

# Fare-Free Transit Analysis



Analyzing the impacts to the Central  
Ohio Transit Authority of  
implementing fare-free transit.

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# Introduction



# Fare-Free Transit

Lower cost public transit alternatives provide far-reaching benefits to commuters, land use planners, the environment, businesses and lower-income neighborhoods, among others.

Free public transportation, typically referred to as “fare-free” public transit, refers to public transportation funded in full by means other than farebox revenues. The Central Ohio Transit Authority (COTA) realized \$161.5 million in revenue in calendar year 2019, of which \$18.2 million came from passenger fares<sup>1</sup>.

Approximately 11.2% of COTA’s annual revenue in calendar year 2019 came from passenger fares. Replacing this farebox revenue would require a revenue-replacement source of least \$18.2 million. In calendar year 2019, COTA’s total ridership was 19.1 million, representing approximately 95 cents per rider in farebox revenue. **Therefore, in order to achieve a free fare system for every rider, the per rider revenue replacement would only total 95 cents per rider.**

Fare-free transit is a concept that has been debated, studied, piloted and demonstrated in a number of markets, but has yet to be implemented full-scale by a public transit agency with a large geographic service area. In circumstances where fare-free transit has been implemented, it has resulted in increased ridership in nearly all circumstances. While fare-free transit provides cost-savings to riders, it also provides an onboarding convenience to the rider. Fare-free transit also eases the administrative burden on the transit agency through the elimination of its function as pass holders and pass distributors on behalf of its employees, and avoiding the costly implementation and operation of farebox collection systems.

This report seeks to illustrate the impacts of a fare-free transit implementation to COTA, by using historical demonstrations and data to both project impacts and contemplate revenue replacement options to allow for implementation of fare-free transit for the entire COTA service area.

	2016	2017	2018	2019
Total Revenue (before Grants)	\$154,354,142	\$159,524,456	\$157,601,033	\$161,450,981
Farebox Revenue	\$19,525,000	\$19,688,255	\$19,422,023	\$18,209,917
Ridership	18,549,436	18,401,546	18,913,789	19,146,510
Farebox Revenue per Rider	\$1.05	\$1.07	\$ 1.03	<b>\$0.95</b>

# Fare-Free Transit Efforts



# Overview of Domestic Fare-Free Efforts

The challenge in analyzing the impact of fare-free transit for the entirety of a transit system is the mere fact that it has not been implemented system-wide by public transit agencies serving large, densely populated areas, but rather has only been implemented in small urban areas with modest ridership, large rural areas with low ridership, resort communities, and university-dominated communities. Until recently, fare-free transit efforts were conducted purely on a demonstration basis, scaled to certain populations and locations, or used as a pilot program for a short period of time. In December 2019, Kansas City, Missouri became the first major city in the United States to pass a resolution to make all of its buses free to ride, however, no substantive progress has been announced on the implementation the free bus program, likely due to the COVID-19 pandemic.

The City of Olympia, Washington, undertook a five-year “Zero-Fare Demonstration Project” on January 1, 2020, after a ballot measure was passed to approve an additional sales tax for public transportation purposes.<sup>2</sup> Fare-free transit was the most cost-effective option for the City of Olympia for several reasons, including: 1) cash boxes that collected fares on buses were no longer being produced, forcing procurement specialists to use eBay to bid on old cash boxes from surplus and decommissioned buses from other cities; 2) the cost of plastic fare cards in use were rising due to imposed trade tariffs; and 3) there was a growing trend and public support for high-tech cashless systems using a mobile app that were too expensive to implement. After one month into the program, the City of Olympia witnessed a 20% increase in ridership (year over year), an equivalent of 60,000 more riders<sup>2</sup>.

In the City of Corvallis, Oregon (population of 54,462), the Corvallis Transit System (CTS) implemented fare-free transit in February 2011, a change supported by a new Transit Operations Fee (TOF). Ridership increased by 37.9% in the first year. CTS operations had been funded by a mix of property tax revenue from the general fund, group pass sales, fare box revenue, along with state and federal grants. Farebox collection represented 11% of the CTS budget. The City of Corvallis’ TOF approach not only replaced the fare revenues, it also replaced general funds, freeing those funds for other uses.<sup>3</sup> The TOF fee is a monthly charge to utility customers to generate revenue to support Corvallis Transit System (CTS) operations. This revenue replaced property tax funds and a portion of transit fares that supported transit operations, allowing riders (after the February 1, 2011 implementation), to get on any CTS bus without paying a fare.<sup>4</sup>

Demonstration efforts in larger cities and counties have been underway for over 50 years. In the late 1970s, demonstration projects in Denver, Colorado, Mercer County, New Jersey and Salt Lake City, Utah, resulted in ridership gain ranges of 36-49% (Denver), 25-30% (Mercer County) and 13% (Salt Lake City). Demonstrations in Denver and Mercer County were conducted during off-peak hours only, while Salt Lake implemented during both peak and non-peak hours , impacting 910,000 residents. In the early 1990s, Austin, Texas implemented a demonstration project that credited fare-free transit to a ridership increase ranging from 30%-75%. In 2006, Asheville, North Carolina, a smaller population service-area reported a 58.5% ridership increase, actually retaining 9% of that increase after the demonstration period ended.<sup>5</sup>

# Ridership Results



Service Area	Year	Population	Ridership Increase
Asheville, NC	2006	70,000	9%
Austin, TX	1990	500,000	30-75%
Chelan-Douglas Counties, WA	2000	100,000	400%
Corvallis, OR	2011	58,885	37.9%
Denver, CO	1979	1,500,000	36-49%
Mercer County, NJ	1979	300,000	25%-30%
Milton, Canada	2007	54,000	63%
Olympia, WA	2020	52,000	*20%
Salt Lake City, UT	1979	910,000	13%
Topeka, KS	1988	120,000	6%

**Sources:** Transit Cooperative Research Program; Ice Miller; InterCity Transit 2020-2025 Transit Development Plan

\*Impacts during the first two months of implementation

# Rationale for Implementation

Fare-free transit demonstrations have been implemented for a number of reasons. In some cases, the decision is driven by a desire to improve operational performance within a public transit agency as the elimination of fareboxes reduces wait times, payment issues, monitoring and collecting fares, and if buses are carrying enough excess capacity, the initiative does not add additional operational or capital costs to the agency. Farebox revenues across the United States are not a significant source of revenue for most public transit agencies, typically representing only 10-20% of total revenues. Additional rationale for consideration of Free-Fare transit revolve around social equity and economic benefits for residents, catering to the demands of today's job market, expediting the economic and community development benefits of increased ridership and the reduction of automobile consumption.

*The Transit Research Cooperative Program and University of South Florida conducted a survey in 2012 of 32 Transit Agencies, resulting in the following top 10 reasons for implementing/considering/demonstrating fare-free transit<sup>5</sup>:*



1. Marketing, Increased Ridership and Convenience
2. Costs Consumer Revenue Collected
3. Reduce Dwell Time
4. Encourage Reductions in Auto Use
5. Reduce Traffic Congestion
6. Social Equity
7. Economic Development
8. Taxes Already Pay for Service
9. Administrative Fare Difficulties
10. Administrative Difficulties with Fare, Reduction in Federal Match and Driver Distraction

# Costs and Cost Savings

The costs of fare collection vary widely among public transit agencies. The Transit Research Cooperative Program Report survey documents that some agencies spend less than 1% of their total farebox revenue collected on fare collection and related costs. The average cost of fare collections for all public transit agencies that responded to the report's survey was 6.2% of total farebox revenue. For bus systems, the average was 3.4%, for smaller systems and 4.0% for larger systems, although it could range from 0.5% to 22%.<sup>5</sup>

From an operating perspective, the equation is less consistent as different public transit agencies house varying levels of excess capacity. In a survey conducted by the Transportation Cooperative Research Program of 24 transit agencies, none of the responding agencies reported that capacity was a critical issue. Even large percentage increases in ridership can be handled with existing capacity if the base number of passengers prior to fare-free transit is relatively small. In Corvallis, Oregon, the CTS reported a 43% increase in ridership after only two months, but had not yet experienced capacity problems.<sup>5</sup>

Below is a synopsis of operational expenses, capital expenditures, fare-related costs and increased services costs from four public transit agencies studying fare-free transit. This illustrates inconsistency system-to-system.

Public Transit Agency	Farebox Operations Cost Savings	Lost Fares	Increased Services	Increased Cap-Ex	Increased Op-Ex	% of Fare Costs
Lane Transit-Eugene Oregon	\$100k-\$500k	\$5,000,000	n/a	n/a	\$5,000,000	n/a
Muni-San Francisco	\$8,400,000	\$112,000,000	\$72,000,000	\$512,000,000	\$184,000,000	7.5%
Tri-Met Portland, Oregon	n/a	\$41,000,000	\$8,000,000	\$5,000,000	\$49,000,000	n/a
Hamilton, Canada	n/a	\$900,000	\$30,000,000	n/a	\$30,900,000	n/a

# Impacts of Fare-Free Transit



# Overview

Fare-free transit has a proven track record of significantly increasing ridership in areas in which it has been demonstrated. Increased ridership takes cars off the road, and provides convenient, low-cost (in this case no cost) transportation alternatives to residents, which can enhance public safety, sustainability, land use development and job creation, among many other benefits. Further, providing fare-free transit creates choice, especially for those residents that are cost burdened. Our analysis of the impacts of fare-free transit include the following impacts:

- ✓ **Land Use.** Takes cars off of the road, which in-turn allows opportunities with real estate dedicated to parking.
- ✓ **Safety & Environmental.** Enhances safety and reduces emissions by driving more riders to shift from automobiles to public transit.
- ✓ **Resident Savings.** Saves households on automotive costs and increases ridership which drives down utility costs, allowing increased buying power and enhanced quality of life.
- ✓ **Young Professional Culture Alignment.** Eases access to public transit, allowing employers to follow talent and capture the emerging labor pool desire for easy access to public transit.
- ✓ **Equitable Job Competition.** Allows more participation in the economy by getting people to job centers.

# Parking

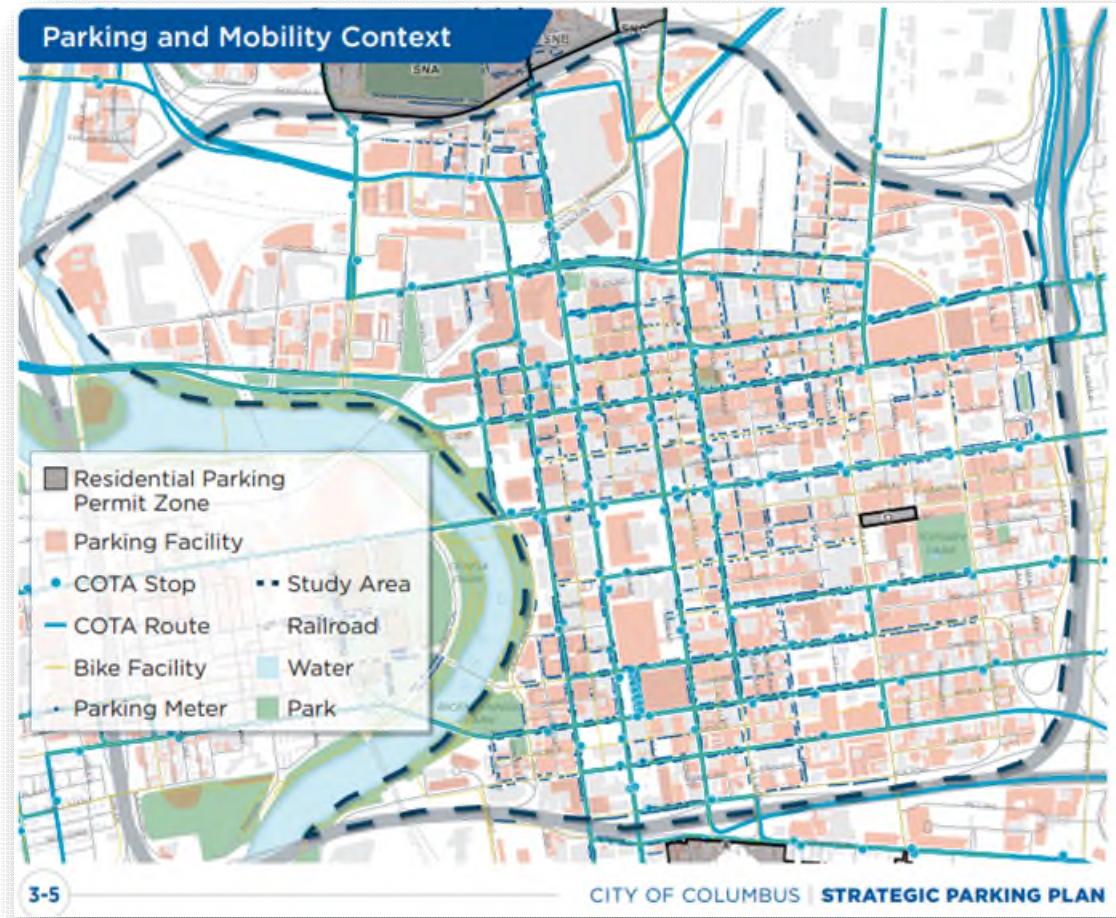
**Fare-free transit takes cars off of the road, which in-turn allows opportunities with real estate dedicated to parking.**

Off-street parking facilities may be redeveloped into higher value land uses and thus support the intensification and clustering trends.

The current property value of 1,270 acre of parcels in Downtown Columbus is **\$3.3 billion**, or **\$1,858,610 per acre**.<sup>6</sup> Nearly half of the acreage is used for parking. Redeveloping just half of the available parking acreage (“half of the half”) to a more valuable use could add another \$500 million in new property value or \$14 million in additional annual property taxes. This does not factor in annual increases in appraised value in Downtown Columbus.

Redevelopment of surface parking can add new retail, residential and office uses by creating new, high-value downtown real estate. While Downtown Columbus serves as a sample, similar benefits can be contemplated in areas such as The Ohio State University Campus, the East Franklinton and South Downtown Neighborhoods.

Further, the reimaging of on-street parking uses may make way for enhanced pedestrian and cycling spaces, and for autonomous vehicle pick-up/drop-off areas.



*The areas shaded in light red represent Downtown Columbus parking facilities.*

# Environmental & Safety

Fare-free transit enhances safety and reduces emissions by driving more riders to shift from automobiles to public transit

Fare-free transit removes cars from the road, enhances safety and reduces emissions by incenting more riders to shift from automobiles to public transit.

Currently, households in Central Ohio average 17.1 metric tons of Greenhouse Gas (GHG) Emissions.<sup>7</sup> Using the methodology from the “insight2050 Corridor Concepts Study,” we were able to calculate increasing the current transit adoption as a regular form of commute by 2x, decreases GHG emissions per household by 41%.

Additionally, households in Central Ohio average 16,800 Vehicle Miles Traveled (VMT) annually.<sup>7</sup> Reduced VMT reduces traffic congestion and decreases automobile, pedestrian and cyclist injuries and fatalities.

Franklin County is one of the higher traffic fatality counties in the United States compared to other large metro counties. As such, reducing the number of drivers can improve safety and wellness.



*Rate of deaths from motor vehicle traffic per 100,000 people in 2018*

County	Rate
Marion County (Indianapolis)	12.5
<b>Franklin County (Columbus)</b>	<b>9.5</b>
Fulton County (Atlanta)	9.3
Travis County (Austin)	8.6
Los Angeles County (LA)	8.4
Denver County (Denver)	7
Wayne County (Detroit)	6.4
Cook County (Illinois)	6.3
Allegheny County (Pittsburgh)	5.2

*Source:* PolicyMap; CDC

# Business Job Creation and Retention

Fare-free transit eases access to public transit, allowing employers to follow talent and capture the emerging labor pool desire for easy access to public transit

Cities offering access to public transit broadens the labor pool and access to the best workers. A large component of this labor pool revolves around a growing generation of millennials and their younger counterparts, Gen-Z. It's predicted that in the next decade, this group will account for 58% of the workforce. Recent research suggests that when looking for a place to settle, the most important criteria for those aged 24 to 44 is easy access to public transit. Young people are vocal advocates for safer streets, extensive bike infrastructure, and efficient, effective public transit. A recent survey by WISPIRG Foundation concluded that "car culture no longer represents the 'American Dream' for young Americans." Instead, this demographic expects a multimodal lifestyle where optionality in travel is based on convenience, predictability, and positive impact on their community.<sup>8</sup>

While Central Ohio possesses industries with employees of all ages and generations, The Ohio State University is one the largest academic institutions in the nation, and a major talent pipeline to the area, with enrollment of approximately 67,957 students.<sup>9</sup> Additionally, The Ohio State University's University District represents a higher public transit usage rate compared to other parts of the City of Columbus. These students have been acclimated to utilizing public transit, and eliminating a farebox will only make this experience easier and more convenient. All of these considerations emphasize the importance of adhering to generational preferences of young professionals in Central Ohio.

## Transit Contributes to the Brain Gain of College Students

Increasing the number of college graduates retained in Columbus by **one additional percentage point** each year for 10 years, **\$1.01 billion** would be generated in annual payroll and **\$25 million in annual local income taxes**. That's like attracting a billion dollar company to this region<sup>10, 11</sup>.

# Affordability & Cost Savings

Fare-free transit saves households on automotive costs and increases ridership, allowing increased buying power and enhanced quality of life

Low income households in Franklin County are severely burdened and transportation costs are a major contributor. Approximately **56,244 households** dedicated **76% or more** of their **income to housing and transportation costs**. The national average is 48.7%.<sup>12, 13</sup>

Increased transit adoption by households can save 40-45% on automotive costs per household. The average household in Central Ohio currently pays \$11,702 in automotive costs.<sup>7</sup>

Households spend approximately \$7 billion in transportation costs annually in Franklin County. A 1% reduction in transportation costs unlocks \$70 million in buying power to Franklin County households.

The table to the right illustrates the cost burden by necessity category to a Franklin County household making less than \$25,000. Given these necessity costs are fixed and not variable by income, low income households needing child care find themselves severely burdened, forced to spend more than they have.

Cost Necessity Category	Franklin County Households less than \$25k
Transportation	46.8%
Housing	30.0%
Healthcare	7.3%
Food	10.3%
Clothing	2.5%
Education	1.73%
Child Care	14.0%
<b>Total</b>	<b>112.6%</b>

Transportation Cost per Household	% Avg Cost.	County Household Spend on Transportation	Franklin County Household Income Brackets	519,468 Households	Residents
<b>Franklin County Transportation Costs as a % of Income</b>	21.0%	\$11,702	<b>\$7,072,513,270</b>	Less than \$10,000	6.20% 32,207 79,551
<b>National Average</b>	15.9%			\$10,000 to \$14,999	3.70% 19,220 47,474
				\$15,000 to \$24,999	8.60% 44,674 15110,345

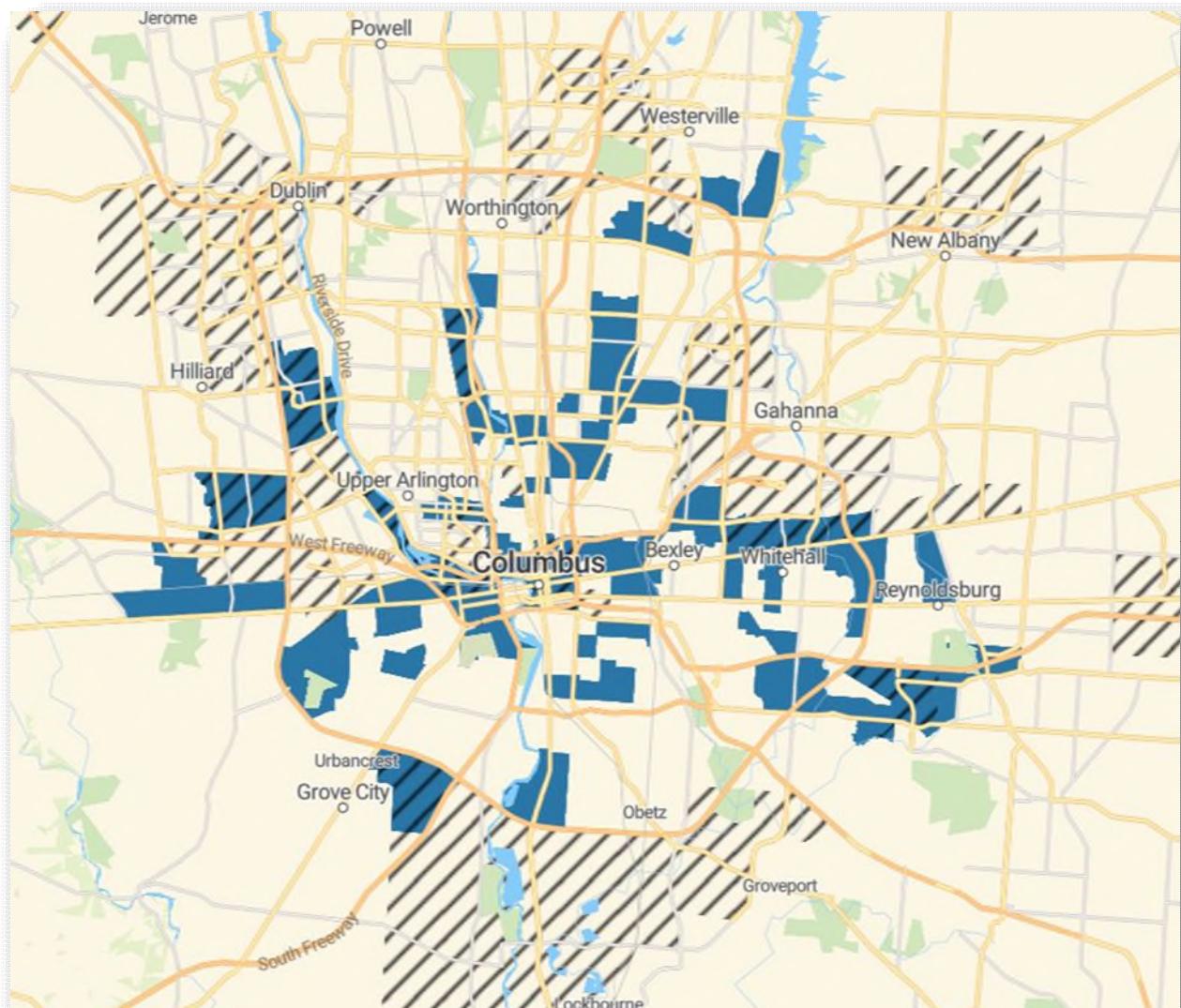
# Access

**Fare-free transit allows more participation in the economy by getting people to job centers**

Franklin County has more than 10 neighborhoods with at least 200 housing units that do not possess a vehicle.<sup>14</sup>

These neighborhoods are physically distant from job centers, creating challenges in ensuring employer reliability in getting to work, or getting to work on time. Indicating on a job application that you do not own a vehicle is a poison pill in the job market.

Reliable transportation enhances sustained employment and sustained incomes, preventing poverty, foreclosures and evictions.



*The blue shades represent neighborhoods with at least 200 housing units without a vehicle. The diagonal lines represent Franklin County job centers.*

# Ridership



# Ridership

To estimate the ridership impact of changes in levels of public transit fares, including deep discount fare policies, many transit operators utilize the “Simpson–Curtin Rule” as the elasticity standard to measure the relationship between fares and ridership. This rule estimates that a 3% fare increase will result in a 1% drop in ridership (denoted as -0.33). Conversely, a 100% decrease in fares (fare-free transit) would be expected to result in a ridership increase of 33%.

In this section, ridership projections are divided into two overarching categories, those with fare-free transit implementation and without fare-free transit implementation. In all instances where fare-free transit implementation is utilized, the Simpson-Curtin Rule is used to illustrate ridership gains associated with the elimination of fare.

Additional metrics are contemplated within the two overarching categories. The first, illustrates ridership gains based on population estimates prepared by the Mid-Ohio Regional Planning Commission (MORPC). The second, factors in the construction of a Bus Rapid Transit (BRT) line along one of five transit corridors studied by MORPC (MORPC Corridors), while the third represents, construction of BRT lines in all five MORPC Corridors. Collectively, ten different scenarios are contemplated as follows:

## Fares Remain

***Current Trajectory***

***Population Growth***

***1 BRT Corridor***

***5 BRT Corridors***

***Population Growth & 1 BRT Corridor***

***Population Growth & 5 BRT Corridors***

## Fare-Free Transit

***Current Trajectory***

***Population Growth***

***1 BRT Corridor***

***5 BRT Corridors***

***Population Growth & 1 BRT Corridor***

***Population Growth & 5 BRT Corridors***

# Ridership Projection Methodology

**Current Trajectory** – assumes ridership will grow at 1.23% annually, which mimics last year’s growth rate. Given the transit redesign, we were hesitant to use figures from prior to 2018.

**Population Growth** – MORPC population growth projections assume that last year’s rate of 14.6 riders per capita will sustain, multiplying the revised population by the growth rate. Annualized MORPC population growth projects a 1.1% annual population growth figure. To avoid double-counting, the current trajectory growth projection is deducted from this number. This adds approximately 320k rides per year.

**BRT Projections** – contemplates the impacts of ridership in the event BRT solutions are implemented within the MORPC Corridors. This concept utilizes transit growth as a function of household growth along the corridors, and uses insight2050 transit adoption increases as a way to measure the difference between typical household growth and household growth that results in higher transit adoption. In this case ridership per household increases with BRT investment along these corridors, and the difference between revised transit adoption and current transit adoption, per household, is extrapolated in to a net gain to ridership. Specific ridership projections per corridor are as follows:

- 68,437 East Corridor; 96,141 Northeast Corridor; 99,784 Northwest Corridor; 39,122 Southeast Corridor; 399,164 West Corridor; 310,862 Downtown Corridor

**Fare-free transit** –contemplates the Simpson Curtin fare elasticity model. This model provides that for every 3% in fare increase, ridership decreases by 1%, resulting in elasticity of 33%. In our model, we assume the inverse, which is that for every 3% in fare decrease, ridership increases by 1%, resulting in a 33% change in ridership. A few notes that gave us confidence in using Simpson Curtin:

- A study conducted in 1999 *Bus Fare Elasticities* by Joyce Dargay & Mark Hanley, tested this theory and illustrated that while elasticity is more sensitive to rising fares than falling fares, the elasticities measured were, on average (30% in the short run and 60% in the long run).
- 33% falls within the range of ridership increases surveyed within the Transportation Cooperative Research Program and research on demonstration projects performed by Ice Miller.

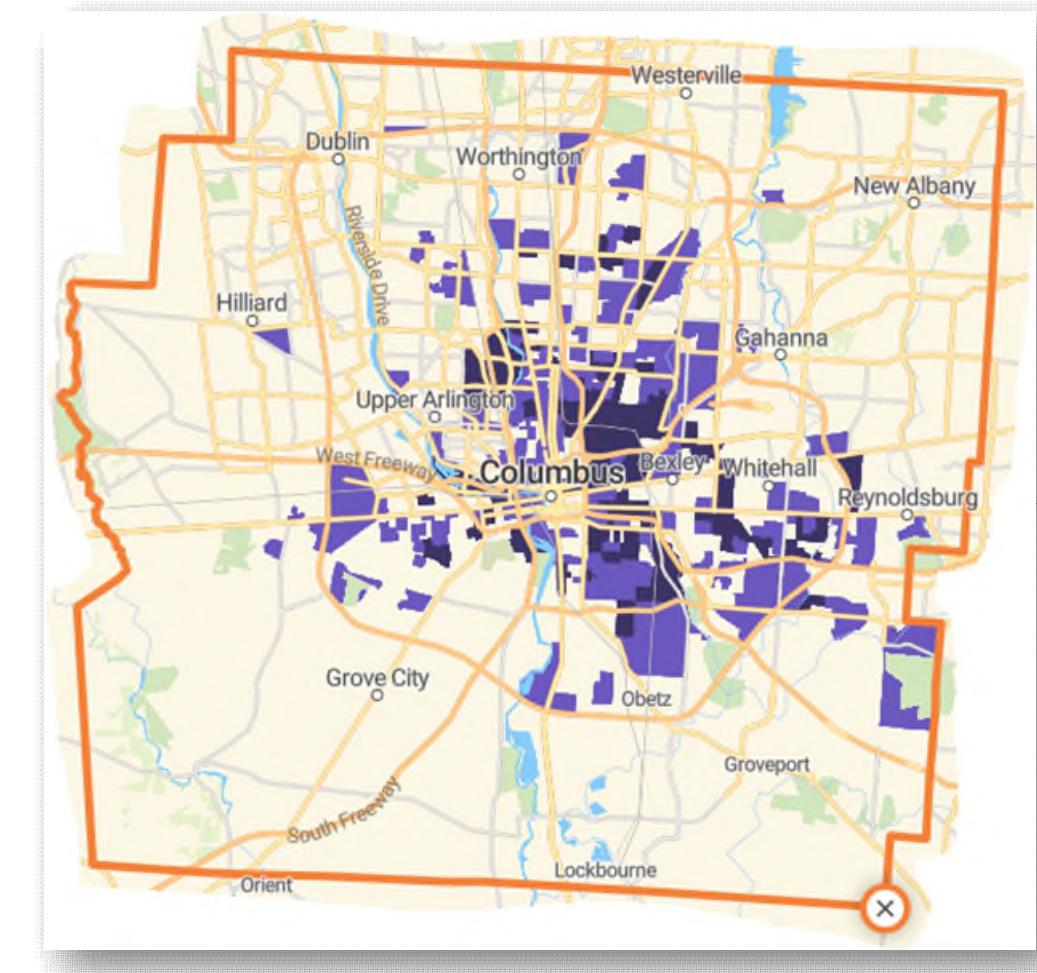
# Ridership Projection Summary

## COTA Ridership

- 2019 Ridership **19,146,510**
- Current Trajectory **+2,756,890** (2030)
- Population Growth **+3,144,336** (2030)
- \*1 MORPC BRT **+202,702** (2030)
- 5 MORPC BRTs **+1,013,510** (2030)
- **Fare-Free Transit** **+ 6,474,790** (2030)

\*Each MORPC BRT Corridor varies, ranging from 116k to 476k in ridership potential. For illustrative purposes, Corridor ridership is split evenly among all corridors.

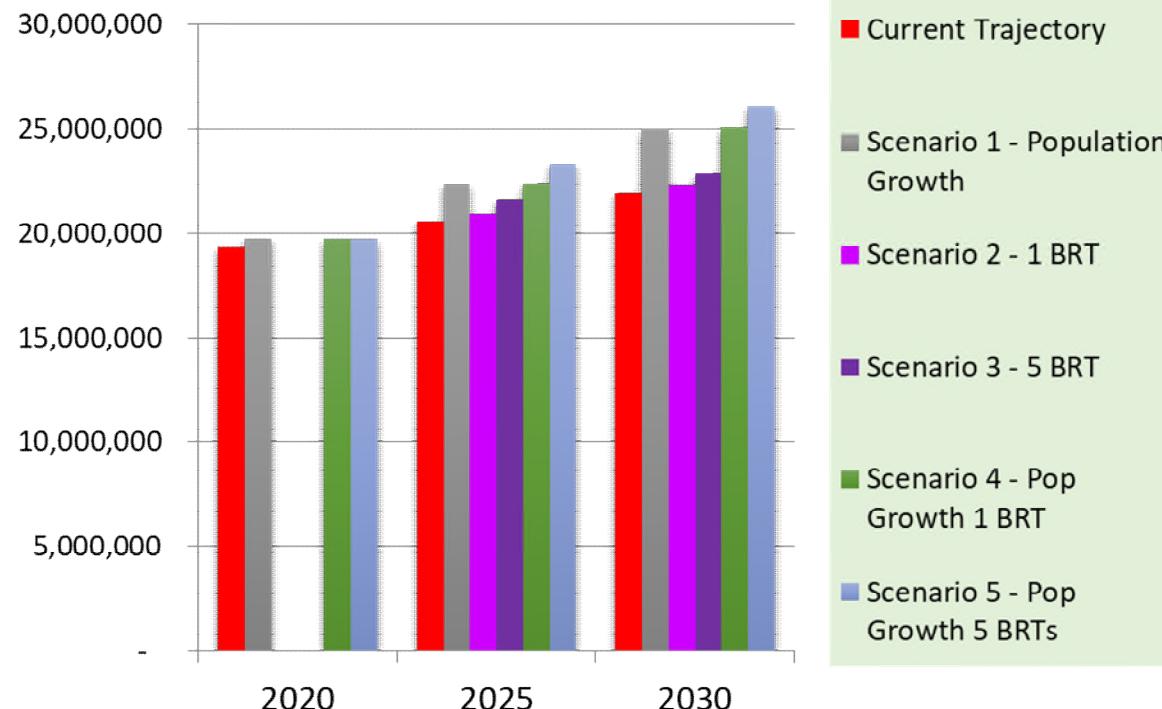
\*Assumes growth on top of current trajectory growth using Simpson Curtin Model of Elasticity



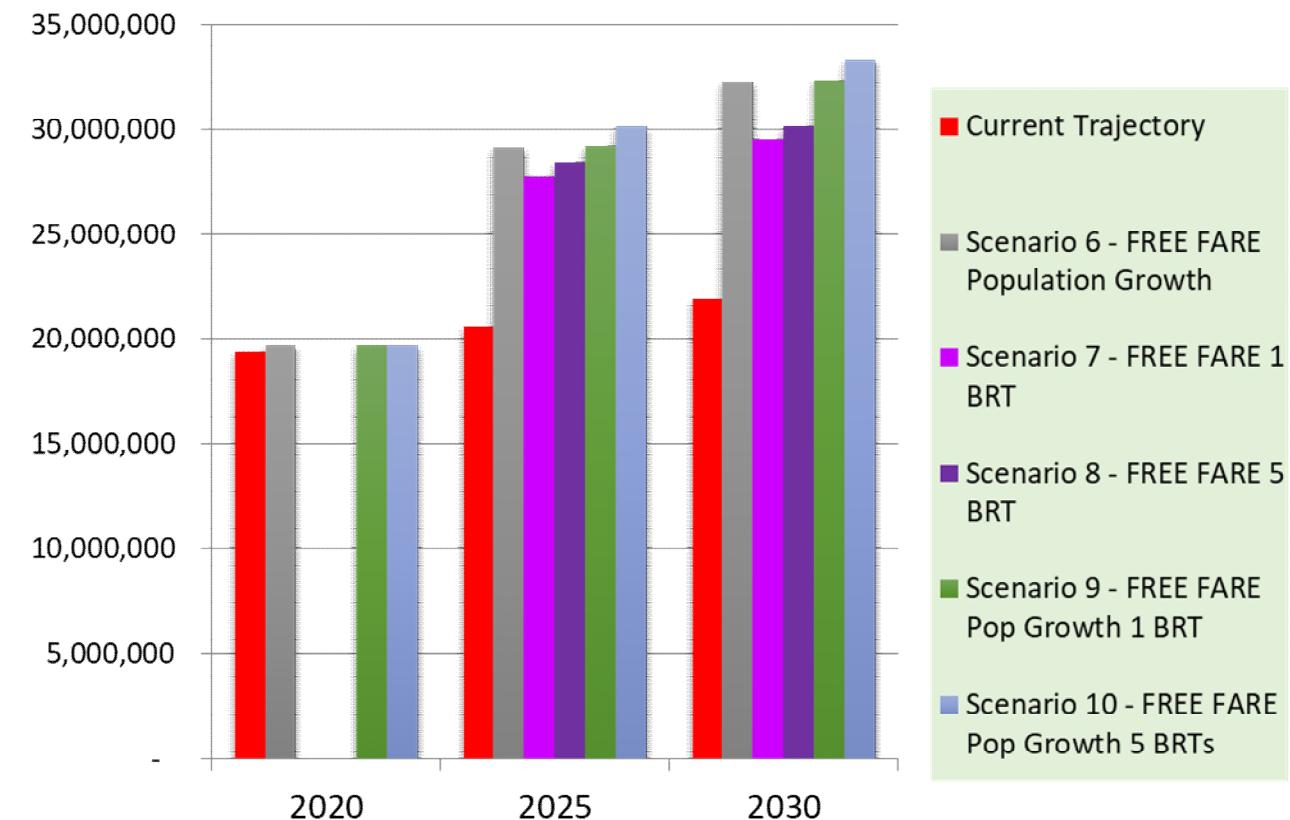
*Areas with above-average transit ridership are shaded in purple.  
Darker shades of purple represent higher ridership rates.*

# Ridership Projections

Ridership Scenarios – Current Fares



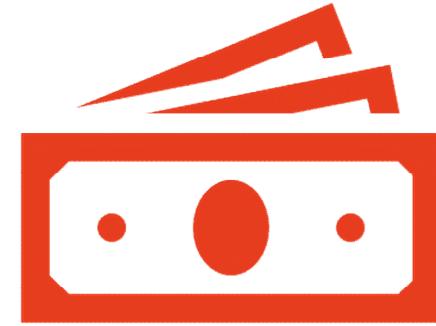
Ridership Scenarios – Fare-Free Transit



# Ridership – Detailed Projections

<u>Scenarios</u>	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Current Trajectory</b>	19,382,094	19,620,578	19,861,995	20,106,383	20,353,778	20,604,217	20,857,738	21,114,378	21,374,175	21,637,170	21,903,400
<b>Scenario 1 - Population Growth</b>	19,702,829	20,240,225	20,758,182	21,256,174	21,733,666	22,347,533	22,941,531	23,515,113	24,067,725	24,598,800	25,047,736
<b>Scenario 2 - 1 BRT</b>	0	0	0	0	0	20,983,517	21,237,038	21,493,678	21,753,475	22,016,470	22,282,700
<b>Scenario 3 - 5 BRT</b>	0	0	0	0	0	21,617,728	21,871,248	22,127,888	22,387,686	22,650,680	22,916,911
<b>Scenario 4 - Pop Growth 1 BRT</b>	19,702,829	20,240,225	20,758,182	21,256,174	21,733,666	22,415,970	23,009,968	23,583,551	24,136,163	24,667,237	25,116,173
<b>Scenario 5 - Pop Growth 5 BRTs</b>	19,702,829	20,240,225	20,758,182	21,256,174	21,733,666	23,361,043	23,955,041	24,528,624	25,081,236	25,612,310	26,061,246
<b>Scenario 6 – FARE-FREE Population Growth</b>	19,702,829	26,715,016	27,312,640	27,891,281	28,450,413	29,146,925	29,824,584	30,482,858	31,121,203	31,739,066	32,275,858
<b>Scenario 7 - FARE-FREE 1 BRT</b>	0	6,474,791	6,554,458	6,635,106	6,716,747	27,782,909	28,120,091	28,461,422	28,806,953	29,156,736	29,510,822
<b>Scenario 8 - FARE-FREE 5 BRT</b>	0	6,474,791	6,554,458	6,635,106	6,716,747	28,417,119	28,754,302	29,095,633	29,441,164	29,790,946	30,145,033
<b>Scenario 9 - FARE-FREE Pop Growth 1 BRT</b>	19,702,829	26,715,016	27,312,640	27,891,281	28,450,413	29,215,362	29,893,022	30,551,296	31,189,640	31,807,503	32,344,296
<b>Scenario 10 - FARE-FREE Pop Growth 5 BRTs</b>	19,702,829	26,715,016	27,312,640	27,891,281	28,450,413	30,160,435	30,838,095	31,496,369	32,134,713	32,752,576	33,289,368

# Costs



# Increased Ridership and Farebox Collections

Systems offering fare-free transit in areas of higher potential demand may need to account for potential impacts of increased ridership, including the need for additional maintenance, security, and possibly additional equipment in order to provide sufficient capacity and/or maintain schedules. This can add to the expense of operating the transit system, and these expenses need to be factored into the cost–benefit equation when determining if fare-free service should be provided.

Conversely, while costs of increased ridership must be considered, cost-savings associated with eliminating the farebox collection process must be factored into any analysis, these costs include:

- Purchasing and maintaining fareboxes and automated ticket vending machines
- Period cost of technology upgrades
- Provision of secure money counting rooms, equipment, and cameras
- Services to pick up and deposit money securely
- Accounting and auditing expenses
- Production/purchase of fare media such as passes and smart cards
- Commissions to third-party vendors and the staff effort to work with them
- On-board fare inspectors
- Staff time involved with analyzing modifications to fares and the necessary public hearings
- Lost time and productivity for bus trips as a result of having to collect and explain fares

# Farebox Costs & Savings

COTA does not currently separate farebox operations as a separate line-item in its financial statement, which is not uncommon in financial reporting of public transit agencies. In a 2008 study conducted by the Lane Transit District (LTD), in Eugene, Oregon, LTD found that no employees were dedicated solely to farebox collection functions, and that most employees had several duties, and consequently, eliminating fares would not result in the elimination of jobs. For example, a customer service representative sells fare instruments, but also conducts trip planning for telephone callers and for walk-in customers. If the sales function were eliminated, those hours might be required to serve customers in the Customer Service Center, particularly if ridership increased as a result of fare-free transit.

FARE REVENUE	Population	Rides	Fare 2020	*Fare 2030
	1,316,756	19,146,510	\$18,209,917	\$23,029,961
FAREBOX COST ESTIMATES	Fare Collection	Cost to Collect Fares (expressed as a % of fare revenue)	Year 1 Savings	10-yr Savings
The fare collection cost percentages represent a sample of ranges as reported by public transit agencies in the Transit Cooperative Research Program fare-free transit survey.	Scenario 1	7.5%	\$1,471,543	\$15,557,536
	Scenario 2	15%	\$2,943,087	\$31,115,072
	Scenario 3	25%	\$4,905,144	\$51,858,453

*Eliminating the cost of fare box operations can provide an estimated savings of 7.5% to 25% of fare revenues per year for the next 10 years. Such savings could range from \$15.5 million over a 10-year period to \$51.8 million over a 10-year period.*

*\*Fare revenue projections assume 2019 growth remains annually during the next 10 years.*

# Capacity

Capacity plays a large role in cost estimation as it dictates the need for any additional operational or capital investment needed in order to accommodate the projected and actual increased ridership associated with fully implemented fare-free transit. While COTA does not have precise data on the nature of excess bus capacity, COTA was able to provide us data on load factors to get a better sense of COTA's ability to absorb additional ridership.

Load factor measures the capacity utilization of public transit, and is generally used to assess how efficiently a public transit agency fills seats and generates farebox revenue. Data provided by COTA provides riders by route, and the average load factor of each route during different periods throughout calendar year 2020.

**While a more thorough analysis is required by a transportation engineer**, our team calculated a weighted average load factor (WALF) for all routes, to better get a sense of excess capacity on a per route basis. Using the pre-COVID-19 pandemic time periods of January 6, February 10 and March 9, an evaluation of the data illustrated roughly **15.48%** of capacity is utilized for all routes at the highest point of the three daily time periods analyzed and 12.95% at the lowest.

- Even the busiest routes carry a maximum load factor of not more than **27.6%**.
- It is worth noting this is a route-wide factor, not illustrative of capacity during peak hours.

**This projection preliminarily supports excess capacity absorption of projected increased ridership. It also supports the conclusion that no additional capital or operating investments would be required in order to absorb increased ridership as a result of the implementation of fare-free transit.**

Sample Day	Daily Riders	Weighted Average Load Factors	Min. Route Load Factor (emptiest route)	Max. Route Load Factor (fullest route)	Route with Most Riders
10-Feb	57,194	14.76%	5.2%	27.6%	8,427
9-Mar	52,795	12.95%	2.6%	19.3%	6,353
6-Jan	59,393	15.48%	3.6%	25.3%	7,149

# Revenue Options



# Leveraging Parking

- ✓ Parking Meter/Rate Increase
- ✓ Parking Tax

# Parking Meters

The City of Columbus currently realizes roughly \$12.1 million annually in revenue from 10,000 parking spaces (\$1,218 per space).<sup>28</sup> In February 2020, the City streamlined its parking meter rates to a three-tiered rate adjustment at more than 2,800 Downtown parking meters, including:

- Value meters at 50 cents per hour with no time limit
- In-demand meters at \$1 per hour with a 3-hour time limit
- High turnover meters at \$1.50 per hour with a 30-minute time limit (75 cents for 30 minutes)<sup>15</sup>

Part of the City's streamlining process was to provide “accessible and equitable” parking options to support a “system-wide approach to bring on-street parking rates in line with off-street rates.” While these rates provide affordability to residents, lower parking meter rates encourage the use of long-term meters by single-occupant-vehicle commuters and leads to increased congestion and air pollution as more vehicles drive to and park at City of Columbus meters. Given that fare-free transit can help combat both affordability and environmental issues, an increased charge will either a) provide a revenue stream for fare-free transit implementation or b) shift vehicle commuters to higher transit usage. Another parking demand analysis would need to be conducted to determine parking activity per meter type to come to a more precise revenue estimate. For purposes of this report only, in estimating parking revenue, a blended increase for all meters is used. Increasing meter fees by 0.50 cents per hour for all meter types could result in an additional **\$7.4 million annually.**

In 2014, the City of Pittsburgh implemented parking rate hikes for parking within the city, including downtown Pittsburgh, where rates changed from \$3 an hour to \$4 an hour. Oakland changed from \$2 to \$3 an hour; the North Shore changed from \$2.50 an hour to \$3; and rates in East Liberty, Shadyside, South Side, Squirrel Hill, the Strip District and Uptown changed from \$1 an hour to \$1.50.<sup>16</sup> The rate hikes were part of a number of initiatives to both streamline and modernize parking, however metered parking revenues increased from \$14.3 million in 2014 to \$20.3 million in 2017, a \$6 million increase from 2014 to 2017. This included a \$2.7 million increase in the first year of implementation (2015).<sup>17</sup>

10,000 Spaces

\$12,180,000 Annual Revenue

\$1,218 Annual Revenue per Space

\$3.34 Revenue per Calendar Day

\$0.14 Revenue per Calendar Hour

---

61% Blended Rate Increase

\$0.22 Revenue per Calendar Hour

\$5.37 Revenue per Calendar Day

\$1,961 Annual Revenue per Space

\$19,609,800 Annual Revenue

**\$7,429,800 + Annual Revenue Increase**

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**Example:  
City of Pittsburgh**

# Parking Tax

The Ohio Revised Code §715.09 provides for a “Limiting motor vehicle parking tax rate<sup>18</sup>” on parking activity within a municipal corporation. Even though the City of Columbus is authorized by State law to impose an excise tax of up-to an 8% municipal parking tax, the City currently does not do so.

A maximum 8% parking user tax in Downtown Columbus for its current 100,000 public and private commercially available spaces<sup>19</sup> could generate between **\$10 million to \$15 million**. This assumes a 40% to 60% occupancy range of weekday peak hours, using occupancy data from the City of Columbus Strategic Parking Plan’s Existing Condition’s Report. A City-wide parking tax (beyond Downtown Columbus) would generate even more. Free parking spaces would not be subject to such a tax. It is recommended that a parking inventory and demand study is conducted to provide a more precise revenue estimate for potential parking revenue and tax receipts.

**This parking user tax merits strong consideration as a source of fare-free revenue replacement. A parking user tax promotes the environmental goals of the community and ridership goals of transit, while providing for a long-term steady stream of revenue for fare-free revenue replacement.**

To implement the parking user tax as authorized by the State of Ohio, Columbus City Council would be required to adopt an ordinance setting the rate of tax.

The City of Cleveland has its own parking tax, an 8% tax on commercial parking spaces passed in 1995, originally to fund the construction of the Cleveland Browns Stadium, but has remained in place since. This tax, known as the Parking Occupancy Tax<sup>20</sup>, generated approximately \$15.3 million to the City in tax revenue in 2019<sup>21</sup>. Specifically, this user tax is imposed upon the “privilege of parking occupancy within the City. Such tax is imposed upon the patron for each transaction and shall be in the amount of eight percent (8%) of the parking fee charged for parking occupancy<sup>15</sup>.”

The City of Pittsburgh levies a much more aggressive tax structure, carrying the highest rate in the Country. Starting in 2009, the City of Pittsburgh imposed upon each parking transaction by a patron of a non-residential parking place, a tax at the rate of thirty-seven and one-half 37.5% for all transactions occurring on or after January 1, 2009. The rate of tax may be changed for any tax year by the legislative actions of the Mayor and City Council.<sup>22,23</sup>

*100,000 Spaces  
\$1 Rate per Hour*

*\$187.9m Annual Revenue  
\$15m Annual Parking Tax  
(8% rate)*

**City of Cleveland  
City of Pittsburgh**

# Utilization of Property Tax Tools

- ✓ Voluntary Contribution Payment
- ✓ Creation of a Tax Increment Financing District
- ✓ Creation of a New Community Authority
- ✓ Redirection of Special Improvement District
- ✓ Cost Savings through Special Assessments on City Services

# Voluntary Contribution Payment

Ohio law allows municipalities to establish a number of local tax incentives for development, including conditions in which such incentives are awarded to recipients. In this instance two tools could be used by the City of Columbus "in exchange" for a revenue stream, (i) the Ohio Community Reinvestment Area Tax Abatement (CRA) and (ii) Tax Increment Financing (TIF). The CRA program is a property tax abatement administered by municipal and county government for real estate development projects. TIF is a property tax revenue capture tool available to local governments in Ohio to finance public infrastructure improvements and, in certain circumstances, residential rehabilitation.

TIF and CRA have restrictions on eligible use of proceeds and applications, however, local governments administering these programs have the ability to set conditions on the manner and use of these tools. In this case, the City of Columbus would establish a voluntary contribution payment in connection with the use of TIF or CRA awarded to new development projects in the City of Columbus or any participating political subdivisions within COTA's footprint. These voluntary contribution payments would be dedicated to the Fare-Free transit effort. The source of these payments are not derived from the TIF proceeds itself but from the recipient of the TIF or CRA. For purposes of illustration, annual payments for each CRA or TIF could equal 15% of its annual value, generating roughly \$1 million in the first year. This uses 2019 Franklin County Auditor data for new Columbus TIF & CRA parcels to make a baseline assumption the City of Columbus annually approves TIFs for projects representing \$100 million in incremental property value and CRAs representing \$300 million in incremental property value, each year. Based upon this illustration, as more CRAs and TIFs are added, the annual value could grow to \$10 million by year 10.

The City of Cincinnati currently uses a Voluntary Tax Incentive Contribution Agreement (VTICA) in which 15% of proceeds are dedicated to a fund that pays for the Cincinnati Streetcar, Affordable Housing and other items.<sup>24</sup> By 2026, City of Cincinnati projections state the VTICA could provide \$2,000,000 each year to the streetcar. Ultimately, the value is based on how many new developments receive tax incentives with a VTICA. From 2014 to 2017, Over-the-Rhine and Downtown Cincinnati, for instance, have seen 62 projects that fit this description. Those developers still paid property tax on their initial purchase, but any improvements they made were not taxed. Instead, the developers paid 25% of their would-be bill to Cincinnati Public Schools and 15% to the streetcar. Developers in the rest of the city who receive the tax incentive have already been paying 25% to the schools, but now, in the VTICA will also include 7.5% for the neighborhood and 7.5% for affordable housing.<sup>24</sup>

## 15-year Revenue Estimates

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
TIF	\$298,594	\$597,188	\$895,781	\$1,194,375	\$1,492,969	\$1,791,563	\$2,090,156	\$2,388,750	\$2,687,344	\$2,985,938	\$3,284,531	\$3,583,125	\$3,881,719	\$4,180,313	\$4,478,906
CRA	\$716,625	\$1,433,250	\$2,149,875	\$2,866,500	\$3,583,125	\$4,299,750	\$5,016,375	\$5,733,000	\$6,449,625	\$7,166,250	\$7,882,875	\$8,599,500	\$9,316,125	\$10,032,750	\$10,749,375
Total	\$1,015,219	\$2,030,438	\$3,045,656	\$4,060,875	\$5,076,094	\$6,091,313	\$7,106,531	\$8,121,750	\$9,136,969	\$10,152,188	\$11,167,406	\$12,182,625	\$13,197,844	\$14,213,063	\$15,228,281

Note: discount rates are not applied as rising construction costs and appreciating property values are also not factored in. For purposes of calculation it is assumed they offset

\$425m annual  
TIF & CRA Property  
Value  
  
\$10.4m year 1  
Property Taxes

\$1.015m year 1  
Fare-Free Revenue  
  
\$15.2m year 15  
Fare-Free Revenue  
  
\$121.8m  
Fare-Free Revenue over  
15 years

City of Cincinnati

# Tax Increment Financing District

TIF is an economic development mechanism available to local governments in Ohio to finance public infrastructure improvements and, in certain circumstances, residential rehabilitation. As mentioned, a TIF works by locking in the taxable worth of real property at the value it holds at the time the authorizing legislation was approved. Payments derived from the increased assessed value of any improvement to real property beyond that amount are directed towards a separate fund to finance the construction of public infrastructure defined within the TIF legislation.

Any increased value in properties within the TIF district is either a) dedicated to the fare-free transit effort or b) dedicated to pay COTA capital costs, freeing up COTA funds to dedicate to the fare-free transit effort. Under Ohio's current TIF statutes, it is likely a law change would be needed to use proceeds directly for the fare-free transit effort.

Using parcels along High Street from Livingston Avenue to Lane Avenue as a pilot corridor, we can assume an \$250 million increase in property value (using taxable value increases annually based on 2018 to 2019 increases of the area<sup>25</sup>), and a 50% school compensation agreement, this would represent a value of approximately **\$3.6 million annually**.

In 2010, the City of Dallas established a Transit Oriented Development (TOD) TIF District with the goal of generating \$185 million in increment over 28 years to provide a source of funding for public infrastructure improvements, structures and facilities useful for the DART light rail system in the Central Portion of the City of Dallas.<sup>26</sup>

Maryland's Sustainable Communities Tax Increment Financing Designation and Financing Law, which became effective October 1, 2013, expanded TIF authority to enable counties and municipalities to finance a broader range of improvements including "transit services that support Sustainable Communities."<sup>27</sup>

**\$250m added annually**  
**TIF & CRA Property Value**

**\$7.3m annual**  
**Property Taxes**

**\$3.6m annual**  
**Fare Free Revenue**

**\$110.2m over 30 years**  
**Fare Free Revenue**

**City of Dallas**  
**Maryland**

# New Community Authority District

A new community authority or “NCA” is a special unit of government authorized under Chapter 349 of the Ohio Revised Code. NCAs are to be created “for purposes of encouraging the orderly development of well planned, diversified and economically sound new communities and of encouraging the initiative and participation of private enterprise in such undertakings; and encouraging cooperation between the developer and the community authority to carry out a new community development program.” Community development charges are normally assessed by new community authorities upon real property in accordance with authority granted in the declaration establishing the new community authority. They may be levied on the basis of the value of property. In addition, they may be levied on business revenues, including, for example, hotel stays, retail sales or even parking within the district. Once received, they can be used for any eligible purpose of the new community authority, including, but certainly not limited to, the payment of debt service on bonds issued by the new community authority.

In this instance, COTA supports the creation of the NCA. A 10-mill (1%) charge is placed on property of areas within the District.

Assuming 1% of property taxes associated with parcels 1,000 feet off of High Street, running from Livingston to Lane Ave., which represents \$38.4m in property taxes<sup>6</sup>, **approximately \$384,000 would be generated annually.**

NCA's, however, come with a major hurdle for larger geographies. In order for a petition to form the NCA to be properly filed, the private entity filing the petition must own or control through leases of at least 75 years duration, options or contracts to purchase, the entirety of the land within a new community district. In the case of a private entity that holds options to purchase, there is no requirement for consent of any fee holder for the creation of the NCA. This would need to be addressed by all property owners in the area, making this a heavily burdened option to deliver administratively.

While NCAs are not national tools, the concept of an NCA, which is levying a special charge, is common used in markets outside of the State of Ohio. Within the State, Projects that have been or are being financed utilizing new community authorities include the Village of New Albany; Bridge Park in the City of Dublin, Ohio; Pinnacle Golf Club in Grove City, Ohio; Tanger Outlets in Delaware County, Ohio; and Liberty Center in Liberty Township, Butler County, Ohio.

# Redirection of Current C-Pass SID

The Capital Crossroads Special Improvement District of Columbus (Capital Crossroads SID) developed a transit pass program called the Downtown C-Pass Program (the Program) for eligible employers and employees in downtown Columbus in partnership with the Central Ohio Transit Authority (COTA) and the Mid-Ohio Regional Planning Commission (MORPC). Beginning June 1, 2018, 45,000 eligible Downtown Columbus workers, including City of Columbus employees, received unlimited access to the entire COTA transportation system through the Program. The cost of the Program to serve an estimated 45,000 Downtown workers was \$4.56 million over two and half years. Property assessments within the Capital Crossroads SID covered **\$1.29 million of the cost**, with MORPC covering the remaining \$2.84 million. To assist with the remaining Program obligations, organizations such as the City will provide additional funds through sponsorships and assessments.<sup>28</sup>

Business owners currently pay a per-square-foot charge for businesses within the Capital Crossroads SID of \$0.03 (will increase to \$0.06 on 1/2021) and a \$40.50 charge per employee of businesses outside of the Capital Crossroads SID. The City of Columbus committed \$80,000 annually for three years to sponsor the Program. Additionally, since some City employees work in buildings that are within the Capital Crossroads SID boundaries but do not pay SID assessments, the City pays \$40.50 per eligible employee in its Downtown facilities<sup>28</sup>.

As part of the free-fare arrangement, COTA could request this money is shifted to supporting the program by participating corporations through a change in the SID legislation.

# Special Assessments on City Services

Ohio Revised Code Section 727.01 allows municipalities to levy and collect special assessments for various services provided by that municipality. In this case, the City of Columbus could levy special assessments on property owners to pay for City services, and redirects regular City services budget for fare-free transit. In addition, Ohio Revised Code Section 133.13 allows for the issuance of “securities in anticipation of levy or collection of special assessments to pay costs of lighting, sprinkling, sweeping, cleaning, providing related or similar services,” allowing these special assessments to be pledged for the repayment of bonds issued for up-front capital to the City.

It is recommended the City of Columbus itemize the cost of its services related to certain City services to determine exact proceeds of the opportunity. Using the City of Toledo as a comparable, it is likely the annual amount saved could absorb the annual fare revenue of COTA lost from implementing fare-free transit.

The City of Toledo levied special assessments for sprinkling, sweeping, cleaning and snow removal services for the municipal streets, alleys and public ways in the City during the calendar year 2019, passing the cost \$17,749,080 for street service assessments to property owners.<sup>29</sup>

# Utilization of Sales Tax / Sales Charge Tools

- ✓ Sales Tax Increase
- ✓ New Community Authority

# Sales Tax Increase

Ohio Revised Code 5739.023 allows transit authorities to levy sales and use taxes that “piggyback” on the statewide 5.75 percent sales and use tax. The Ohio Department of Taxation collects the combined state and local tax and then distributes the local share of revenue directly to the counties and transit authorities<sup>30</sup>. Transit authorities can levy this tax at rates of 0.25 percent to 1.50 percent, also in one-twentieth of one percent (.05 percent) increments.

COTA currently levies a sales tax of 0.50% on Franklin County sales. In 2019, this generated \$135.7m.<sup>35</sup>

In order to replace the revenue of fare-free transit, a 0.10% additional sales tax would need to be levied to bring COTA's sales tax to 0.60% overall, this would generate approximately **\$27.1m annually**. A minimum sales tax increase of .05%, would generate an estimated \$13.7 million, annually.

Sales taxes represent a common revenue stream for transit authorities around the United States. Notably in the City of Olympia, a sales tax increase of 0.4% (to a total of 1.2%) was implemented in which a portion of the funding was dedicated to the InterCity Transit Authority's 5-year “Zero Fare Demonstration Project<sup>2</sup>.”

*Transit-dedicated sales tax rates for peer Metro areas.*

Transit Agency	Sales Tax Rate
MARTA within Atlanta	1.500%
GCRTA (Cleveland)	1.000%
Capital Metro (Austin)	1.000%
MARTA (Atlanta Region)	1.000%
DART (Dallas)	1.000%
RTD (Denver)	1.000%
KCMTA (Seattle)	0.900%
KCATA (Kansas City)	0.875%
SORTA (Cincinnati)	0.800%
UTA (Salt Lake)	0.688%
Metro St. Louis	0.500%
<i>COTA (Columbus)</i>	<i>0.500%</i>

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Trajectory (.5% Current Rate)	\$131.8	\$129.1	\$131.4	\$135.7	\$137.1	\$138.4	\$139.8	\$141.2	\$142.6	\$144.0	\$145.5	\$146.9	\$148.4	\$149.9	\$151.4
0.05% Total Increase (.55% Rate)					\$150.8	\$152.3	\$153.8	\$155.3	\$156.9	\$158.5	\$160.0	\$161.6	\$163.3	\$164.9	\$166.5
0.10% Total Increase (.60% Rate)					\$164.5	\$166.1	\$167.8	\$169.5	\$171.1	\$172.9	\$174.6	\$176.3	\$178.1	\$179.9	\$181.7
.05% Net Increase					\$13.7	\$13.8	\$14.0	\$14.1	\$14.3	\$14.4	\$14.5	\$14.7	\$14.8	\$15.0	\$15.1
.10% Net Increase					\$27.4	\$27.7	\$28.0	\$28.2	\$28.5	\$28.8	\$29.1	\$29.4	\$29.7	\$30.0	\$30.3

# New Community Authority (Retailer Charge)

In an earlier example an NCA is contemplated through the use of a property charge. Given an NCA's have flexibility to place a charge on numerous types of economic activity, this contemplates an alternative method for generating revenue.

In this case, the City of Columbus creates an NCA along a retail and service-sector corridor that places a charge on sales. This could be otherwise thought of as a pilot sales tax increase. An alternative form could be utilizing the same approach via payroll charge on employees.

Using an example geography of High Street from Livingston to Lane, approximately 513 retailers exist with aggregate estimated revenues of \$534 million, a .5% charge is placed on retail sales, **generating \$2.6 million annually** to the fare-free transit effort.<sup>31</sup>

As mentioned previously, NCA's come with a major hurdle for larger geographies. In order for a petition to form the NCA to be properly filed, the private entity filing the petition must own or control through leases of at least 75 years duration, options or contracts to purchase, the entirety of the land within a new community district. In the case of a private entity that holds options to purchase, there is no requirement for consent of any fee holder for the creation of the NCA. This would need to be addressed by all property owners in the area, making this a heavily burdened option to deliver administratively.

While NCAs are not national tools, the concept of an NCA, which is levying a special charge, is common used in markets outside of the State of Ohio. Within the State, Projects that have been or are being financed utilizing new community authorities include the Village of New Albany; Bridge Park in the City of Dublin, Ohio; Pinnacle Golf Club in Grove City, Ohio; Tanger Outlets in Delaware County, Ohio; and Liberty Center in Liberty Township, Butler County, Ohio.

# Public-Private Partnerships

- ✓ COTA Asset Sale
- ✓ Advertising Revenue/Sponsorship Revenue

# COTA Asset Sale-Leaseback

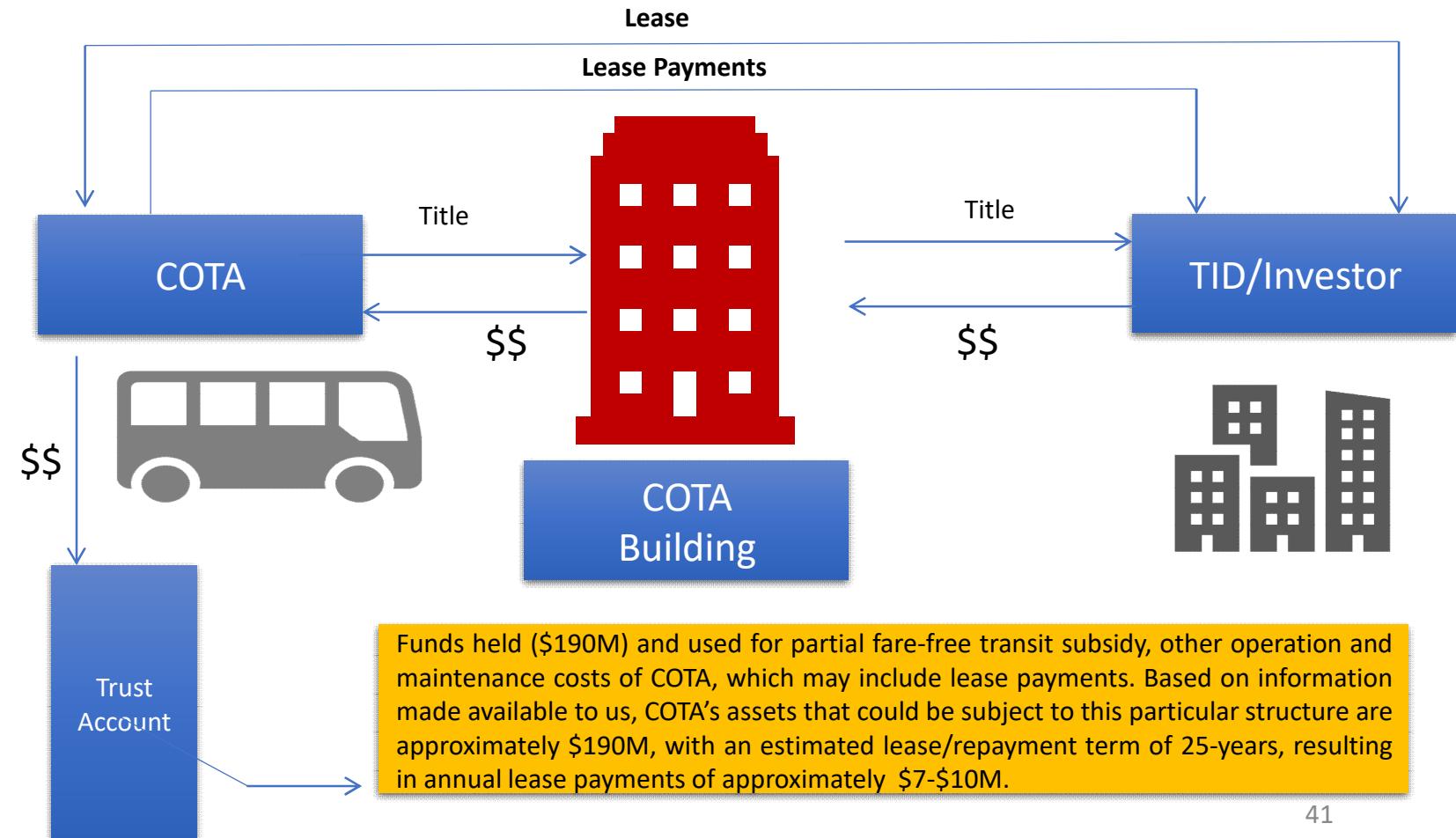
- \$397m (\$223m with depreciation) in Capital Assets include:
    - land & construction in progress (\$22m)
    - buildings (\$159m)
    - revenue vehicles (\$152m)
    - transit centers (\$10.8m)
    - equipment (\$56m)
  - \$170m in op-ex includes:
    - vehicle operations (\$92m)
    - vehicle maintenance (\$32m)
    - facilities maintenance (\$8.7m)
    - G&A (\$36.4m)
- COTA  
Assets <sup>1</sup>

In general, these financings involve the sale or lease of real or personal property to a private, nonprofit, or other public entity. The original owner then leases the property back under a sublease. These transactions are also commonly known as sale-leasebacks, lease-leasebacks, lease-in and lease-out (LILO) transactions, or lease-to-service transactions, depending on the timeframe and nature of ownership change.

In this example, COTA sells its assets to the Franklin County Transportation Improvement District (TID), then leases the assets back by remitting an annual lease payment to the TID, using the sale proceeds for the fare-free transit effort. The assets would include buildings, land and transit centers based on the asset classes and values COTA uses in its 2019 Comprehensive Annual Financial Report.<sup>1</sup>

The sale proceeds could be used for partial farebox revenue replacement, operations and maintenance costs of COTA, including the lease payments. The TID would source its capital to purchase from an issuance or borrowing of some type, including a private component.

This could roughly generate a **\$190 million fund**, assuming the values used in COTA's CAFR. Fund would need to anticipate lease payments of \$7m-10m annually, including operational and maintenance expenses before dedicating the funds to the fare-free transit effort.



# Advertising Revenue/Sponsorship Revenue

Advertising can have a transformative effect on transport operators, by driving ridership, thoughtfully engaging consumers and with digital solutions, offering data to optimize operations. Further, advertising and sponsorships can provide corporations, institutions and government organizations the ability to participate and contribute to a public benefit, which increases goodwill enhances its brand within the community.

COTA could consider corporate and institutional sponsorship of fare-free transit. These corporations and institutions can use this sponsorship to enhance their brand, align themselves with sustainability/environmental goals and assist in attracting talent.

A lead sponsorship could generate approximately **\$1.8-\$2.6m** million in annual corporate sponsorships.

Kansas City, the first City to announce its plans to implement fare-free transit for all residents, announced its initiative will have a corporate sponsor, expected to contribute \$1 million a year for five years, bringing the total to \$5.8 million. However, the COVID-19 pandemic halted updates in announcing and progress or new developments on the effort<sup>32</sup>.

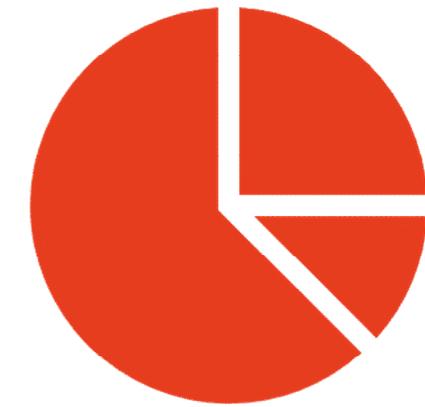
In December of 2019, the Chicago Transit Authority Board of Directors approved a new contract with Intersection to manage the Chicago Transit Authority's (CTA) static and digital advertisements across the system to continue efforts to "both boost customer information and earn revenue from sources other than the farebox." The five-year base contract, which includes a five-year option, begins on January 1, 2020 and has an estimated value of up to \$247.5 million, including:

- \$204.6 million in shared revenues, with \$187 million guaranteed to CTA;
- \$30.3 million in capital investment in new digital screens by Intersection; and
- \$12.6 million investment in software upgrades to run digital advertising screens that also display customer information.<sup>33</sup>

# Summary of Revenue Options

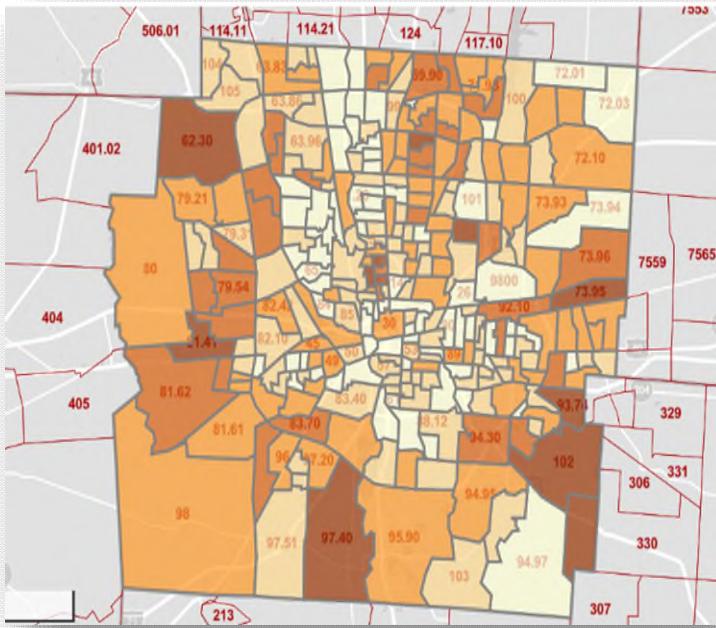
Name	Type	Estimated Annual Revenue
Parking Meter/Rate Increase	Leveraging Parking	\$7,400,000
Parking Tax	Leveraging Parking	\$10,000,000 - \$15,000,000
Voluntary Contribution Payment	Property Tax Tools	\$5,500,000
Creation of a Tax Increment Financing District	Property Tax Tools	\$3,600,000
Creation of a New Community Authority	Property Tax Tools	\$384,000
Redirection of Special Improvement District	Property Tax Tools	\$1,290,000
Cost Savings through Special Assessments on City Services	Property Tax Tools	N/A
Sales Tax Increase	Sales Taxes/Charges	\$13,700,000 - \$27,100,000
Creation of a New Community Authority	Sales Taxes/Charges	\$2,600,000
COTA Asset Sale	Public-Private Partnerships	\$190,000,000 Up-front Payment
Advertising Revenue/Sponsorships	Public-Private Partnerships	\$1,800,000 - \$2,600,000

# Fare-free Transit Alternatives



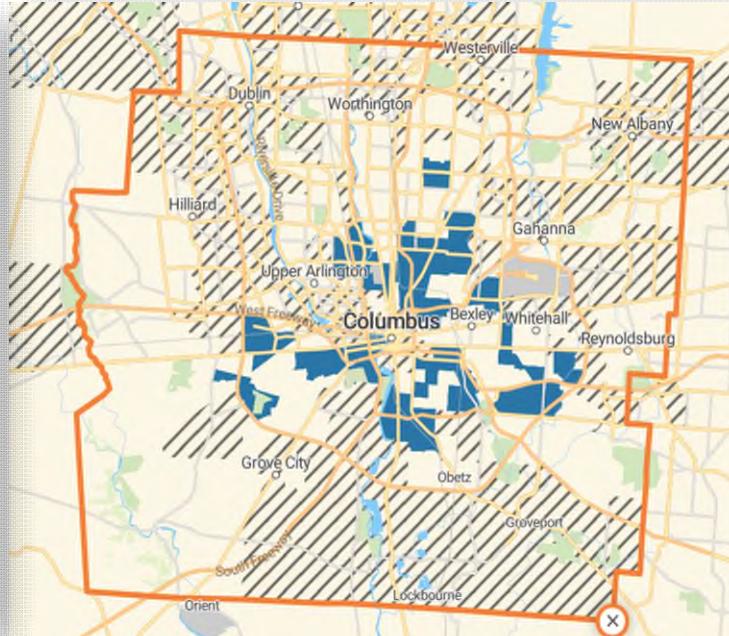
# Fare-Free Transit Alternatives

## ***Report to Work Employees***



Includes populations with occupations that are not impacted by recent work-from home trends. This particularly includes an analysis of COVID-19 ridership activity, to better understand bus stop trends as they relate to surrounding employment conditions.

## ***Low Income Households***



Includes households with higher cost burdens due to transportation expenses.

*MORPC Corridor*



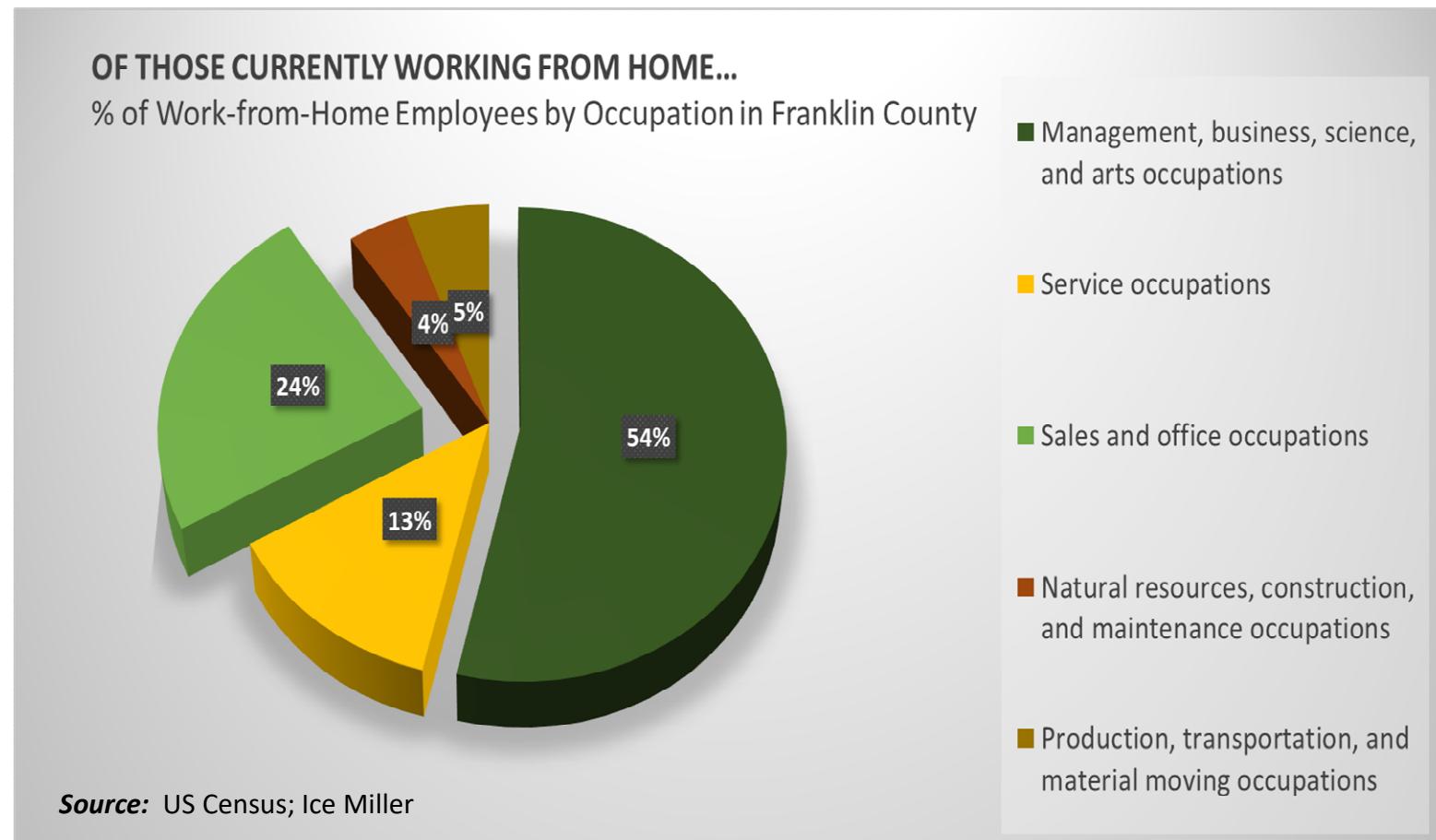
Deploys fare-free transit to one of the five identified MORPC corridors from the insight2050 Corridor Concepts Study. In this case, the West Broad Street corridor is used for illustrative purposes.

“Report to Work” Employees

# Reporting to Work

For purposes of this report, “Report to Work” employees are those who must perform his or her job at the work site or business, rather than working from home. The COVID-19 pandemic has caused the majority of office workers to shift to a work-from-home arrangement. This new option may continue as a trend post-pandemic.

In determining “Report to Work” employees, we use three of the five Census-categorized occupational categories as those who are most likely to report to the job site 1) Service occupations, 2) Natural resources, construction and maintenance occupations and 3) Production, transportation and material moving occupations. We assume occupations in 1) Management, business, science and arts occupations and 2) Sales and office occupations would not be considered “Essential” for this report.



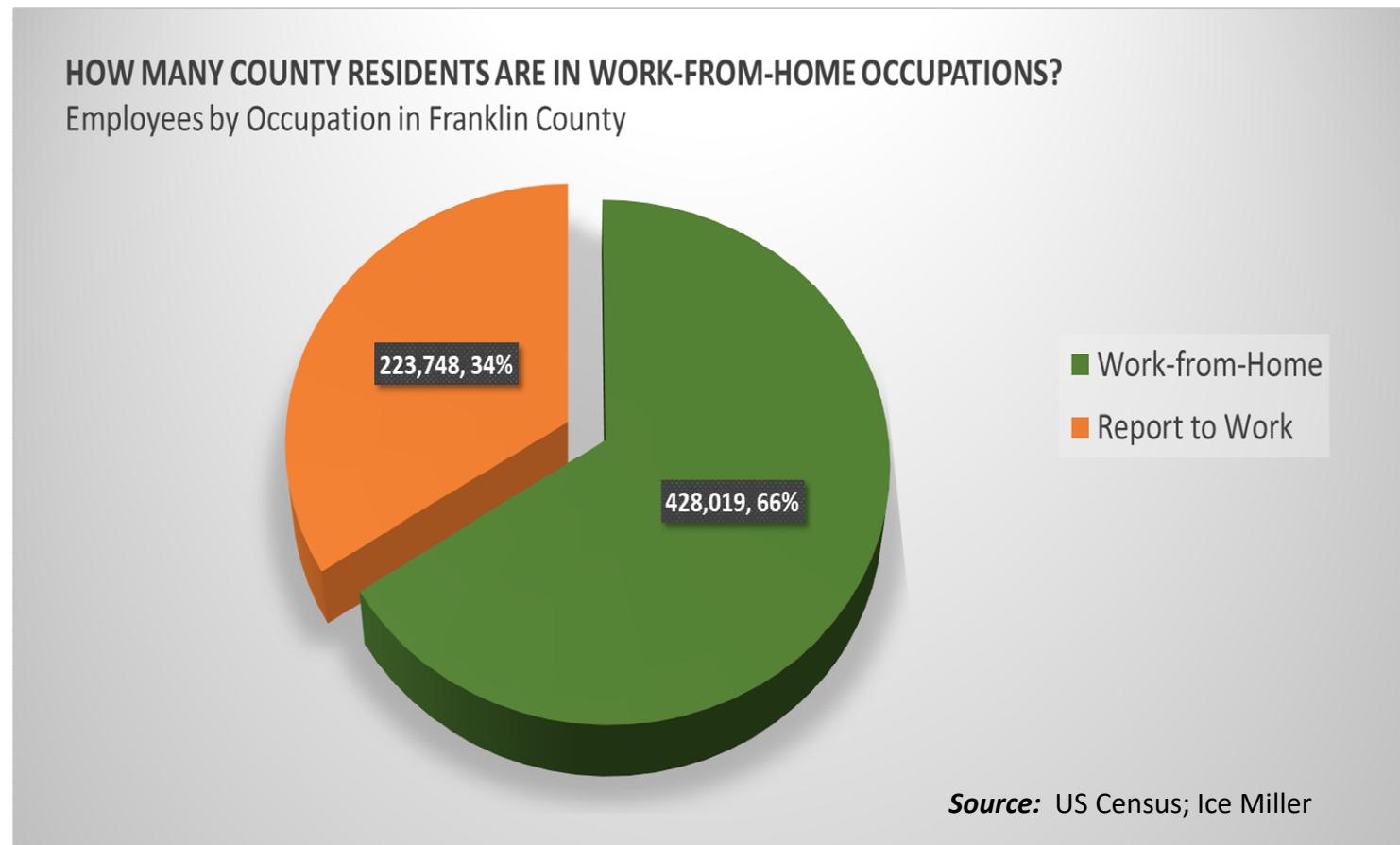
The data above illustrates that of employees working from home in Franklin County in 2018, 78% are in both Service and Management occupations.

# Report to Work Occupations

When organizing the occupational categories mentioned in the previous slide into “Work-from-Home” and “Report to Work”, approximately 66% of Franklin County employees (428,019 employees) work in occupations that are more likely to work from home<sup>34</sup>.

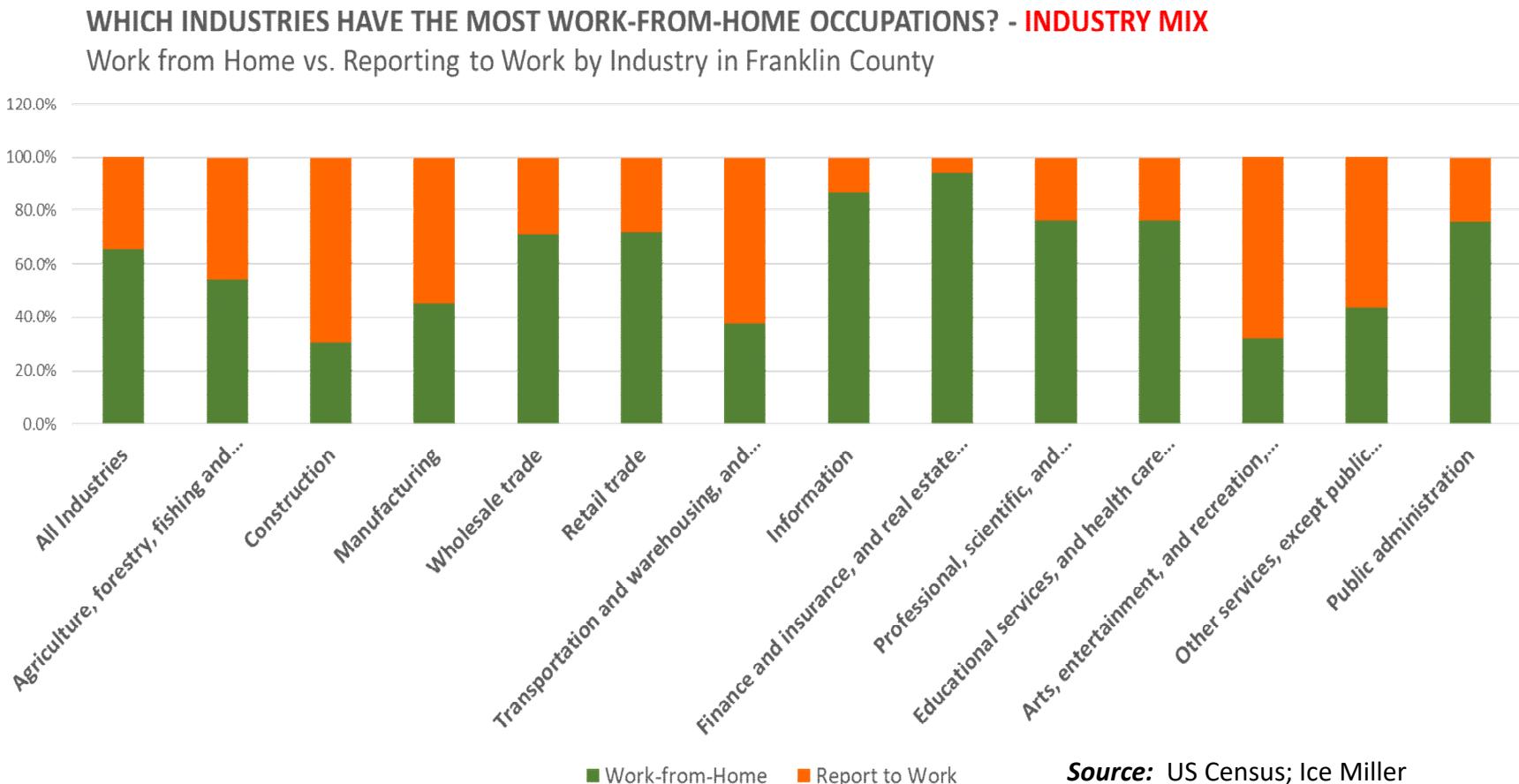
The other 34%, or 223,748 employees, work in occupations more likely requiring the employee to report to the work location or job site.

It is worth noting that for transit purposes, “Report to Work” includes construction and mining occupations, which may not have a consistent work site that is served by transit.



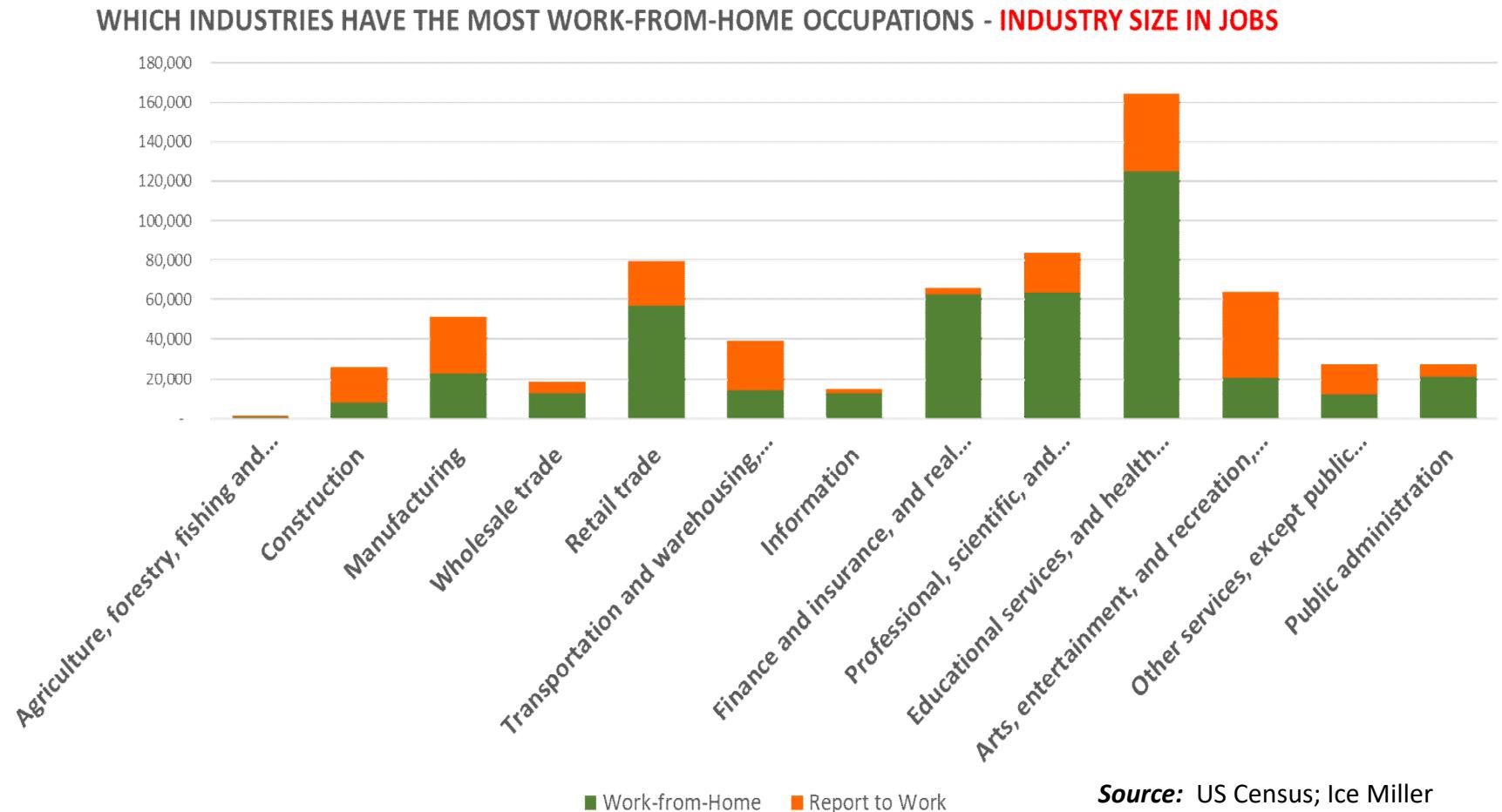
# Report to Work Industries

Using the “Work-from-Home” and “Report to Work” categories, the graph to the right illustrates the typical mix of both categories by industry. This may provide helpful in using industry groups to assist in the communication effort in rolling out a Report to Work transit program.



# Report to Work Industries

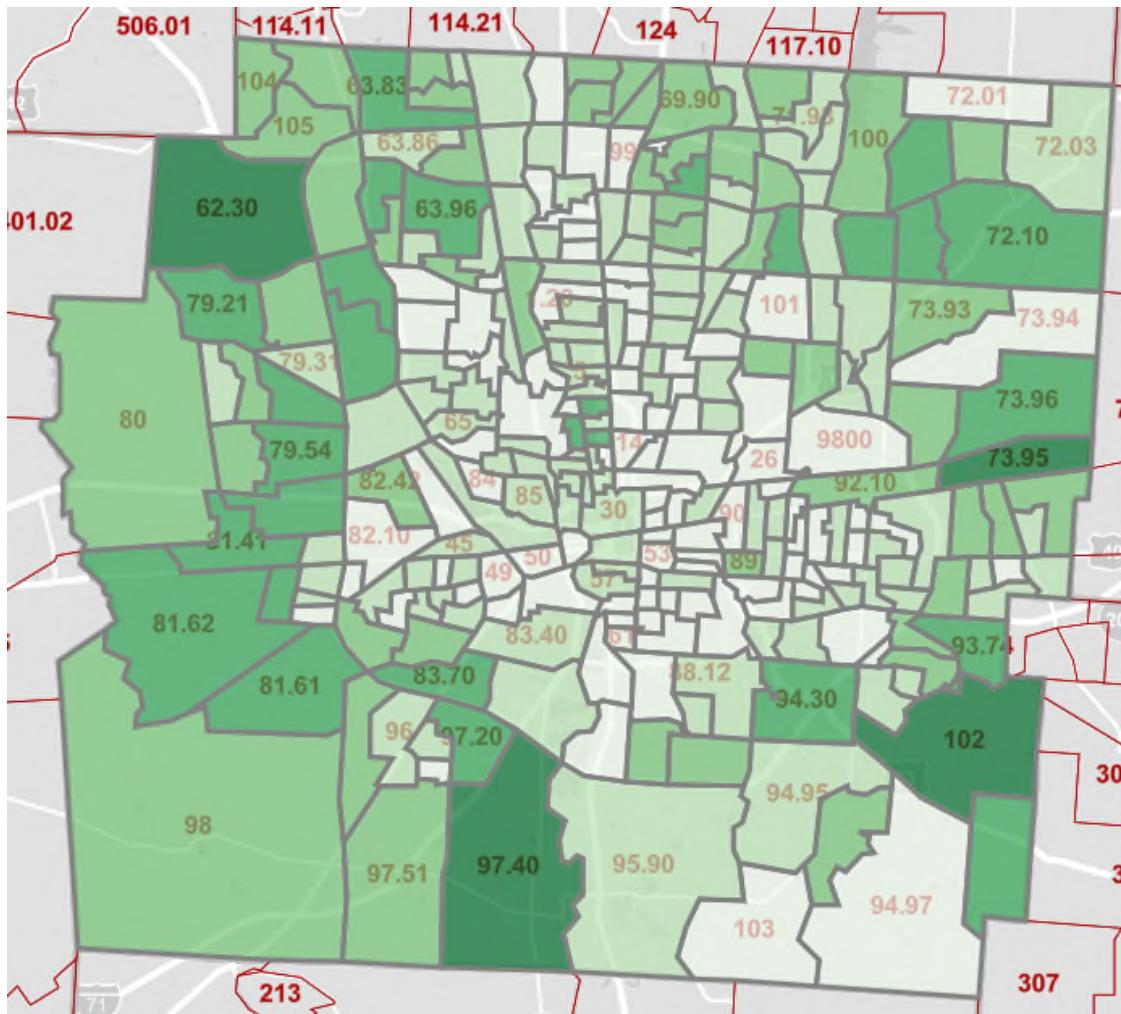
This graph illustrates the size of each industry and its associated Work-from-Home and Report to Work mix.



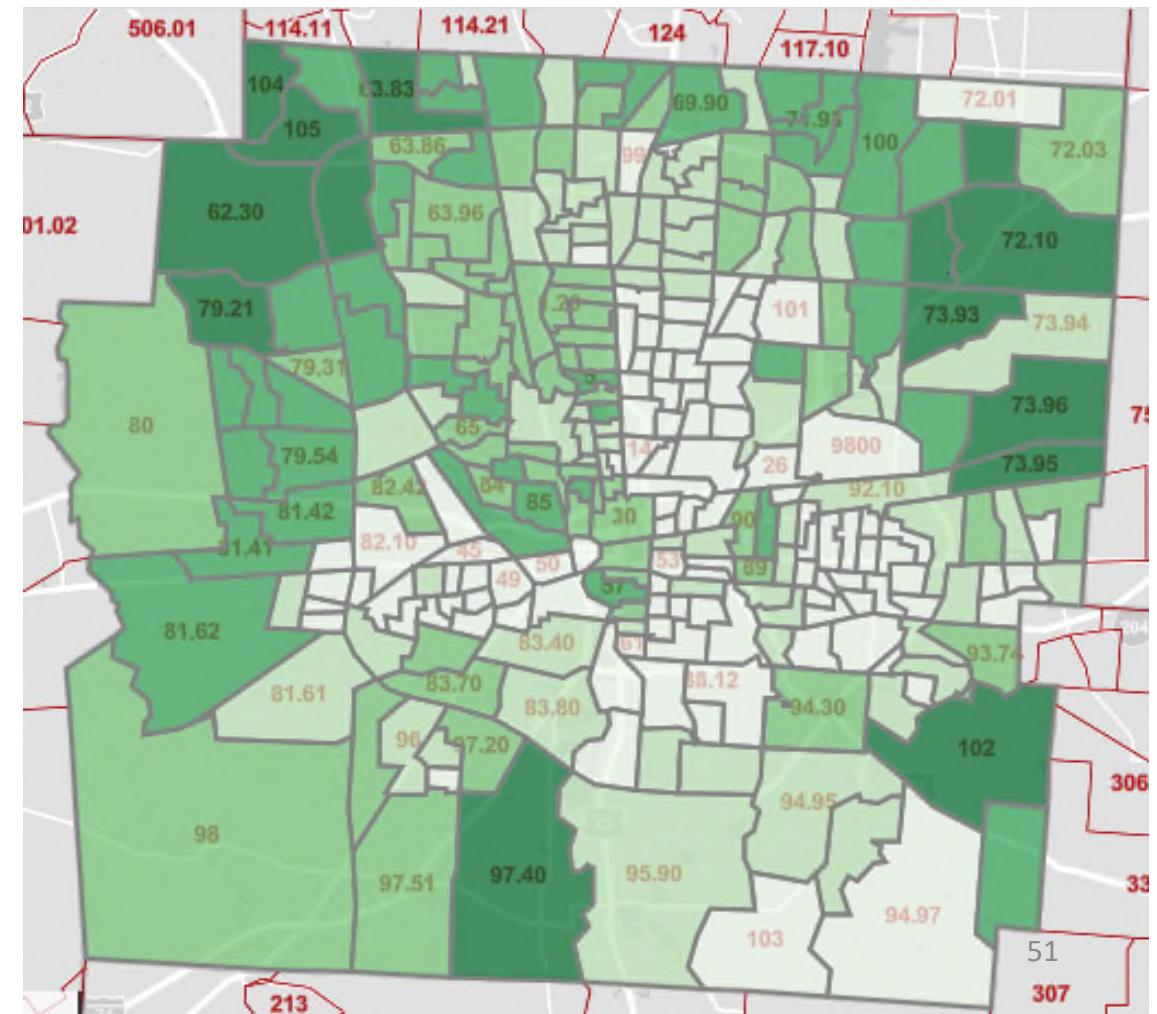
# Work-from-Home Employees

The maps below depict the concentration of residents within a specific occupational category within Franklin County. The darker the shade, the more likely the resident is to work from home.

Sales & Office Jobs



Management Jobs

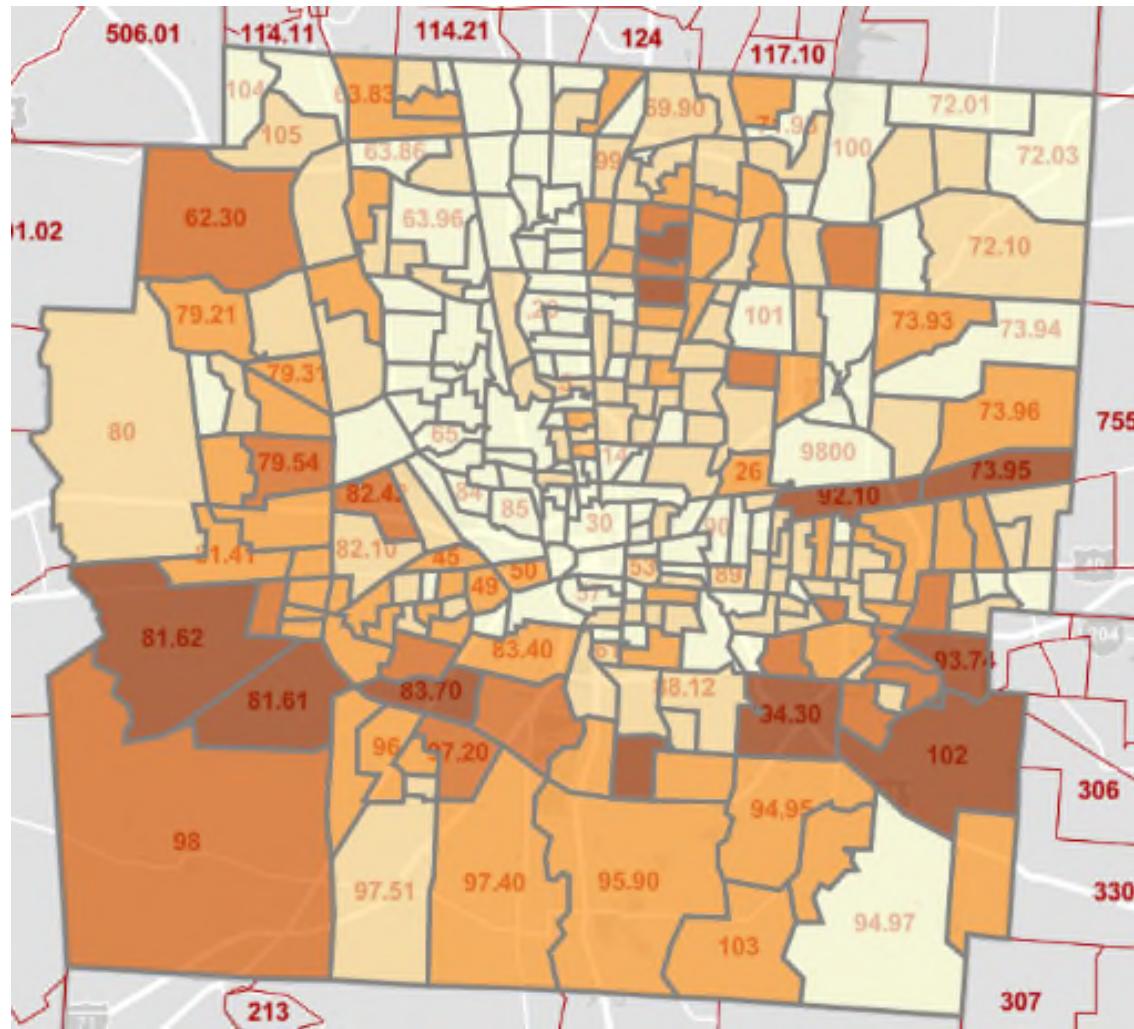


Source: US Census; Ice Miller

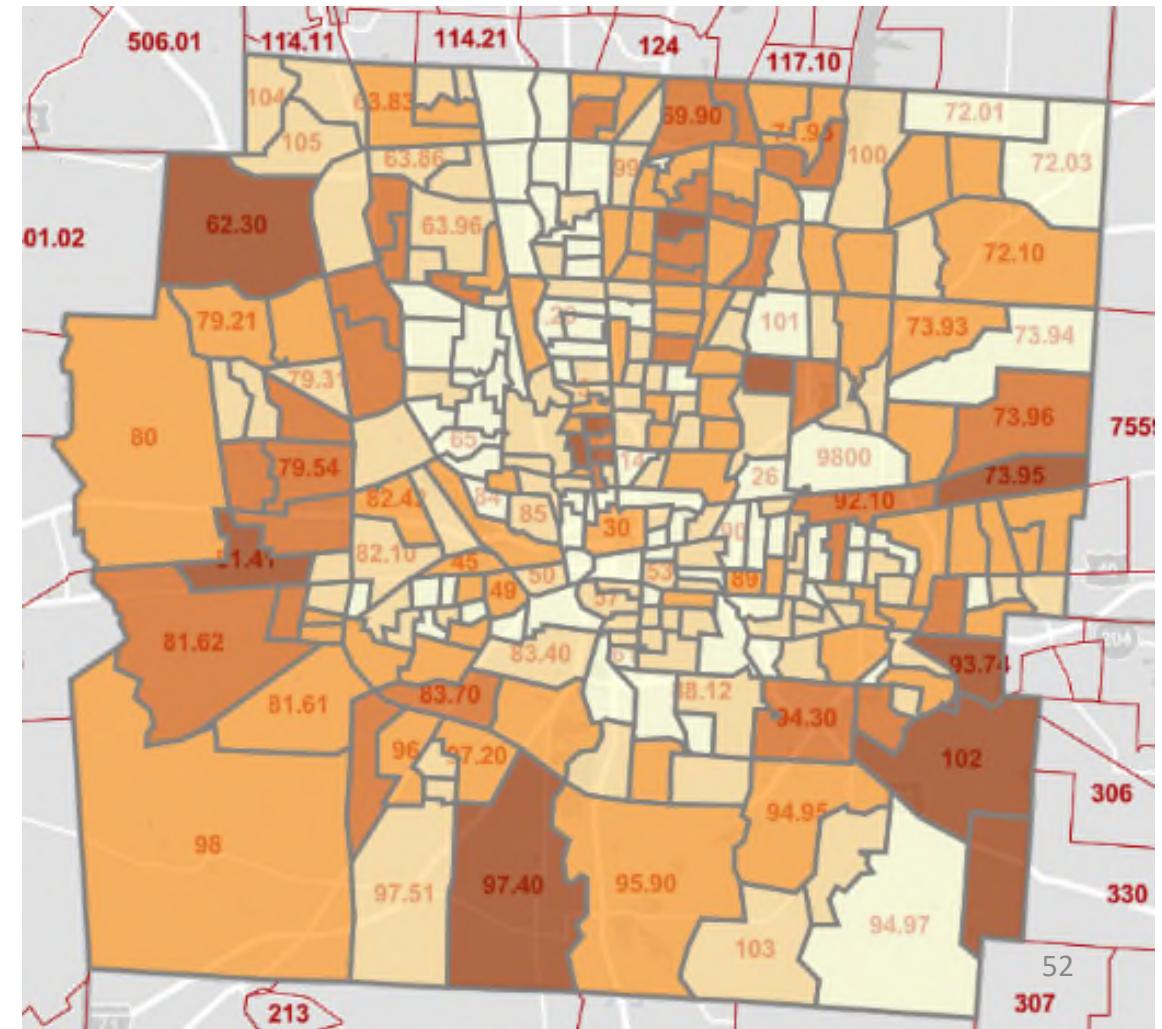
# Report to Work Employees

The maps below depict the concentration of residents within a specific occupational category within Franklin County. The darker the shade, the more likely the resident works in an occupation likely to report to work.

Manufacturing & Production Jobs



Service & Retail Jobs



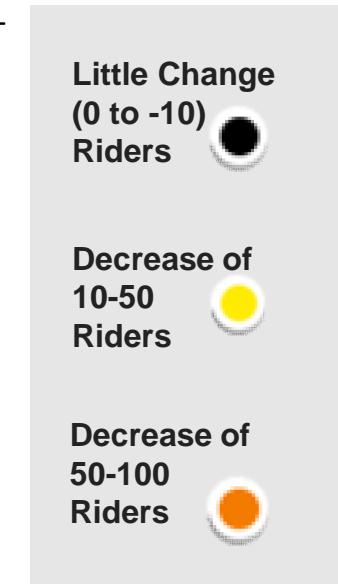
Source: US Census; Ice Miller

# Who has been reporting to work?

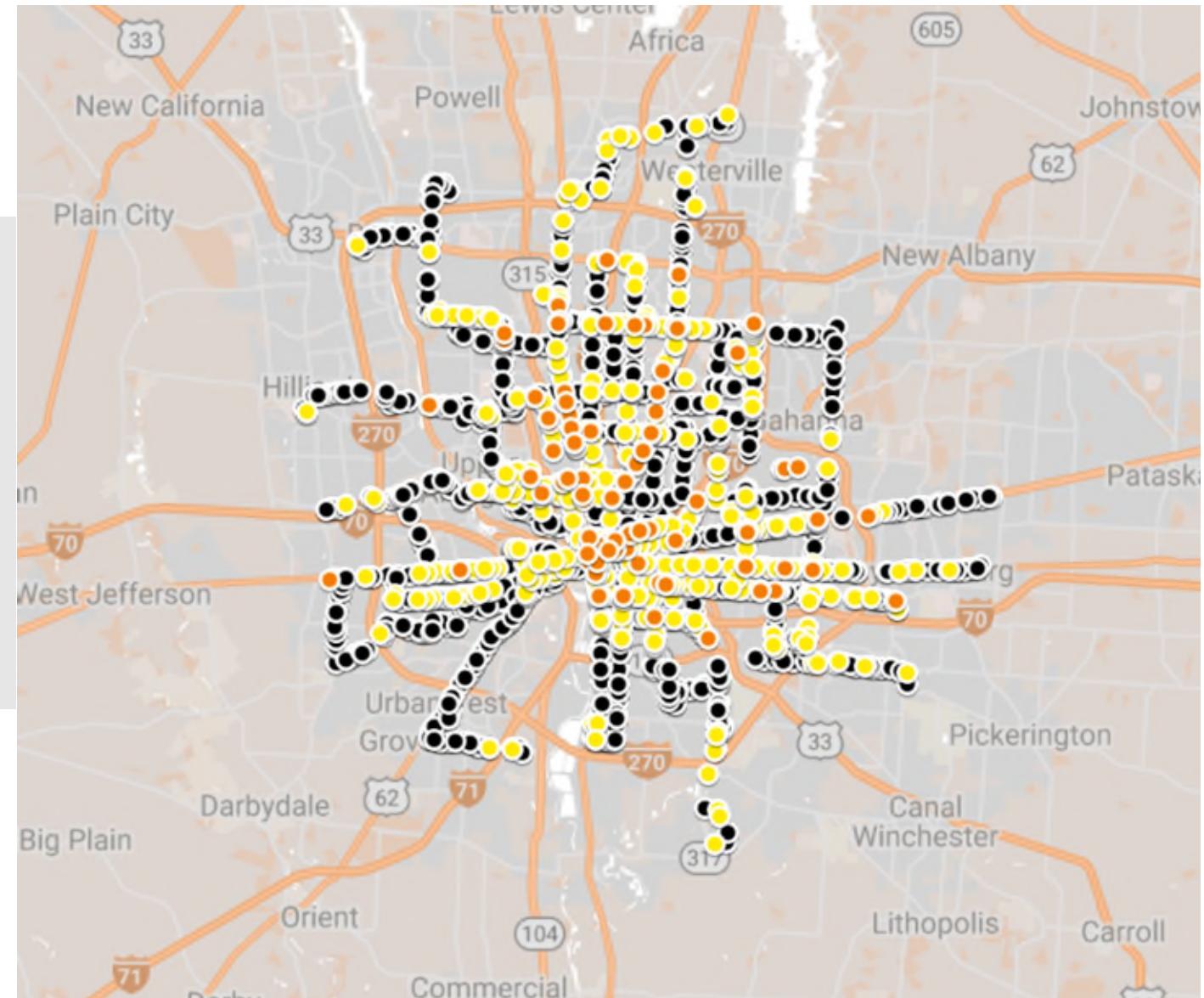
This map illustrates daily ridership changes by stop during the 2020 period of January 6 to March 15 ("Pre-COVID-19") to the COVID-19 initial period of April 27 to July 24 ("COVID-19"). During COVID-19, only certain workers were able to report to work, and many companies, primarily office users, mandated work-from-home policies. This map illustrates that the majority of bus stops were experiencing decreases in ridership.

In conclusion, ridership at most bus stops experienced daily decreases as more employees were forced to work from home during COVID-19.

The following page examines employment conditions of bus stops with the largest changes. Aggressive decreases in bus stop ridership took place in retail areas because many retail centers closed or had limited service during COVID-19.



Change in Average Daily 2020 Ridership by Bus Stop  
Pre-COVID-19 to COVID-19



Source: COTA Bus Stop Data; Ice Miller

# Who has been reporting to work?

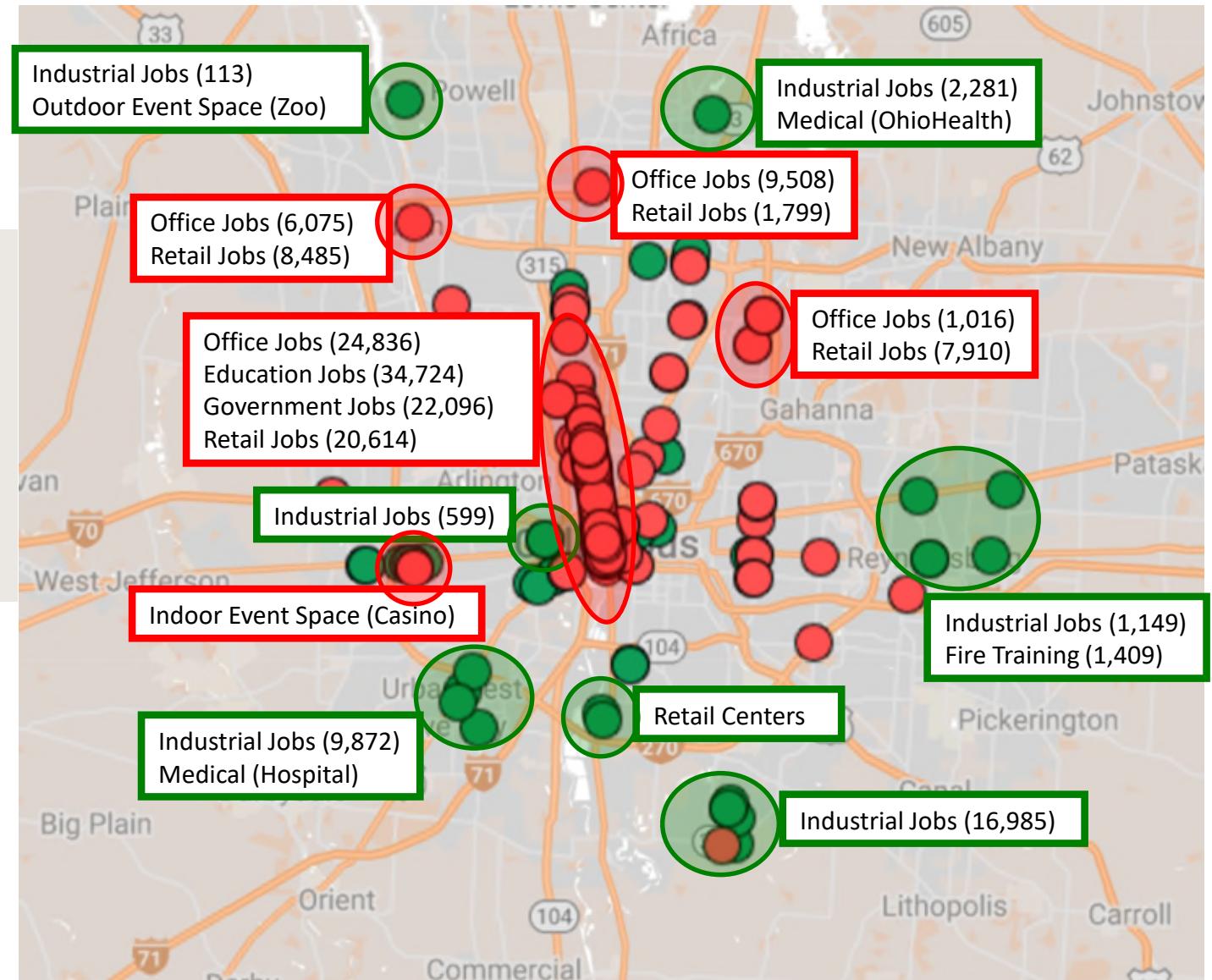
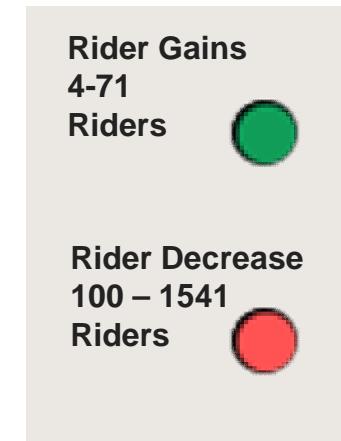
This map illustrates bus stops with the highest ridership gains and ridership decreases. Very few bus stops realized ridership gains and not one single bus stop realized more than a 71-rider gain.

The decreases were more severe as some bus stops lost over 1,000 daily riders.

There are common characteristics with the surrounding conditions of bus stops with rider gains and aggressive rider decreases.

Stops experiencing gains typically consisted of higher levels of industrial jobs, hospital and doctors offices, retail strips and grocery centers.

Stops with aggressive ridership decreases included areas with higher levels of office jobs and certain retail (i.e. clothing, bars & restaurants, etc.)



Source: US Census; Ice Miller; JobsOhio GIS

# Report to Work Employees

The table below represents estimated ridership and fare revenue replacement in Report to Work occupations. This utilizes current transit ridership of Report to Work occupational categories from US Census data and translates it to ridership using a ridership-per-capita ratio of 14.61 rides per person. Calculated estimated ridership is then multiplied by 95 cents per rider to arrive at revenue replacement estimates. Revenue replacement 2030 assumes annual fare revenue growth of 1.23% (represents the change in fare revenue from calendar year 2018 to 2019).<sup>1</sup> Ridership calculations are then adjusted upward by a Fare-Free factor of 1.33 to illustrate increase ridership in the even of free fare.

	Population	Rides	Revenue Replacement 2020	Revenue Replacement 2030
Fare-Free Transit for All	1,316,756	19,146,510	\$18,209,917	\$26.7m
Report to Work Current Ridership	6,762	98,792	\$93,853	\$107k
Report to Work Ridership & Fare-Free	8,993	131,387	\$124,818	\$142k

# Low Income Households

# Overview

While transit systems benefit all income groups, they are particularly important for low-income households, as the availability of transit systems increases accessibility to jobs, education, and other amenities.

Low-income customers have unique needs that provide challenges for transit agencies, for instance:

- Low-income households are also less likely to have access to automobiles
- Low-income households have less disposable income, making them more captive to transit
- Lower-income occupations require employees to work odd hours making it difficult for transit to meet their needs
- Low-income households are most vulnerable to fare increases
- Low-income households are forced to pick-and-choose between daily necessities as incomes do not match fixed necessity costs.

Cost Necessity Category	Franklin County Households less than \$25k
Transportation	46.8%
Housing	30.0%
Healthcare	7.3%
Food	10.3%
Clothing	2.5%
Education	1.73%
Child Care	14.0%
<b>Total</b>	<b>112.6%</b>

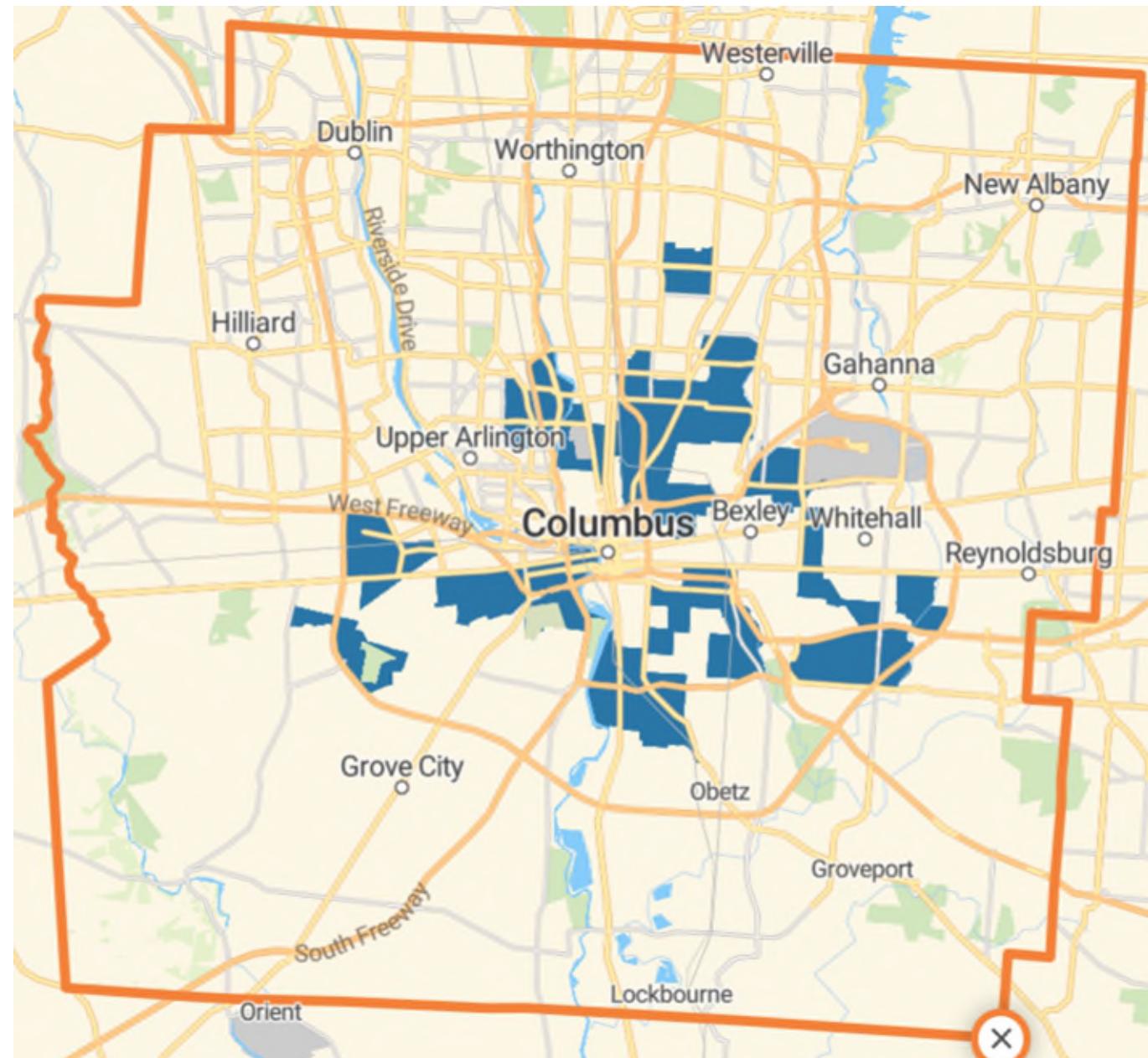
# Lower Income Households

Franklin County has approximately 96,101 households making less than \$25,000, approximating to 237,370 residents.

The map to the right references areas of Franklin County with the highest concentration of lower income households.

Areas where Median Household Income is Less than \$25,000 are shaded in blue

Franklin County Household Income Brackets	Share of County	Households	Residents
Less than \$10,000	6.20%	32,207	79,551
\$10,000 to \$14,999	3.70%	19,220	47,474
\$15,000 to \$24,999	8.60%	44,674	110,345



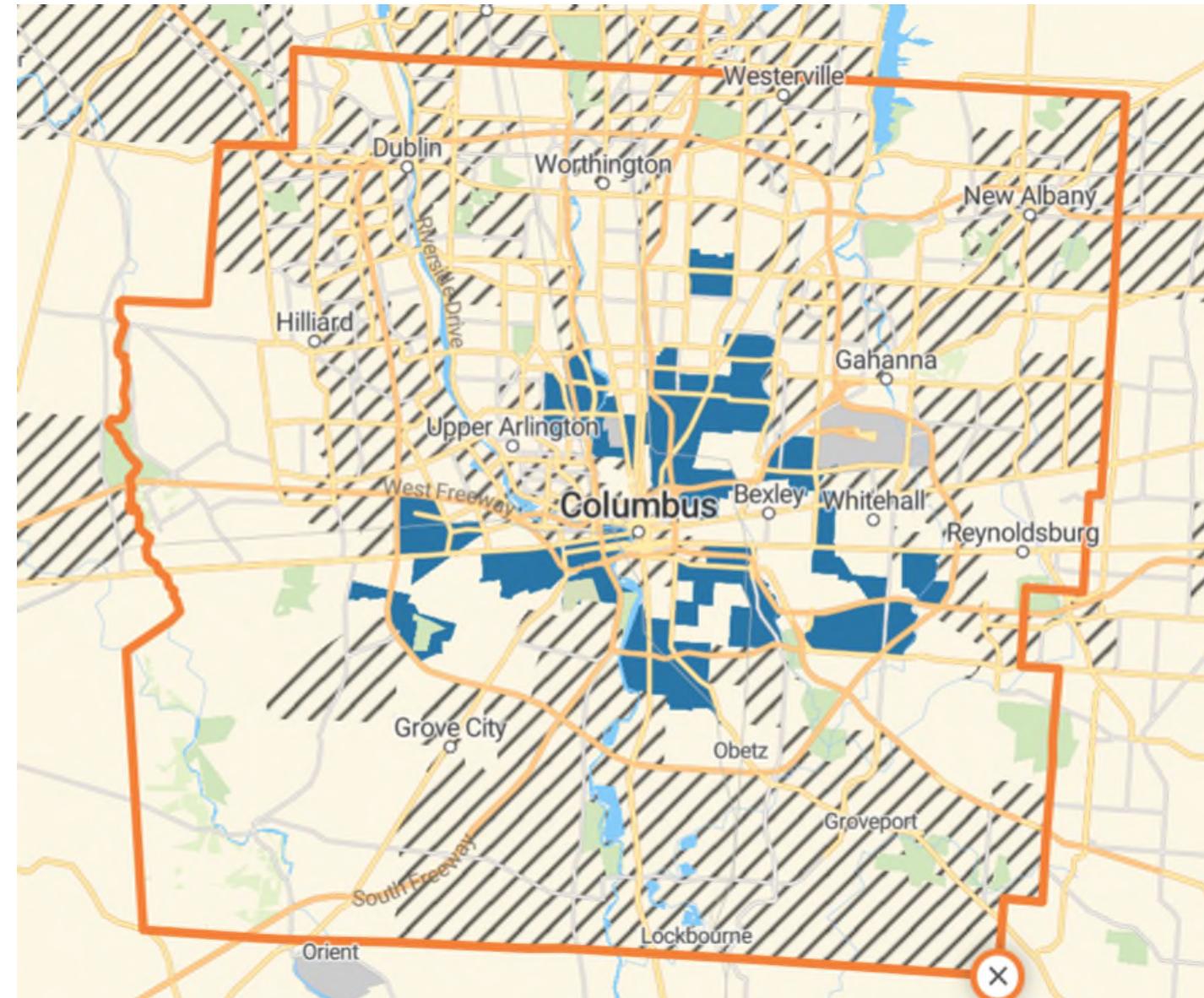
Source: Ice Miller; PolicyMap; Census

# Distance Between Jobs & Low Income Households

Many of the households with \$25,000 in median household income or less do not live in walking distance to major job centers throughout the county.

This spatial mismatch between jobs and low-income income households illustrates opportunities where a low-cost transportation alternative can allow greater access to jobs, or allow incomes to be redirected to another household necessity.

Employment Centers  
(diagonal lines)  
and Low Income Households  
(blue shade)

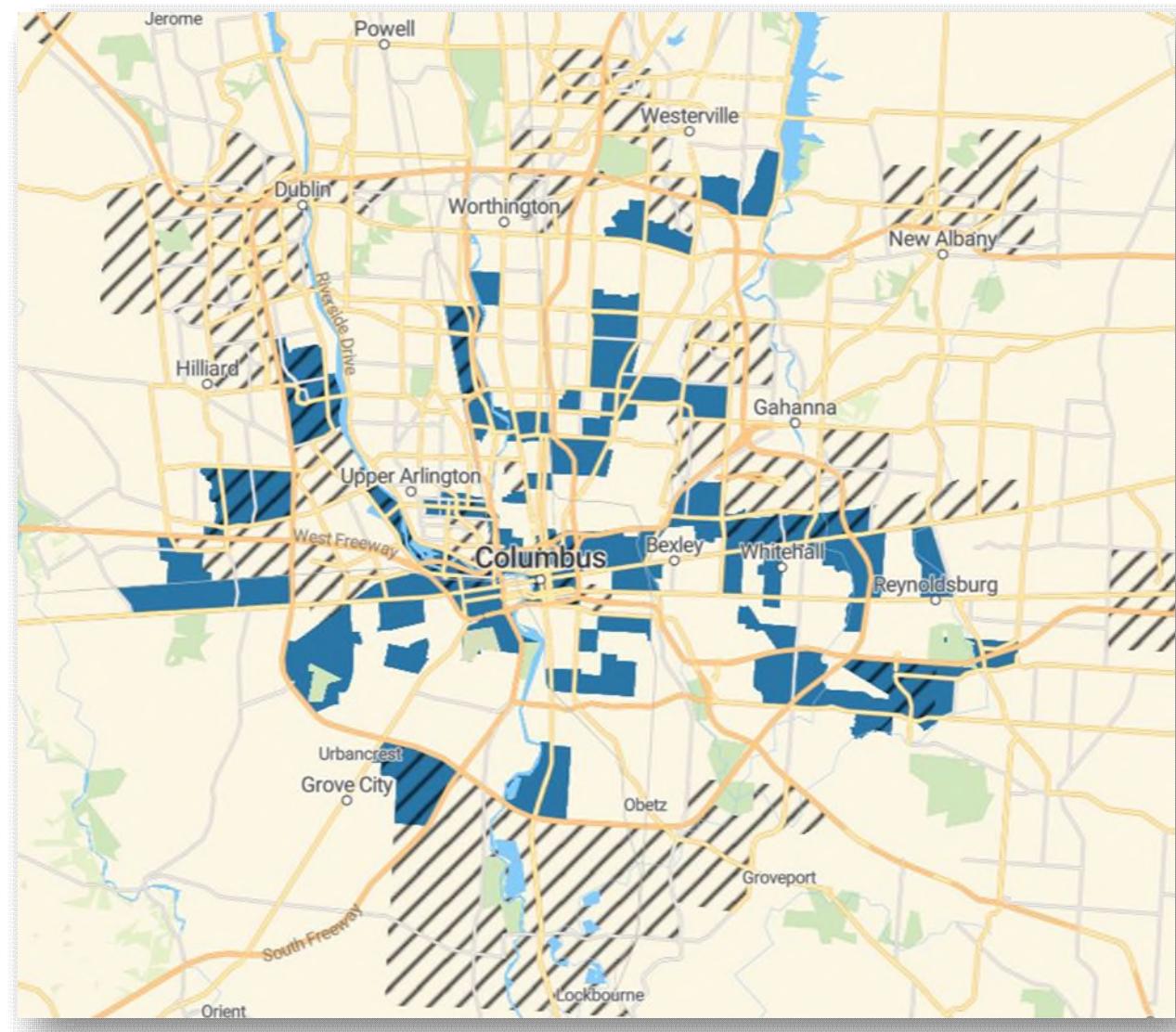


Source: Ice Miller; PolicyMap; Census

# Distance Between Jobs & No-Vehicle Households

Further there are many households that do not live in walking distance to major job centers and do not own a motor vehicle, providing a greater reliance to transit, holding these households captive to transit fare prices as other household necessities are prioritized.

**Employment Centers (diagonal lines) and Neighborhoods with high concentration of households with no vehicle (blue shade)**

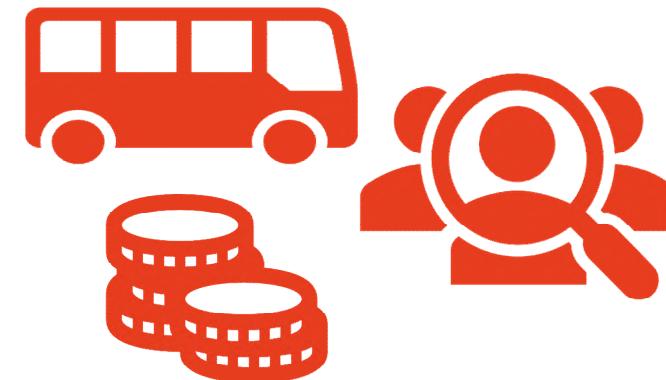


**Source:** Ice Miller; PolicyMap; Census

# Income-based Fare-Free Alternative Examples

**King County Metro (Seattle)** - Starting in October 2020, residents of King, Pierce, and Snohomish counties who are at or below 80% of the federal poverty level and are enrolled in one of six state benefit programs can obtain a subsidized annual pass valid for travel on King County Metro and Sound Transit services. Eligible customers can receive a subsidized annual pass at DSHS, Public Health, and Catholic Community Services across King, Pierce, and Snohomish counties. The six **state** programs include Temporary Assistance for Needy Families (TANF), Refugee Cash Assistance (RCA), Aged, Blind, Disabled Cash Assistance (ABD), Pregnant Women Assistance (PWA)m Supplemental Security Income (SSI) and Housing & Essential Needs (HEN)<sup>35</sup>.

**DC Low Income Fare Pilot** - The District of Columbia is undertaking a program to evaluate the mobility and quality of life benefits that may result from lowering the cost of transit for residents who are recipients of social assistance. For this low-income fare pilot, the District would enter a fare buydown agreement with Metro to fund the fare revenue losses associated with the pilot program. This includes a random selection of 2,500 low income residents. Further, the Massachusetts Institute of Technology's Abdul Lateef Jameel Poverty Action Lab will evaluate the mobility and quality life benefits of the program participants<sup>36</sup>.



# Low Income Households

The table below represents estimated ridership and fare revenue replacement in Low-Income Households, defined as those with Median Household Income of \$25,000 or less. This allocates current ridership to low-income households by taking the total number of low-income households (96,102) and multiplying it by household size (2.47) to get an estimated population of low income residents. The number of low income residents is multiplied by the average transit adoption rate for those making less than \$25,000 in income per year, to arrive at an estimated ridership. Calculated estimated ridership is then multiplied by 95 cents per rider to arrive at revenue replacement estimates. Revenue replacement 2030 assumes annual fare revenue growth of 1.23% (represents the change in fare revenue from calendar year 2018 to 2019). Ridership calculations are then adjusted upward by a Fare-Free factor of 1.33 to illustrate increase ridership in the even of free fare.

	Population	Rides	Revenue Replacement 2020	Revenue Replacement 2030
<b>Fare-Free Transit for All</b>	<b>1,316,756</b>	<b>19,146,510</b>	<b>\$18,209,917</b>	<b>\$26.7m</b>
<b>Current Low-Income Ridership</b>	<b>10,643</b>	<b>155,495</b>	<b>\$147,721</b>	<b>\$169k</b>
<b>Report to Work Ridership &amp; Fare-Free</b>	<b>14,155</b>	<b>206,807</b>	<b>\$196,467</b>	<b>\$225k</b>

# MORPC Corridor Alternative

# West Broad Corridor

graphics from the insight2050 Corridor Concepts Study

The West Broad Street corridor is one if five (5) planned BRT corridors stemming from Downtown Columbus. The Corridor runs from Downtown, along West Broad Street, to Prairie Township.

The insight2050 Corridor Concepts Study prescribes a land use strategy that “prioritizes growth in higher density infill approaching downtown, in Franklinton, and on the Scioto Peninsula, while locating development at moderate densities in large-scale mixed-use areas, including major growth at the former Westland Mall site<sup>37</sup>.” The corridor includes anchor institutions and businesses including the Gravity Mixed-Use Development, Hollywood Casino, Great Western and Westland Shopping Centers and the planned Mount Carmel Health campus redevelopment.



# Corridor Planning

West Broad Street is highly feasible as a near-term advanced rapid transit line, operating within the existing street right-of-way. It is currently undertaking planning and engineering efforts for potential Bus Rapid Transit (BRT) feasibility and additionally, provides for scalability as East Main Street and East Broad Street offer opportunities to connect west Columbus to east Columbus and the east side jurisdictions, in the event a Free Fare implementation should be thoughtfully scaled.

West Broad operates frequent transit service and include COTA's most popular lines. In COTA's NextGen plan (2017), all three (West Broad, East Broad and East Main) were identified through the public process as areas needing enhanced service. Variations of these corridors have also been identified in Connect Columbus and the Insight 2050 Corridor Concepts Study (2019).

The graphic to the right illustrates the benefits of a BRT-enabled land use strategy to the Corridor, including a reduction in greenhouse gas emissions, increases in transit adoption and accessibility, and household cost savings.

Graphic comes  
from the MORPC  
insight2050  
Corridor Concepts  
Study

Prioritizes growth in higher density infill approaching downtown, in Franklinton, and on the Scioto Peninsula. Also locates development at moderate densities in large-scale mixed-use areas, including major growth at the former Westland Mall site.

<b>1.2k</b>	<b>38.8k</b>	<b>46.0k</b>
acres redeveloped	new homes	new jobs

## Transportation - Walk and Transit Accessibility

Average number of regional jobs accessible within 45 minutes by walking and transit

**312,000**

average number of jobs accessible by walk/transit

Compared to Current Trajectory regional average

+ 320%

## Transportation - Transit & Active Mode Share

Share of all household trips taken by transit, walk, or bike

**9.1% transit****32% total non-auto**

Transit, walk, and bike trips

+ 500% transit

## Transportation - Vehicle Miles Traveled

Annual vehicle miles traveled (VMT) per household

**7,800 mi**

annual per household

- 54%

## Greenhouse Gas Emissions

Annual GHG emissions from passenger vehicle travel and residential energy use per household

**11.6 MT**

annual per household

- 19%

## Infrastructure Costs per Acre

Average costs per acre of new development to build, operate, and maintain local roads, water, wastewater, and sewer infrastructure.

**\$364,000**

cumulative per acre

+ 47%

## Tax Revenues per Acre

Average annual revenues from local income taxes, property taxes, and sales taxes per acre of new development

**\$124,000**

annual per acre

+ 790%

## Household Costs

Annual auto and utility costs per household

**\$9,400**

annual per household

savings of \$9,200

65

# Projected Corridor Ridership

Using the West Broad Corridor as an alternative to Fare-Free for all, the table below illustrates increases in current estimated ridership within the corridor associated with: 1) full implementation of BRT along the corridor and 2) a Fare-Free program for all riders within the corridor.

Ridership Adjustments	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Current Estimated Ridership	424,731	424,731	424,731	424,731	424,731	424,731	424,731	424,731	424,731	424,731	424,731
West Broad BRT	424,731	424,731	424,731	424,731	424,731	823,894	823,894	823,894	823,894	823,894	823,894
BRT & Fare-Free	564,892	564,892	564,892	564,892	564,892	1,095,779	1,095,779	1,095,779	1,095,779	1,095,779	1,095,779

Assumes BRT is fully implemented in 2025



# Summary of Alternatives

The table below overviews the potential farebox revenue that would need to be replaced for CY 2020 and looking forward to CY 2030. In the event fare-free transit for all creates challenges for COTA, three subcategories of fare-free transit may be explored.

- ***Report to Work Employees*** – this includes populations with occupations that are not impacted by recent work-from home trends.
- ***Low Income Households*** – this includes households with higher cost burdens due to transportation expenses. This correlates with minority neighborhoods.
- ***MORPC Corridor*** – this deploys fare-free transit to one of the five identified MORPC corridors from the insight2050 Corridor Concepts Study. In this case, the West Broad Street corridor is used for illustrative purposes.

	Population	Rides	*Revenue Replacement 2020	**Revenue Replacement 2030
Fare-Free Transit for All	1,316,756	19,146,510	\$18,209,917	\$26.7m
Report to Work Employee	8,993	131,387	\$124,818	\$142k
Low Income Households (<\$25,000)	14,155	206,807	\$196,467	\$225k
MORPC Corridor (West Broad)	87,368	1,095,779	\$1,040,990	\$1.2m

\* Assumes \$0.95 per ride based on COTA 2019 Fare Revenue and Total Ridership

\*\* "Fare 2030" factors in increased ridership by population growth and impacts to demand resulting from reduced fares.



**IceMiller**