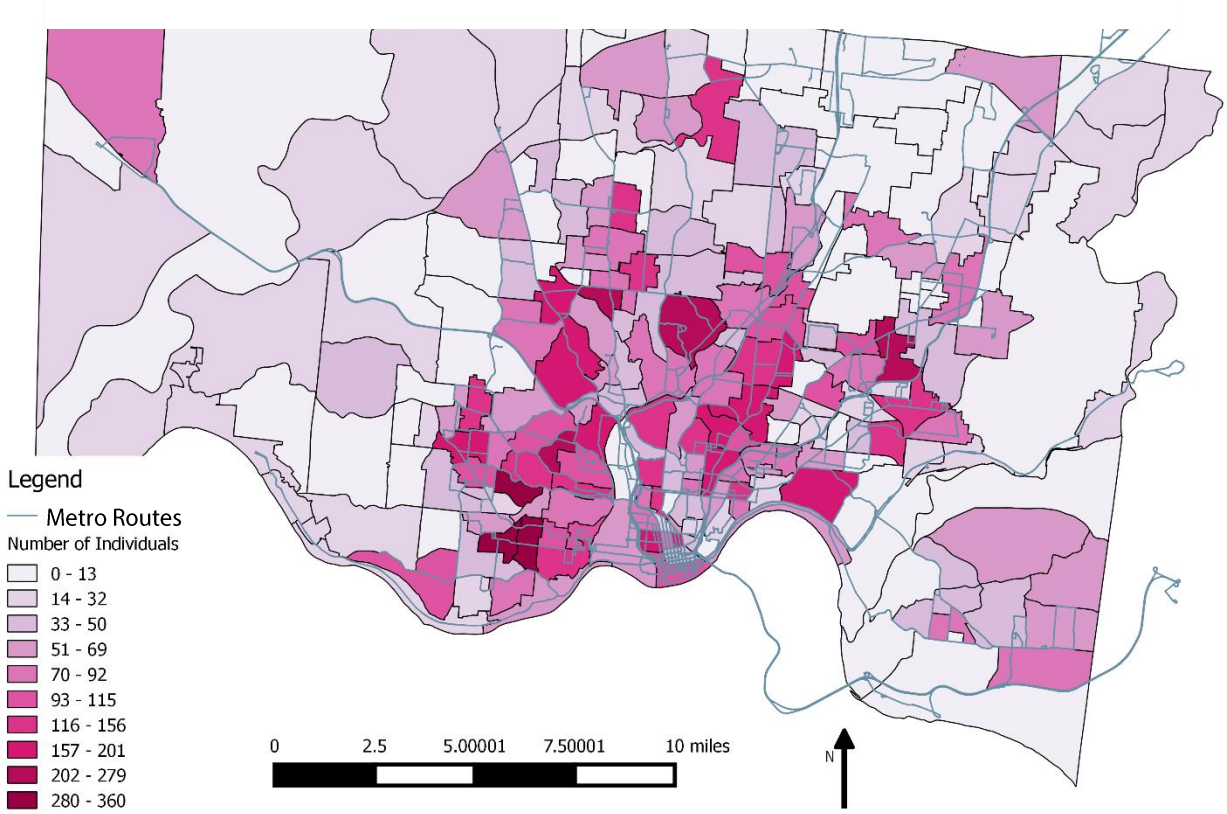
Figure 1 shows the number of workers reporting the use of public transportation (excluding taxicab) on the 2013 American Community Survey by census tract. Areas of the highest concentration of Metro users are located within the City of Cincinnati and neighboring townships. However, an important distinction must be made concerning the usage of the Metro system within this area: while there are more users in this concentrated area, the existing density of routes and frequencies of buses and stops are greater than that in the further out regions of the service area and may contribute to a cyclical effect on use and expansion. In other words, people may ride the Metro at a higher rate Downtown because there are more options, whereas individuals in less-serviced areas may not see the Metro serving their needs.

However, there are a number of high-usage census tracts outside of the centralized service area. In particular, Harrison in northwest area of Hamilton County, Forestville and Cherry Grove in eastern Hamilton County, Forest Park in northern Hamilton County, and the Kenwood area to the northeast have substantial usage, primarily at the park and ride locations.

The census tracts with the highest number of users also tend to have the highest rate of use. This is intuitive as the Downtown area also has a higher residential density than the census tracts on the periphery. It is important to note that the number of workers portrayed above are not the per capita usage rate; instead, the rate of use was computed using census tracts, which are on average 4,000 people. This was done to improve the likelihood of a normalized sample, but also provide nominal information on the number of users. Providing use rates only could inflate the relative impact of Metro's services in lower population, high usage areas. Instead, showing the number of users in relatively similar population sizes of varying geographies allows Metro to better understand the number of users in more finite areas.

Figure 1

Number of Workers Reporting Use of Public Transit (Excluding Taxicab) by Census Tract, 2013 ACS



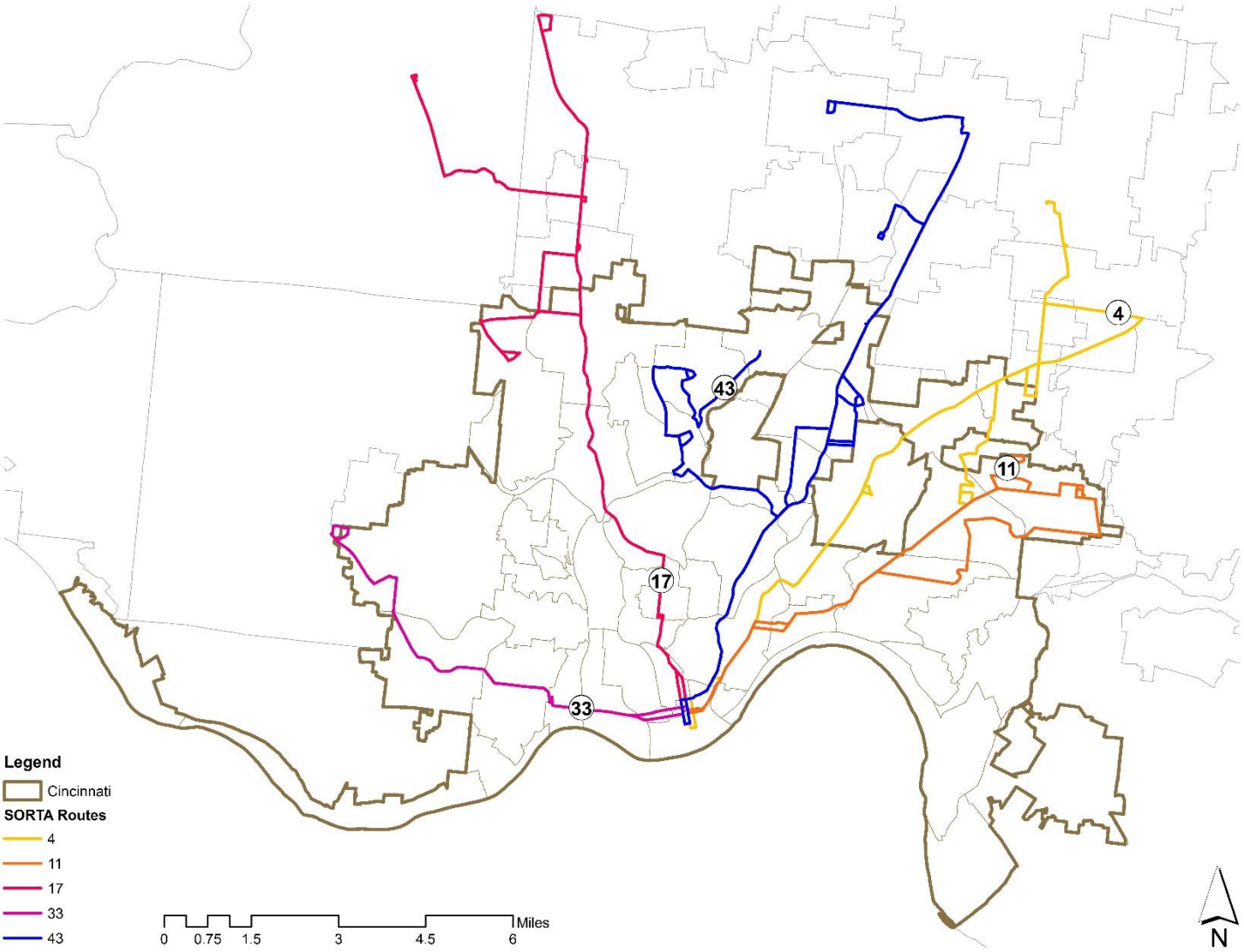
Metro bus routes carry approximately 40,000 daily weekday riders, with the top five routes within the Metro system carrying an average of nearly 45% of all daily riders (17,615)[6]. These routes (33, 17, 42, 4, and 11 ordered from West to East) are shown below on Figure 2. These routes are much more centralized to the City of Cincinnati, with two of the five routes contained nearly entirely within the City. The routes all contribute to a hub and spoke system layout, the central hub for the top five routes being the central business district and Government Plaza station. Further, the Metro route with the highest ridership (route 43), has a greater individual ridership than the combined ridership of the 23 routes with the fewest riders.

Lastly, sixteen of the bottom twenty Metro routes, in terms of daily riders, are Express routes. Additionally, all of the express routes combined have a total of less than any of the top four Metro routes. This means that there are four routes that individually carry more daily riders than the entire Express system. Based on the peak ridership and schedule information, it is likely that the Express routes have a limited ridership base due to limited schedules. Further, only four out of nineteen Express routes continue downtown pickup service until or after 6:00pm.

[6] Based on daily ridership collected from December 2014 through February 2015.

Figure 2

Metro's Top Five Routes by Number of Average Weekday Riders



The routes fan out to the edge of Cincinnati in two cases (Routes 11 and 33) and out into Hamilton County in the other three cases (Routes 4, 17, and 43). Routes 17 and 43 have their own network of multiple smaller route options depending on time of day and service case. All together, these routes are providing access to more than 17,000 rides potentially starting in or ending in downtown Cincinnati. Based on the Downtown Cincinnati Parking Study conducted in April 2015, if half of these 17,000 daily rides (8,500) ended in the Downtown and prevented single drivers from driving to Downtown, then these five routes would be freeing up nearly 25% of the 37,000 Downtown contract parking spaces available.

IDENTIFICATION OF GROWING JOB CLUSTERS

Within zip codes served by Metro, the five fastest growing job sectors are in Health Care, Manufacturing, Administrative Services, Education, and Professional and Technical Services. Table 3 highlights these top five sectors, as well as the total number of jobs gained over a 5-year period within the zip codes served. The industries are coded according to the North American Industry Classification System (NAICS).

Table 3

Top Five Job Growth Sectors in Hamilton County Zip Code Area, 2009-2014

RANK	Industry Code	Job Growth	Average Wage
1	Health Care and Social Assistance	15,140	$50,835
2	Manufacturing	3,912	$67,089
3	Administrative and Support Services	2,536	$34,456
4	Educational Services	2,129	$40,862
5	Professional, Scientific, and Technical Services	1,920	$71,227

Source: 2009 Q3 & 2014 Q3 ES-202

Health Care is a standout growth industry, as the number of jobs created is more than three times that of the second ranked industry, Manufacturing. The average wages of all of the fastest growing industries exceed that of Hamilton County's average per capita income ($30,162, adjusted to 2014 dollars). Metro's reach to these new jobs, particularly given their high relative wages, is vital to bolstering support for ongoing operations and expansions of bus services.

There are two primary hubs of job growth within Cincinnati; the first includes four out of the top ten fastest growing zip codes (45220, 45229, 45219, & 45202) and includes the Central Business District up through CUF, Clifton, and Avondale and North Avondale. The second hub includes five of the ten fastest growing zip codes (45241, 45242, 45141, 45243, & 45227) and contains Sharonville, Blue Ash, Montgomery, Loveland, Indian Hill, and Madisonville. The only top ten fastest growing zip code that is not adjacent to any other top ten is 45255, which includes Forestville and Cherry Grove.

Table 4 details the top five fastest employment growth zip codes as well as their respective industries ranked by the total number of jobs gained between 2009 and 2014. Zip codes 45220 and 45229 are both within the City of Cincinnati, whereas 45241, 45242, and 45243 are, for the most part, outside of the City. Additionally, these top 5 zip codes are also adjacent to interstate routes 71 and 75.

While zip codes 45220 and 25229 are adjacent, their respective top two ranked employment growth sectors are all unique. In fact, these two zip codes only share one sector in their top five and that is Accommodation and Food Services. This represents the wide breadth of businesses and activities in this urban employment hub surrounding the University of Cincinnati and the wide array of hospitals, public administration, support services, and service sector jobs.

Table 4

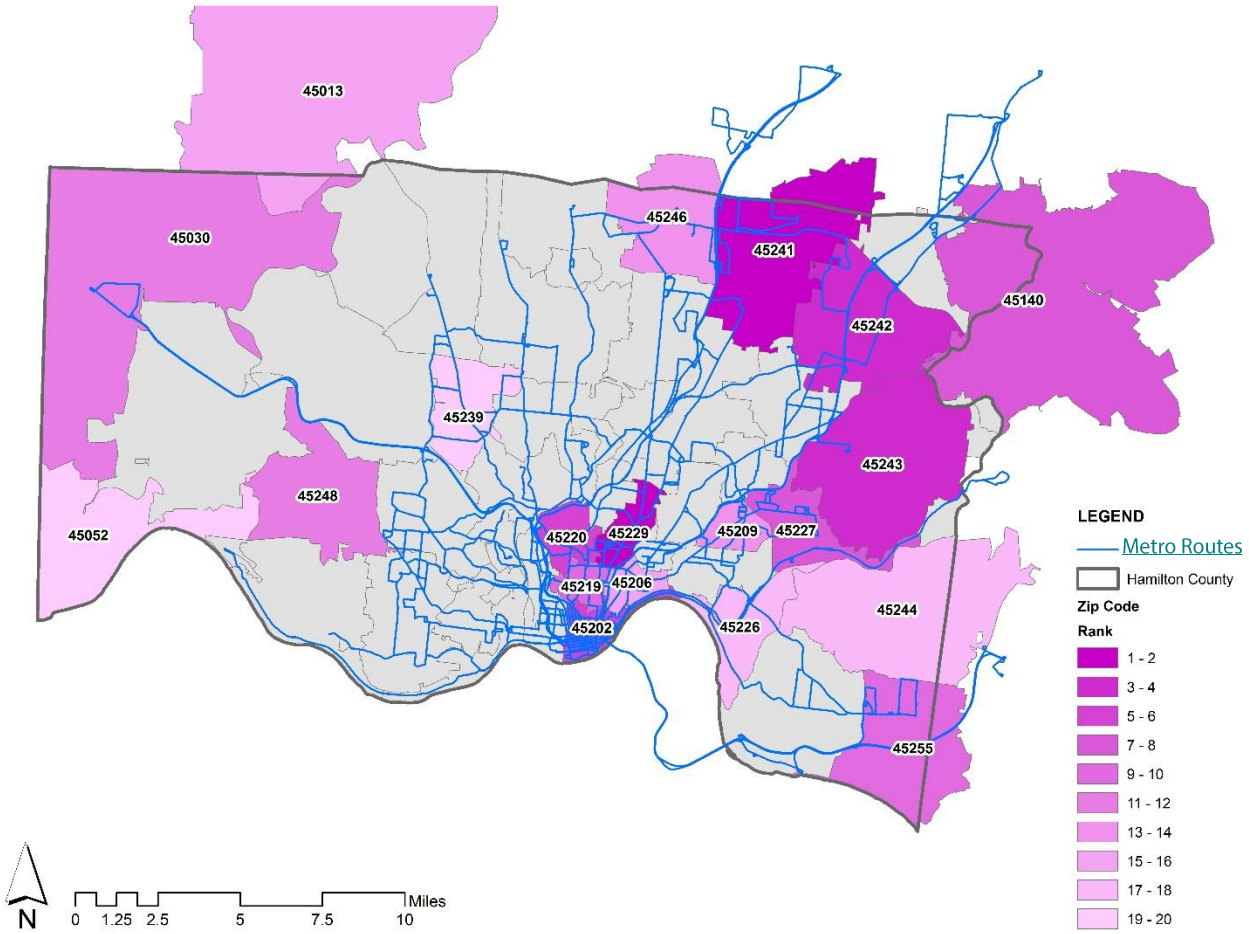
Top 5 Job Growth Sectors by Top 5 Job Growth Zip Codes					
Rank	45220	45229	45241	45242	45243
1	Educational Services	Health Care and Social Assistance	Health Care and Social Assistance	Administrative and Support Services	Professional, Scientific, and Technical Services
2	Public Administration	Management of Companies and Enterprises	Manufacturing	Professional, Scientific, and Technical Services	Arts, Entertainment, and Recreation
3	Accommodation and Food Services	Accommodation and Food Services	Wholesale Trade	Health Care and Social Assistance	Health Care and Social Assistance
4	Arts, Entertainment, and Recreation	Other Services (except Public Administration)	Transportation and Warehousing	Retail Trade	Finance and Insurance
5	Administrative and Support Services	Professional, Scientific, and Technical Services	Administrative and Support Services	Construction	Educational Services

Source: 2014 Q3 ES-202

Figure 3 features the top 20 zip codes for overall employment growth between 2009 and 2014. A significant number of the fastest growing zip codes are within areas with a high density of Metro routes. Additionally, many of the fastest growing zip codes feature job growth in similar industries, namely Health Care, Professional and Technical Services, and Administrative services. This can be used to better inform future expansion of Metro services, in particular connecting the top five employment growth and associated sector specific growth. Additionally, four of the zip codes share Health Care and Social Assistance and three share Administrative and Support Services.

Figure 3

Top 20 Zip Codes by Employment Growth, 2009-2014



Zip code 45241, the fastest growing zip with 13,226 jobs, is located between Interstate 75 (I-75) and Interstate 71 (I-71).The area is served by a number of bus routes including routes 42 and 42 Express, which extends from Downtown to the Meijer Park & Ride on Tylersville Road in West Chester Township; route 43 (the busiest Metro route), extending from Downtown to Glendale/Springfield Pike; and route 67, which extends from Downtown and nearly follows the outside perimeter of the zip code. Zip codes 45242 and 45243 share a significant portion of their bus routes, including routes 3 and 3 Express, 4, 71 and 71 Express, 72, and 67, which all follow a similar hub in Downtown to a spoke in the North/Northeastern portion of Hamilton County.

These three zip codes share the majority of their fastest growing sectors including Health Care, Administrative Services, Retail Trade, and Professional and Technical services.

The two remaining zip codes that experienced significant job growth between 2009 and 2014 are located within the City of Cincinnati. Zip codes 45220 and 45229 are adjacent to one another and extend from the University of Cincinnati to I-75, along I-75 to the border of St. Bernard, and then

bounded on the east by Victory Parkway back down to the University. This area is primarily served by routes 17, 19, 51, and 78, all routes in the top 10 busiest in terms of average weekday riders.

The sectors experiencing the most significant growth in this area include Educational Services, Health Care, and Accommodation and Food Services. While Educational Services and Accommodation and Food Services are, on average, lower wage industries than Health Care and Professional Services, many of the jobs in these sectors do not require a college degree, providing access to the labor market for many individuals in the area. Additionally, Metro connects a number of job readiness and workforce development centers to areas of potential employment for participants.

ANALYSIS OF METRO'S ECONOMIC BENEFITS: EMPLOYMENT IMPACTS

Metro bus routes provide critical access for transit-dependent workers, as well as a viable alternative mode of transportation for those whom have access to a private vehicle. As detailed in Table 2 above, more than 421,000 employees have access to more than 16,000 businesses within a quarter-mile radius of all Metro stops. This accounts for more than half of all employees and businesses within Hamilton County. In fact, nearly three-quarters of all businesses within Hamilton County are within a quarter mile of a Metro bus route.

Based on the daily commuter base of 15,500 individuals, Metro's yearly expenditures per commuter equate to approximately $5,900, with $2,700 of that coming from local tax revenue. These figures are calculated by taking the total operating expenditures and dividing them by the total number of commuters within the service area. The $2,700 comes from a local earnings tax of 0.3% of total earnings in Cincinnati whereas the other $3,200 comes from federal, state, fare, and other revenue. Table 5 details Cincinnati and benchmarks the city against four peer cities that also have Bus-only public transit. Cincinnati is tied for the lowest local job support cost and has the second lowest total cost. Columbus' local cost per job supported is nearly double the total cost of Cincinnati's.

Table 5

Operations Costs per Commuter

Transit Area	Local Cost	Total Cost
Indianapolis	$ 2,700	$ 7,400
Cincinnati	$ 2,700	$ 5,900
Raleigh	$ 2,800	$ 5,200
Louisville	$ 3,900	$ 6,500
Columbus	$ 5,600	$ 7,400

Data from 2013 National Transit Database and 2013 American Community Survey

Table 6 shows the geography, population, number of businesses, employees, and average wages of employees within Hamilton County. Individuals working within a quarter mile of a Metro bus route are the highest earners out of the three geographies (Hamilton County, Quarter Mile from Metro Services, and Half Mile from Metro Services). Additionally, the average wages paid per business is approximately $1.47 million within a quarter mile of a Metro route whereas this number drops to $1.4 million at a half mile.

Table 6

Number of People, Businesses, Employees, and Average Wages in Hamilton County by Radii from Metro Routes*

Geography	Metro Radius	Population	Businesses	Employees	Average Wage
All Hamilton	N/A	806,631	23,541	825,527	$56,387
	Half Mile	608,503	18,599	462,399	$56,306
	Quarter Mile	461,244	16,449	421,870	$57,272

Source: 2014 Q3 ES-202

Another employment and job indicator is the size of the employee base within companies. As companies grow in size, average wages tend to follow. Table 7 shows the employment cohorts of companies within a quarter-mile and half-mile radius of Metro routes. Additionally, the table shows the total number of businesses and the average wages of employees at these companies.

The majority of all businesses within both radii employ ten or fewer workers. Notably, however, is that the number of businesses are within 20 percent of one another across all categories between a quarter and half mile. This translates to the potential influence and importance of Metro routes within these centralized employment hubs as the distance and proximity to the routes further than a quarter mile is not causing substantial business and employer growth, or else we would see a larger difference in the two geographies' establishment and employee counts.

Table 7

Number of Businesses and Average Wages by Employee Cohort Count, Quarter and Half Mile Radii from Metro Routes

	Quarter Mile Radius		Half Mile Radius	
Employee Cohort	No. of Businesses	Average Wage	No. of Businesses	Average Wage
0 - 10	10,898	$41,796	12,388	$41,880
11 - 25	2,818	$41,730	3,128	$42,053
26 - 50	1,226	$44,416	1,392	$45,122
51 - 200	1,237	$50,360	1,398	$49,702
201 - 999	236	$55,337	258	$55,110
1,000 or above	34	$89,197	35	$88,233

Source: 2014 Q3 ES-202

Although the quarter mile buffer accounts for the majority of all of the establishments and employees within the half mile buffer, there is not a large wage discrepancy between the two buffer areas. In fact,

the average wages of half mile buffer businesses with fewer than 50 employees are higher than that of the businesses within the quarter mile buffer. Within the Metro service areas, companies with more than 50 employees on average compensate their employees slightly better when the companies are located within a quarter mile opposed to a half mile. However, the difference is marginal throughout the 51-200, 201-999, and 1,000 or more categories, with the largest discrepancy being less than two percent.

In addition to access to Metro in terms of distance from a route, the Economics Center looked at the timing of important commuter routes such as the express routes. For example, 16 of the bottom 20 Metro routes, in terms of daily riders, are Express routes. Further, all of the express routes combined have a total of less than any of the top four Metro routes. This means that there are four routes that individually carry more daily riders than the entire Express system. Based on the peak ridership and schedule information, it is likely that the Express routes have a limited ridership base due to limited schedules. Further, only four out of nineteen Express routes continue downtown pickup service until or after 6:00pm

Figure 4

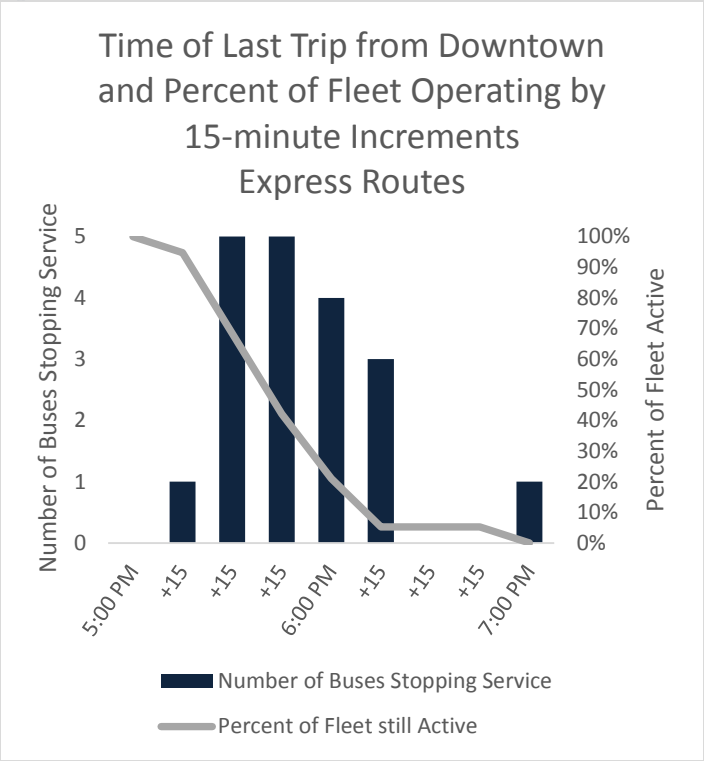
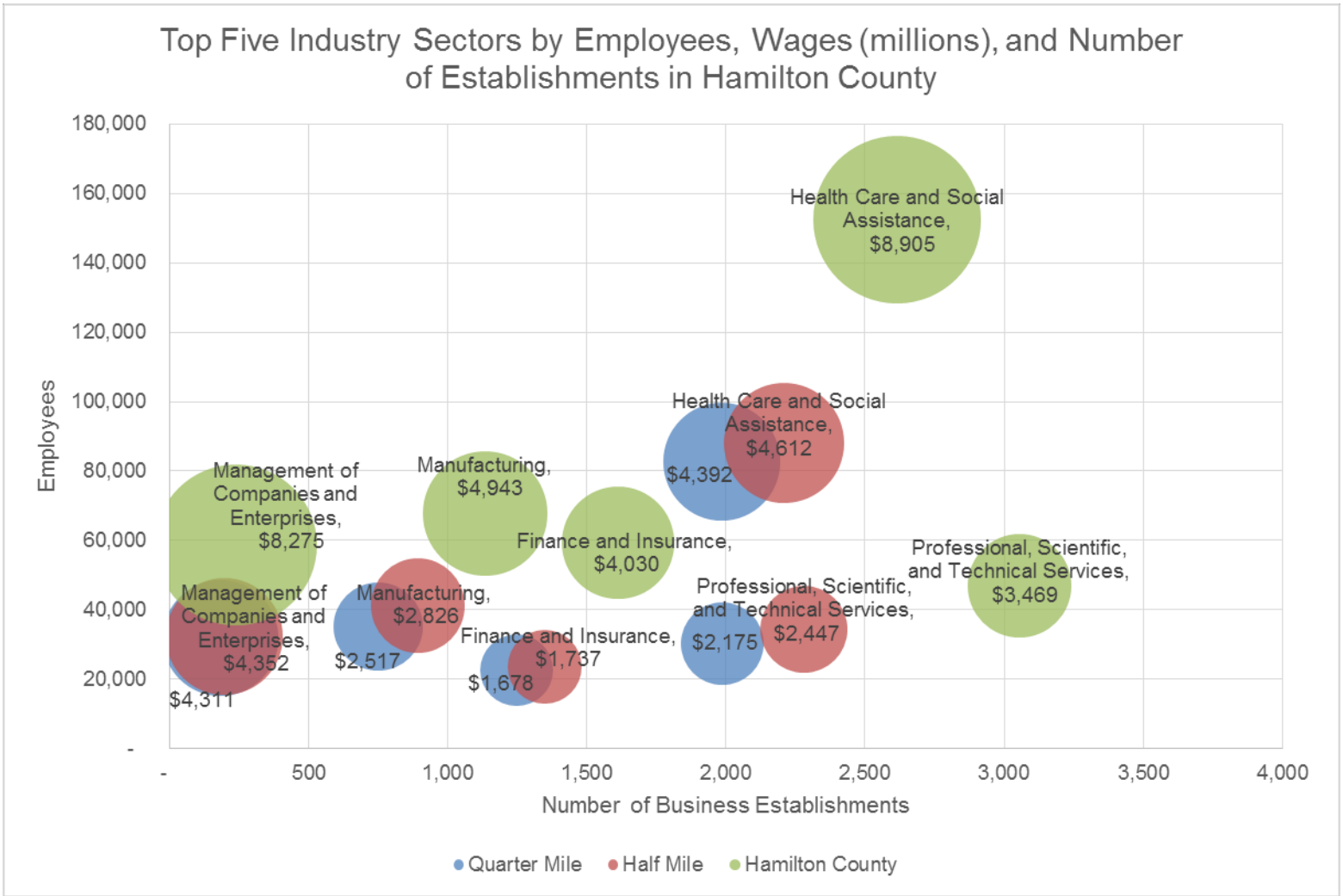


Figure 4 represents the relationship between distance from a Metro route, employment, the number of business establishments, and the total wages paid to employees across five industries. The data are plotted on an X-Y scatter plot with the number of employees as the Y axis, number of business establishments as the X axis, and the total wages paid reflected in the size of the bubble.

The difference in jobs, establishments, and wages between the half-mile buffer and the entire county for the top five NAICS sectors is substantial; however, a half-mile buffer area still makes up approximately 65 percent of all businesses, and 50 percent of wages and employees across the five sectors. Two industries that have the most difference in employment based on a half-mile to the county are Health Care and Manufacturing. There are over 50,000 jobs in Health Care that do not have access to Metro services, which also means that consumers of Health Care cannot use Metro to get to hospitals, clinics, or doctors' offices. Manufacturing has a gap of approximately 25,000 workers that cannot use Metro or would have to commute over a half mile from a route to get to work.

Figure 5



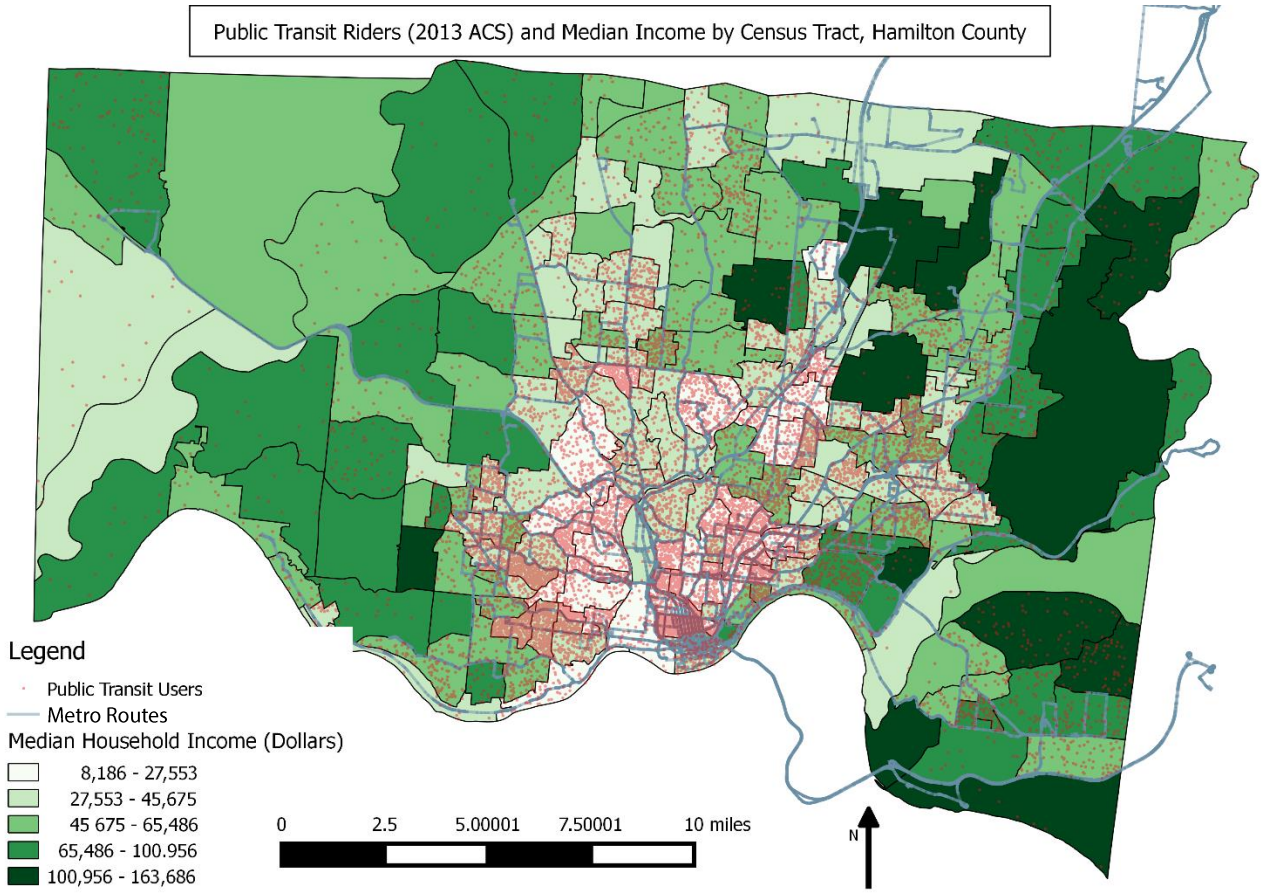
Additionally, there is substantial overlap between the top five NAICS Sectors in Hamilton County and the top five fastest growing sectors in the fastest growing zip codes. Although Health Care, Professional Technical Services, and Manufacturing are all growing considerably in areas serviced by Metro bus routes featured above (Routes 43, 17, 19, 51, 4, and 61), there is still a sizable gap between the number of employees within a half-mile radius and the total number of employees in Hamilton County. This gap is visible especially in Health Care, where the employee counts and wages are much lower and smaller for Metro's service area than the county. Interestingly, there is a large discrepancy between the total numbers of business establishments for Professional Services between Hamilton County and the two Metro radii, whereas the wage gap and employee counts are less drastic.

Lastly, despite connecting jobs in the highest growth sectors and geographies, only 15,500 commuters use Metro on average every day. This commuter base represents fewer individuals using Metro to commute than there are business establishments within a quarter mile of a bus route. This means that fewer than one persons per establishment within a quarter mile potentially use Metro as means of transportation to or from work. Further, with a potential 421,000 jobs within a quarter mile of Metro routes, only 3.7% of total potential commuters are utilizing the bus system.

ANALYSIS OF METRO'S ECONOMIC BENEFITS: PERSONAL IMPACTS

Metro's access to employment hubs is vitally important for the long-term sustainability and benefit of the bus system within the Hamilton County area. However, the impacts on quality-of-life are also significant. Individuals require access to amenities, health care, and other basic needs regardless of income or ability to drive. Metro provides individuals the ability to commute to shopping centers, hospitals and doctors' offices, and entertainment options.

Figure 6



An important factor regarding Metro's service area and consumption shed is the relationship between the number of Metro users and the median household incomes of the areas served. Figure 5 shows the number of riders in a census tract overlaid with the median household income. Each red dot represents a single worker that reported the use of public transit, excluding taxicabs, to commute to work within a census tract. The dots are randomly placed within whichever census tract the worker lives. Therefore, the map illustrates the density of workers that commute via bus within an area, the median income of that area, and the bus routes that go through the area.[7]

[7] Areas such as Downtown may appear to be shaded pink, but this is due to the transparent dot density being high enough for near uniform coverage.

While the map shows the centralized use and dependence of Metro services within the Downtown area, median income and both the rate and the number of reported workers using the bus as a means of commuting to work only have a weak negative correlation (-0.40 and -0.42, respectively). This means that while there is some relationship between the number of individuals commuting with Metro and median income, the variables are not substantially negatively correlated.

An example of a potential lapse in Metro's service offerings is the number of radial or crosstown routes. While there are three routes that are east-to-west or vice versa, there may be a need for an expansion of additional paratransit options. For example, based on midday service offerings, utilizing Metro from Blue Ash (Kenwood and Cooper Road) to the Sharonville Convention Center would take anywhere from two hours and twenty minutes to approximately three hours depending on connections and transfers. This finding provides some evidence that Metro may be lacking radial or crosstown routes.

In addition to commuting to work using the Metro, individuals need access to amenities, healthcare, and basic services. The Economics Center examined the availability of these factors within the City of Cincinnati as well as Hamilton County (excluding the City of Cincinnati). Below is a table that illustrates the services offerings within these two geographies for select services.

Table 8

Number Businesses, Employees, and Average Wages within a Half Mile of a Metro Route Select Services by Location

Sector	Cincinnati			Hamilton County, less Cincinnati		
	Number of Establishments	Employees	Average Wage	Number of Establishments	Employees	Average Wage
Grocery Stores	146	2,721	$22,940	79	3,877	$24,051
Postal Service	8	1,611	$67,237	15	1,336	$64,858
Offices of Physicians	248	4,565	$114,940	306	4,631	$99,787
Museums, Historical Sites, and Similar Institutions	15	1,267	N/A	5	1,004	N/A

Source: 2014 Q3 ES-202

The availability of groceries and postal services is not consistent between Cincinnati and the remainder of Hamilton County. Whereas there are more grocery establishments within the City than Hamilton County, there are fewer postal services. Interestingly, the number of employees per store within the city is much lower than outside the city. This can likely be attributed to smaller corner or convenience stores that qualify as grocery stores within the city. There are nearly two times as many postal services within the remainder of Hamilton County than in the city within the half mile Metro service buffer.

The number of Offices of Physicians is similar between the two areas. Wages within the City are considerably higher than wages in the remainder of Hamilton County. This may be due to less specialized and more entry level services offered within the remainder of Hamilton County (e.g., medical imaging, chiropractors, or miscellaneous health practitioners).

The Economics Center compared the number of cultural amenities such as Museums and Historical Sites within a half mile of Metro's service area. While Cincinnati has three times the number of establishments than Hamilton County, the number of employees is similar. This is due to the large number of individuals that Hamilton County employs for the Parks system. Wages were suppressed

CONGESTION MITIGATION

Traffic congestion costs imposed on a community are among the most burdensome costs attributed to transportation. In this study, the Economics Center assessed the degree to which traffic congestion increases costs associated with travel time, vehicle emissions, safety, and vehicle operation. In conducting this assessment, the Economics Center relied primarily on local, state, and national figures, as well as those outlined in the 2014 TIGER Benefit-Cost Analysis Resource Guide, to determine the value of specific costs and parameters. Furthermore, the Economics Center calculated current congestion costs in the Cincinnati area using formulas provided in the article, "Method Research on Measuring the External Costs of Urban Traffic Congestion" from the *Journal of Transportation Systems Engineering and Information Technology*. The Economics Center also relied on the "OKI 2040 Regional Transportation Plan" to determine how much time is spent in congested traffic. According to this report, drivers spend 47% of their commute in congested traffic. The Economics Center applied this percentage to the each of the four cost categories that make up total congestion costs. Finally, the Economics Center determined how daily commuter traffic and cruising for parking each contribute to congestion.

Additional information regarding the calculations of each congesting pricing element can be found in the Appendix.

Travel Time

Congestion increases the amount of time spent traveling to a destination, particularly during peak traffic hours. In order to estimate the costs imposed on the Cincinnati area from congestion-related traffic delays, the Economics Center accounted for several variables which were quantified using local, state, and national data. The most important variables to consider are the average travel speed under congested conditions and the average travel speed under normal conditions, which were 28.8 mph and 24.3 mph, respectively. These travel speeds were derived by dividing the average number of miles traveled during a single commute by the average time spent during a single commute. These figures were collected from Fehr & Peers data analysis and OKI's 2040 Regional Transportation Plan, respectively. The difference in these speeds can be used to determine the extra amount of time spent in one commute under congested traffic conditions. This parameter is then applied to the median hourly salary and the time spent for vehicle miles traveled in congestion to determine the total cost of time delays from congestion to be approximately $275,665,800 per year.

A potential contributor to the additional travel time and congestion for Downtown-bound traffic may result from the City of Cincinnati Zoning Code. New Commercial Use office buildings are required to construct one parking spot per 400 gross square feet. Based on a number of new construction projects in Downtown Cincinnati, this means that an office building requires approximately one parking spot per 1.3 employees. This requirement may be enabling and contributing to additional congestion in the Central Business District, a reduced-reliance on public transportation, and fewer individuals using Metro to commute to work. If the city, for example, reduced the required parking amounts, there may be a movement in demand for Metro services. While this is one result, additional private parking options may arise as well as a potentially regressive tax burden on individuals that may not be able to afford nearby private or public parking options.

Vehicle Emissions

Increases in travel time result in greater emissions per vehicle in congested traffic. Each substance emitted from operating vehicles imposes economic costs on the environment. The costs for each metric ton of emitted substance are outlined in the 2014 TIGER Benefit-Cost Analysis Resource Guide and can be found in Sub-Appendix: Additional Emissions Data. Additionally, each substance discussed has a unique cost per ton, with additional analysis required to calculate carbon versus non-carbon substances. This is done to be able to look at the social cost of carbon (a federal policy measure for quantifying climate impact).

Examples of non-carbon substances are volatile organic compounds, nitrogen oxides, particulate matter, and sulfur dioxide. Using these figures, the Economics Center estimated that non-carbon emissions result in approximately $135,923,600 in costs per year.

The cost of carbon dioxide emissions must also be taken into account to capture a more complete picture of the vehicle emission impacts. The 2014 TIGER Benefit-Cost Analysis Resource Guide provides figures to illustrate the Social Cost of Carbon as outlined in Sub-Appendix: Additional Emissions Data. By applying these figures, the Economics Center estimated that carbon emissions from vehicles result in approximately $90,009,400 in costs per year.

The total quantified economic emission costs per year were estimated to be $225,933,000 after combining the costs of carbon and non-carbon emissions. These costs take into account all of the externalities associated with emissions, such as asthma, pollution, smog, and acid rain. Additionally, the Economics Center used the difference between the average speeds of normal and congested traffic conditions to determine the proportion of congestion time to total travel time. Given this figure, as well as a pollution intensity multiplier of 1.05, the Economics Center estimated that $17,495,300 of total annual emission costs are attributed to the extra amount of time spent commuting under congested traffic conditions.

Safety

Each accident involving one or more vehicles results in numerous costs. The total annual cost of vehicle accidents increase as traffic congestion increases since accidents occur more frequently under congested conditions. The 2014 TIGER Benefit-Cost Analysis Resource Guide provides monetary values associated with the costs of different types of accidents, specifically fatal accidents, accidents resulting in injuries, and property damage only (PDO) accidents. The Economics Center relied on this information to calculate the total annual costs of these different types of accidents in the Cincinnati area, presented in Table 9.

Table 9

Annual Accident Costs from Congestion (2015$)	
Accident Type	Cost Value
Annual Accident Death	$525,952,000
Annual Accident Injury	$603,168,300
Annual Accident PDO	$49,575,100
Total	$1,178,695,400

The Economics Center used the figure denoting the total traffic accident costs in a year to calculate total annual traffic accident costs attributed to congestion. Given a multiplier of 1.01 as well as probability of a traffic accident based on the proportion of congestion time to total travel time, the Economics Center determined that $187,796,200 of the total annual traffic accident costs in the Cincinnati area are attributed to congestion.[8]

Operating Costs

Vehicle operating costs can become a complex variable to account for when it is broken down into a series of fixed and variable costs. Because of this, the Economics Center relied solely on fuel cost data since its impact on operating costs is far more direct than are other fixed and variable cost factors. This approach is consistent with the methods outlined in the paper in the *Journal of Transportation Systems Engineering and Information Technology*. As previously indicated, increasingly congested conditions yield higher vehicle emissions, which in turn, result in greater fuel consumption by drivers. In order to determine the fuel consumption costs attributed to congestion, we first determined the total amount of money drivers spend on fuel in a given year. Using data from the U.S. Energy Administration and Fehr & Peers data analysis, the Center determined that amount to be approximately $825,626,700 in the Hamilton County region for a given year. Using data from the different average speeds under normal and congested conditions as well as the amount of annual congestion, the Economics Center determined that approximately $210,540,400 of these costs are attributed to congestion.

Finally, the Economics Center aggregated the costs associated with travel time, vehicle emissions, safety, and vehicle operation to yield a total annual external cost of congestion of approximately $591,497,700—see Table 10.

Table 10

Costs Attributed to Traffic Congestion (2015$)	
Cost Category	Cost Value
Annual Extra Time Costs	$275,665,800
Annual Environmental Pollution Costs	$17,495,300
Annual Traffic Accident Costs	$87,796,200
Annual Fuel Consumption Costs	$210,540,400
Total	$591,497,700

[8] Additional figures and tables concerning the safety calculation methodology can be found in Appendix: Safety.

Summary of Congestion Costs and Associated Metro Impact

A study conducted by Arnott, et al. determined that 30% of all traffic congestion is attributed to cruising for parking. The Economics Center applied this percentage to the total cost of traffic congestion contained in Table 10 to derive the costs attributed to parking-related congestion and commuter traffic congestion. Cruising for parking accounts for approximately $177,449,300 of total traffic congestion costs, while commuting accounts for approximately $414,048,400 of total traffic congestion costs.

Lastly, the Economics Center calculated the estimated impact of Metro reducing the number of cars on the road. The impact figure is not the net impact, instead it represents the amount of cost that an equivalent number of cars and passengers would have had on Hamilton County.

Table 11

Impact of Metro's Reduction in Congestion and Cars on the Road	
Total Annual Costs of Congestion	$591,497,695
Cost per million vehicle miles	$ 120,542
VMT equivalent of Metro's passengers*	53,606,538
Total Impact of Cars off of the Road	$ 6,461,819

Source: Passengers per Vehicle, Transportation Energy Data Book: Edition 30, DOE

Metro contributes to a potential impact of almost $6.5 million dollars in social cost to Hamilton County by reducing the annual vehicle miles traveled by about 50 million. While this represents only approximately 1.1% of the total vehicle miles traveled, the additional cost in terms of parking and reduction in surface lots is substantial.

CONCLUDING REMARKS

Metro serves as an economic development driver in the region by connecting thousands of people every day, across all cultural and socioeconomic factors, to places of work, community amenities such as educational and medical facilities, grocery stores, entertainment and retail options, and their homes. More than 15,500 people use Metro every day to get to work and the bus system connects people to a wide array of cultural amenities such as museums, parks, and libraries.

The Metro system provides transit-dependent riders with access to employment and employment opportunities throughout Cincinnati and Hamilton County. Currently, Metro connects the fastest growing industries in the region to the top five fastest growing employment centers by zip code. Moreover, the Metro is contributing to an agglomeration economy by enabling individuals to travel from one hub of employment within and industry to another without barriers of entry such as car ownership or ability to drive. This is particularly important considering two of the fastest growing zip codes in terms of employment are near the University of Cincinnati and the medical facilities, both areas where a substantial population may be students or individuals without vehicles.

Metro also offers critical access to community amenities such as museums, libraries, and other basic needs regardless of income or ability to drive. The availability of amenities along the Metro corridor strengthens the inclusiveness of Cincinnati and Hamilton County as there is less disparity in access between individuals with personal transit or public transportation.

Further, Metro benefits individuals in Hamilton County and the surrounding area regardless of whether or not they use the service. The cost of the equivalent vehicle miles traveled by individuals whom are on the Metro equate to approximately $6.5 million. This cost is primarily savings for the individuals through the means of a reduction in the amount of negative externalities (e.g. congestion, pollution, and safety) that are not wholly captured by individuals driving.

Lastly, based on the Economics Center research, Metro could benefit from further research detailing capacity issues relative to peak Express route timing, the impact of additional radial, crosstown, and paratransit vehicles, and a demand analysis of Hamilton County individuals' perceptions, user experiences, and information concerning opting out of Metro transportation services. This information would serve Metro in knowing how they are impacting local commuter patterns, ways to increase ridership based on user and non-user demand surveys, and whether or not the current Metro network meets the needs of present-day employment patterns within the County.

Appendix: Congestion Mitigation

Summary

Total Annual External Costs of Congestion	
= (C_{time} +C_{envi}+C_{acci}+C_{fuel})*.47	**$591,497,694.70**
cruising for parking congestion (30%):	$177,449,308.41
commuting traffic congestion (70%):	$414,048,386.29

CPI-U Table

Calendar Year	Annual CPI-U
2015*	241.4
2014	236.7
2013	233.0
2012	229.6
2011	224.9
2010	218.1
2009	214.6
2008	215.3
2007	207.3
2006	201.6
2005	195.3
2004	188.9
2003	184.0
2002	179.9
2001	177.1
2000	172.2

Travel Time

annual extra time costs = C_{time}	**$586,522,898.62**
value of time (Ia/Ta) = u	18.5074
extra travel time = T_{extra}	0.0575
annual VMT (2013)	4,907,838,000
2013 Hamilton County annual median income (2015$) = I_a	$30,761.95
2014 average annual working time (hours) = T_a	1,662.1410
average travel distance (mi/trip) = L	8.91
average travel speed under congested conditions (mph; PM Peak)= V_c	24.3000
average travel speed under normal conditions = V_0	28.8226
$T_{extra} = L * [(1/V_c) - (1/V_0)]$	0.0575
$C_{time} = T_{extra} * u * P_c = L * [(1/V_c) - (1/V_0)] * (I_a/T_a) * P_c$	
C_{time} Reformatted:	
$C_{time} = (VMT*((1/V_c)-(1/V_0)))*u$	$586,522,898.62

Emissions

environmental pollution costs from congestion = C_{envi}	**$37,224,079.25**
environmental pollution costs from transport (annual) = C_{te}	$225,932,997.99
travel time w/congestion in minutes (PM Peak)	22
travel time w/o congestion in minutes (PM Peak)	18.5479
percentage of commute time spent in congested traffic (PM Peak)	47%
proportion of congestion time to total travel time = P_t	0.1569
pollution intensity = ξ_e	1.05
$P_t = (T_{extra}/T_{total}) = [(L/V_c - L/V_0)] / L/V_c = 1 - (V_c/V_0)$	0.1569
$C_{envi} = C_{te} * P_t * \xi_e = C_{te} * \xi_e * [1 - (V_c/V_0)]$	$37,224,079.25

Additional Emissions Data

avg distance/trip (miles)	8.91
annual VMT (2013)	4,907,838,000

Cost of Carbon

vehicle miles/gallon	21.6
pounds of CO2 / gallon	19.6
pounds of CO2 / mile	0.9074
pounds / metric ton	2205
CPI change	1.0364

CO2 Costs

calendar year	SCC list and calc	SCC value (2013$)	SCC value (2015$)	**Total CO2 Costs**
2013	$43.00	$43.00	$44.57	**$90,009,378.17**

Emissions Costs

car emissions	**2013$/ton**	**2015$/ton**	**lb/12,000 mi***	**Emissions Cost**
VOC	$1,813.00	$1,879.03	27.33	$10,501,510.56
NOX	$7,147.00	$7,407.29	18.32	$27,750,038.44
SOX	$42,240.00	$43,778.34	9.13	$81,735,180.26
PM	$326,935.00	$338,841.64	0.23	$15,936,890.55
Total Emissions Costs				**$135,923,619.82**
Total CO2 Costs				**$90,009,378.17**
Total Costs				**$225,932,997.99**

Safety

traffic accident costs = C_{acci}	**$186,800,474.04**
total traffic accident costs = C_{ta}	$1,178,695,431.86
probability of accident by congestion = P_a	0.1585
proportion of P_a to P_t = ξ_a	1.01
$P_a = \xi_a * P_t$	0.1585
$C_{acci} = C_{ta} * P_a = C_{ta} * \xi_a * [1 - (V_c/V_0)]$	$186,800,474.04

Additional Safety Data	
Value of Statistical Life (VSL):	
monetized value/fatality (2013$)	$9,400,000.00
monetized value/fatality (2015$)	$9,742,338.48
national accident deaths/100 million VMT (2013)	1.1
Annual VMT (2013)	4,907,838,000
national accident deaths/base year VMT (2013)	53.9862
costs of accident deaths/VMT (2015$)	**$525,952,008.78**

Cost of Injuries:

AIS level	severity	fraction of VSL	unit value (2013$)	unit value (2015$)
1	Minor	0.003	$28,200.00	$29,227.02
2	Moderate	0.047	$441,800.00	$457,889.91
3	Serious	0.105	$987,000.00	$1,022,945.54
4	Severe	0.266	$2,500,400.00	$2,591,462.03
5	Critical	0.593	$5,574,200.00	$5,777,206.72
6	Fatal	1	$9,400,000.00	$9,742,338.48

KABCO/Unknown – AIS data conversion matrix

unknown	percentage
0.62728	0.7995
0.104	0.1325
0.03858	0.0492
0.00442	0.0056
0.01034	0.0132
0.78462	1

	Number	Per 100 M VMT	
Accidents	5,687,000	191.5	
- w/ injuries	1,621,000	54.6	
			injury value
national injury accidents/100M VMT (2013)		54.6	$12,289,898.38
annual VMT (2013)		4,907,838,000	
injury accidents/base year VMT (2013)		2,679.67	**$603,168,302.65**

Property Damage Only (PDO) Costs:	
monetized value/vehicle (2013$)	$3,927.00
monetized value/vehicle (2015$)	$4,070.02
national PDO accidents/100 million VMT (2013)	136.9
VMT (2013)	4,907,838,000
PDO accidents/base year VMT (2013)	6,718.83
vehicles/crash (2012)	1.8129
total PDO costs reduced (2015)	**$49,575,120.42**

Operating Cost Savings (Fuel Consumption Costs)	
fuel consumption by congestion = C_{fuel}	**$447,958,281.50**
fuel consumption by total transport = C_{tf}	825,626,720.57
$C_{fuel}/(C_{tf}-C_{fuel}) = V_0/V_c$	1.1861
$C_{fuel} = C_{tf} * [V_0/(V_0+V_c)]$	447,958,281.50
Fuel Cost Data	
average 2013 Ohio cost of fuel (all grades) per gallon (2013$)	$3.5060
average 2013 Ohio cost of fuel (all grades) per gallon (2015$)	$3.6337
2013 VMT	4,907,838,000
vehicle miles/gallon	21.6
gallons of fuel consumed (2013)	227,214,722.2222
cost of fuel consumption (2015$)	**$825,626,720.57**

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About the Economics Center

The Research and Consulting division of the Economics Center provides the knowledge building blocks that help clients make better policy and economic development decisions. Our dynamic approach and critical data analysis empowers leaders to respond to changing economic conditions, strengthen local economies, and improve the quality of life for their communities.

Executive Director: Julie Heath, PhD
Research Associate: Christopher Nicak
Graduate Assistant: Mary Destefano

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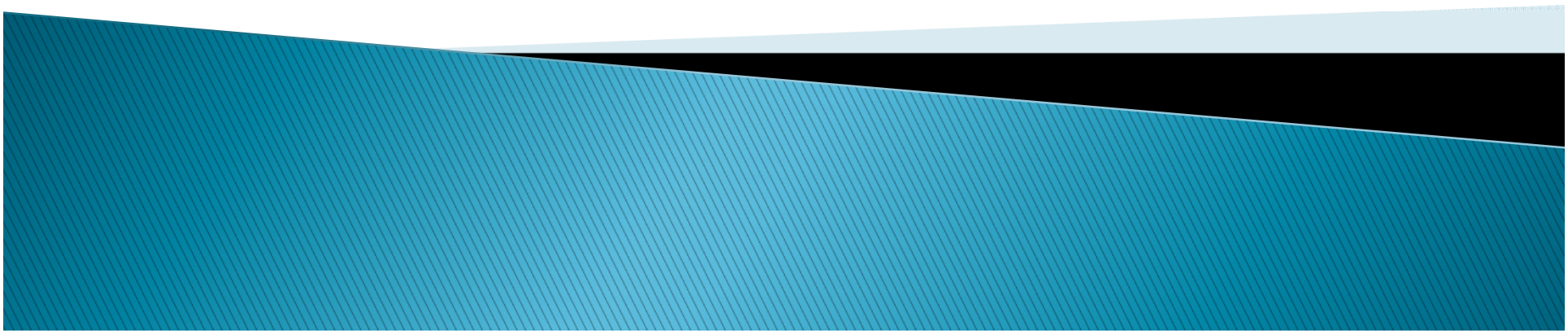
YP Listening Session



Key Themes

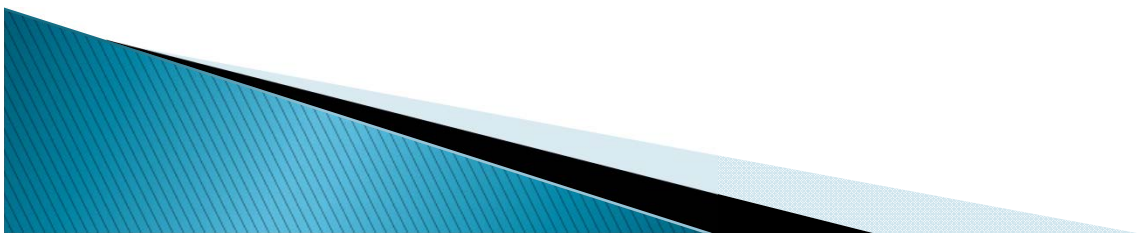
- Unsure of “where to start”
- Metro brand needs to be updated
- Streetcar v. Buses
- Tech and social media advances are needed

Observations

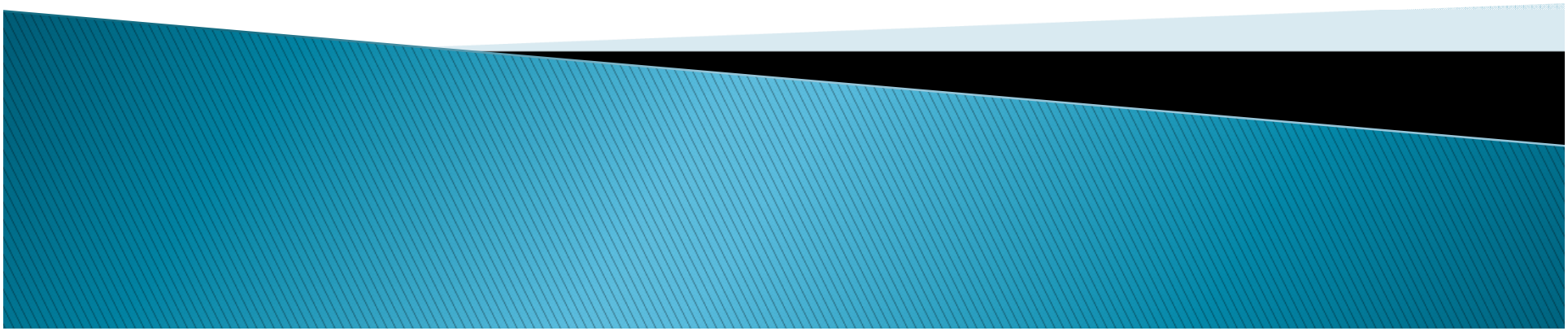
- Frequent riders are “all in.”
- Lack of clarity around Metro’s vision
- Support is dependent on use
- Stigma doesn’t exist

Recommendations

- Develop key messages and begin testing
- Be explicit about goals and potential initiatives
- Neutral facilitation v. Q&A model
- Create a YP/Millennial Steering Committee



Questions?



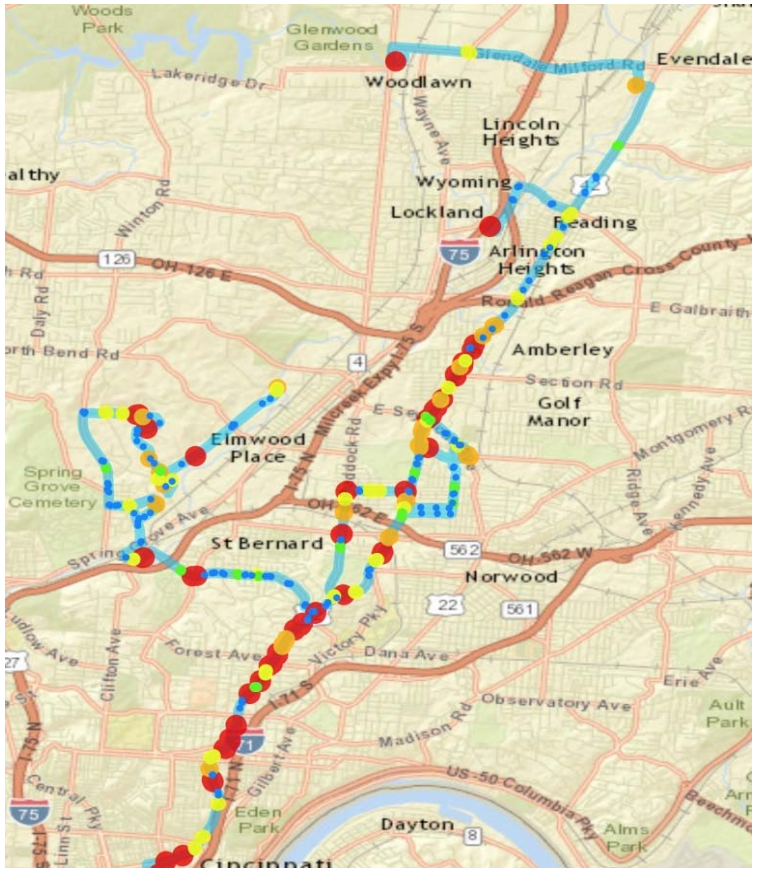
SORTA SERVICE EVALUATION, DEVELOPMENT, AND MANAGEMENT STUDY

AECOM

Draft System Alternatives

Service Analysis Summary

- Presented service guidelines
- Analyzed service based on guidelines
- Ridership analysis



Major Findings/Gap Analysis

- Ridership has been declining
  - Service cuts have created a ridership loss spiral
  - Changing demographics and job locations
  - Fuel prices
  - Impacts on ridership and productivity of routes
- Many route variations make system difficult for passengers to understand
  - Impacts service regularity and legibility
- Overall service coverage is good
  - Key locations in Hamilton County are served
  - UC Study has identified number of jobs beyond the current route network

Short Term Proposals – Low Cost/Cost Neutral

- Recreate schedules
  - Improve on-time performance
  - Even out headways
- Restructure services
  - Consolidate similar services
  - Minimize service variations/branches
  - Improve connections
  - Improve service efficiency
- Low hanging fruit
  - Low cost service extensions
  - Increase frequency

Fare Structure

- Replace zone fare system with express/local fare system
  - Premium fares for express service to reflect faster premium service type
  - Easier to understand
    - Easier for operator to enforce as they will not have to collect two different types of fares within a single trip
    - Easier for passengers to understand
- Add additional fare types
  - Family pass
  - Other pass types
  - Mobile ticketing
- Transfer considerations
  - Local to express transfers
  - Transfers with other providers
  - Possible elimination of transfers
- Certain fare policy changes will require City Council approval and Title VI analysis

Buses – Support a Fleet Mix Properly Tailored for Each Service

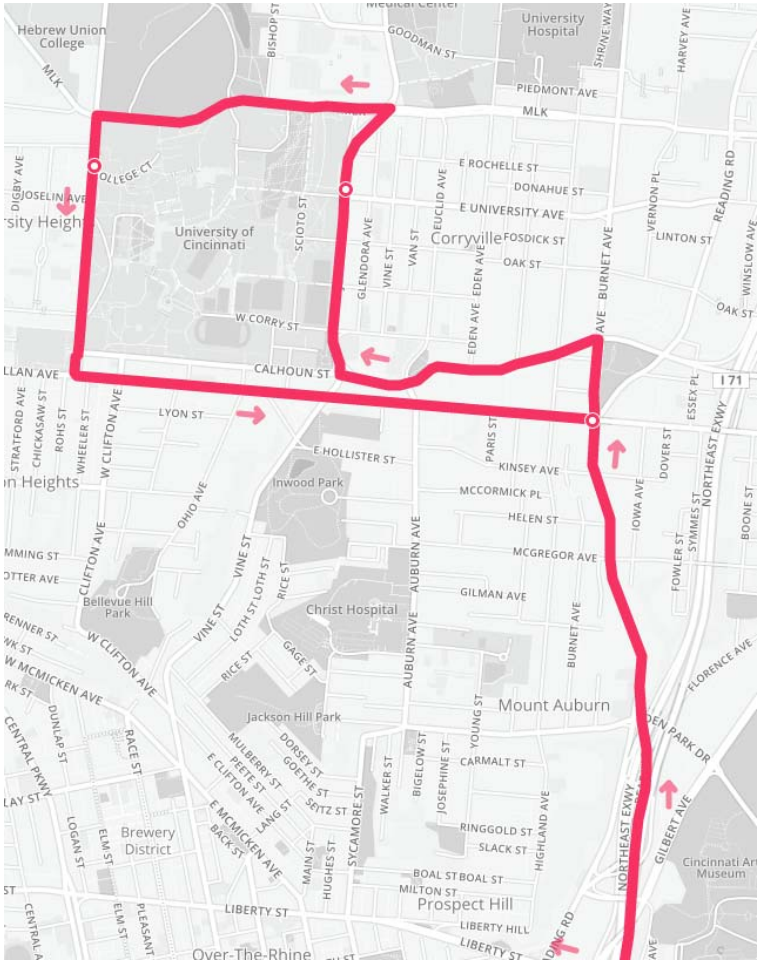
- Standard 40-foot bus for local service
- Shorter 30-foot bus for
  - Local neighborhood services where turning radius is an issue
  - Local routes with lower ridership
- Express buses need additional amenities (e.g. high back seats)
- "Cutaway" vans for possible MetroCirculator services or very low ridership routes
- Subfleets do impact the ability for route interlines

Local Services

- Minimize the number of route variations/branches
- Base plan will be cost neutral but will identify an unconstrained service plan
- Address the following priorities
  - Improve on-time performance
  - Identify proper vehicle and frequency to address loading
  - Improve service frequency to meet service guidelines
  - Increase service span to meet service guidelines
  - Expand service area

Express Services

- Stopping Pattern should be 3 stops per mile
- Service to Uptown
  - Uptown is a significant employment area
  - Only routes that do not pass Uptown before going to Downtown so routes do not backtrack
  - Passengers coming from the north may have better access to Uptown via local routes
  - AM serve Uptown after serving Downtown, PM serve Uptown before Downtown



Service Plan Focuses On

- Connections to jobs
  - Strengthen connections to current job centers
  - Extend services to unserved or underserved job centers
- Extend service
  - New service types to better meet demand for service
  - Service to new neighborhoods and job locations
- Improve competitiveness of the region
  - Improvements to service frequency
  - Improvements to service productivity

Long Term Recommendations

City Areas

- Additional Metro*Plus services
- Service frequency improvements/high frequency network
- Crosstown/Crosstown Express services

County Areas

- New transit centers
- MetroCirculator services for last mile connections
- Additional Park and Ride/Express services
- Reverse commute services