

Prioritizing transportation equity:
Fare-free bus programs in
Lawrence and Worcester, Massachusetts

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Abstract

Many policymakers see eliminating public transportation fares as a tool to increase ridership and provide economic relief to transit-dependent riders.

However, there are limited examples of fare-free programs being implemented in large urban areas. This thesis examines two examples of fare-free programs by studying fare-free bus service in Lawrence and Worcester, Massachusetts.

Through interviews with city officials, transportation agencies, as well as research and advocacy organizations this thesis investigates the implementation process of fare-free programs in these two cities. Findings show that key stakeholders involved in implementing and advocating for fare-free programs place a high value on the expected equity impacts of these programs. The results of this thesis indicate that policymakers and advocates can effectively push for fare-free programs on the basis of equity and the positive impacts such policies will have on the transit-dependent residents of a city.

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Chapter 1: Introduction

While there are many definitions for public transit and a range of conclusions regarding what it encompasses, Jarret Walker's definition from his book, *Human Transit*, fits well for the purpose of this thesis: "regularly scheduled vehicle trips, open to all paying passengers, with the capacity to carry multiple passengers whose trips may have different origins, destinations, and purposes" (Walker, 2012). Arguably, one of the most promising aspects of public transportation is the way in which it has the potential solve many problems simultaneously. Aside from benefits to those who rely on public transportation, there are several overarching goals that policymakers hope public transportation will provide to a city. Widespread use of public transit over single occupancy automobiles has the potential to reduce congestion and help mitigate the negative impacts of climate change (Taylor & Morris, 2014; Sun & Cui, 2018). Businesses thrive when their customers can easily reach them and when business owners have access to a wider variety of talent to staff their workplace (Salvino et al, 2018). These positive externalities make a convincing argument for policymakers to prioritize public transit systems. Not only that, but one's ability to get from place to place with ease allows them to obtain employment, tend to their health needs, and access leisure activities (Teunissen et al, 2013). For those who cannot afford a private vehicle, access to public transportation is necessary for survival, as it allows them to reach their jobs, reach health services, and shop for essential items like groceries. Given these many potential positive impacts, policymakers are eager to encourage public transportation's overall use. One strategy often

considered to increase public transportation use is fare-free public transportation (Grzelec & Jagiello, 2020).

Policymakers have recently considered the possibility of eliminating public transportation fares more seriously, particularly for bus transit. In the Boston area specifically, many local legislative candidates have included fare-free programs or pilots¹ in their platforms, such as mayoral candidates Andrea Campbell, Kim Janey, and Michelle Wu (Lannan, 2021). Fare-free legislation has also been introduced by Massachusetts policymakers at the federal level, such as proposals put forward by Representative Ayanna Pressley and Senator Ed Markey (DeCosta-Klipa, 2020). In spite of this additional interest and increased curiosity about fare-free transit, there are few fare-free programs in operation in the United States, and limited research about the implementation of fare-free programs. Existing work and literature covering public transportation policy has primarily focused on assessing the social equity considerations of public transportation broadly, overall public transit system efficiency, and the distributional impact of various public transportation subsidies (Cadena et al, 2016; Börjesson et al, 2020). While there has been recent interest in different types of fare structures, there are few studies on fare-free public transportation specifically. With the exception of research conducted in Tallinn, Estonia, one of the largest cities in the world that has implemented a fare-free transportation system to date, there is limited

¹ The terms “fare-free program”, “fare-free pilot”, and “fare-free policy” are used throughout this thesis. “Fare-free program” will be used as an umbrella term to refer to any program that eliminates the cost of transit for any reason. “Fare-free pilot” refers to a temporary program that is in place for a limited period of time, as a trial, passed by a legislature. “Fare-free policy” refers to a more formal program that has been passed or is under consideration by a legislative body.

information on the implementation process or goals of fare-free programs (Cats et al., 2016; Galbaldon-Estevan et al., 2019; Kębłowski et al., 2019). Although research exists on the politics around passing other types of transportation subsidies (Hannay & Wachs, 2007; Manville & Cummins, 2014), there is limited research available covering the process of advocating for or implementing fare-free policies, pilots or programs. Furthermore, the limited fare-free programs that do exist cannot be easily evaluated or compared as the scope, beneficiaries, and timeframes of different fare-free programs vary greatly (Grzelec & Jagiello, 2020). There is also limited research into the different strategies used by stakeholders to push forward fare-free public transportation policies or how stakeholders and policymakers prioritize the wide range of goals of public transportation when communicating about or advocating for these policies. Investigation into this topic is crucial as the prioritization of different goals over others could have significant equity implications. Many researchers have noted that who benefits from different types of transportation infrastructure can vary widely depending on the type of policy or infrastructure proposal being put forward (Grengs, 2007; Lubitow et al., 2017).

Given the broad range of positive externalities that public transit aims to address, it is often unclear which specific goals receive prioritization when cities consider implementing a fare-free program. Previous work looking at the purpose of public transportation broadly, separate from the consideration of fares, has certainly had a focus on equity, or a given policy's ability to redistribute resources in order to benefit those most in need. In public transportation literature, there

have been several closer examinations of what equity means within the context of public transportation specifically, for example Cuthill et al (2019) expand the definition of equity to “social equity”, which they describe as “rooted within the concepts of social justice, distributional justice and equality”. But how much consideration is awarded to equity specifically when deciding whether to charge fares or not? Murray and Davis (2001) assert that the consideration of equity as a part of public transportation policy requires a “moral and subjective judgement” which can lead to ambiguity when making an argument for an equity-focused policy. In this way, arguing for efficiency or environmental impacts could be seen as an easier pill for lawmakers to swallow, as the benefits of clean air and reduced congestion are benefits that are felt equally both by those who use public transportation and those who do not.

Lawrence and Worcester, two Massachusetts cities, provide an opportunity to study fare-free transit and the way in which transportation equity may be a part of these cities’ respective processes for implementing such a policy. Lawrence implemented a partially fare-free bus system in 2019, and the pilot has received significant attention both in Massachusetts and beyond as a program that is having a positive impact on Lawrence residents. Worcester, the second largest city in Massachusetts after Boston, has been experiencing a broad grassroots push to make the city’s buses completely fare-free. In fact, it has largely been due to these grassroots organizing efforts that advocates have successfully pressured the transit agency in Worcester to extend the COVID-related fare suspension multiple

times. For this reason, I have chosen to focus on these two cities as case studies to dig deeper into the issue of fare-free public transportation in the United States.

Research Questions

By examining the cases of Lawrence and Worcester, this thesis explores the goals and implementation process of fare-free bus transit and is guided by the following two research questions:

How are the fare-free efforts in Lawrence and Worcester similar? In what ways do they differ?

What do these observed similarities and differences reveal about the conditions required to implement a fare-free policy or program?

While there certainly are many other aspects of fare-free bus programs that deserve investigation in addition to the questions outlined above, these two questions are particularly relevant in the cases of Lawrence and Worcester, and therefore will remain the focus of this thesis. If interest in fare-free public transportation programs continues to increase, as current coverage of these policies indicates it will, the findings presented here could serve as a useful tool for both policymakers and organizers who wish to advance these policies in their own cities.

Fare Free Programs and the COVID-19 Pandemic

It is important to note that the events taking place described in this thesis are ongoing and are certainly not occurring in a vacuum. The exploration of fare-free public transit, while not new, has received increased interest during a time when cities are grappling with an ongoing pandemic, increasing urban inequality, and racial injustice. The pandemic has increased awareness of the divide between essential workers who must work outside the home, at risk of contracting COVID-19 at their place of employment, and workers who are able to work remotely from the comfort of their homes. The impact the pandemic has had on public transit has highlighted how important these systems are in the lives of workers who do not have access to a private vehicle. This increased awareness has provided a window of opportunity in that it has shed light on various disparities that are impacting these workers, many of whom rely on public transportation. This window of opportunity is particularly relevant given that bus fares were eliminated on many RTAs in 2020 in an attempt to reduce the spread of coronavirus, allowing advocates to catch a glimpse of a world where payment was no longer required to use a public bus.

Thesis Structure

This thesis will first examine literature that currently exists covering public transportation policy, with a specific focus on literature that explores the intended impacts of public transportation policies, the various beneficiaries of

public transit, and the ideological conflicts that exist within this body of literature. Because literature on fare-free programs is limited, earlier sections of the literature review will cover transportation literature broadly, separate from fare-free policies. Context and background about the cities of Lawrence and Worcester is then provided, as well as background about how fare-free bus programs began to be considered in the respective cities. Following that, my methodology is presented, describing my two research methods: semi-structured interviews and an analysis of print news.

In the subsequent sections, the findings gleaned from interviews and print news analysis are presented. These findings answer my two research questions, one with a focus on the differences between the two cities' implementation process the second examining what these differences tell us about putting forward fare-free programs. Following this is a discussion section, where the research findings are compared to previous literature and studies that exist on the topic of both public transportation policy and theory, as well as more current literature describing the limited examples of fare free programs in both the United States and abroad.

In the final section, I present the implications this research might have for other cities looking to implement a fare-free policy that is similar to those described in the two case studies. I also lay out some of the limitations of this research, along with recommendations for future study.

Chapter 2: Literature Review

Benefits of Public Transportation

Public transportation is necessary to provide mobility, particularly for low-income people who do not own a car. In addition to benefiting those who use public transportation in order to get around, public transportation services are often touted for providing many additional positive externalities, such as reduced congestion, cleaner air, and improvements to economic development (Li & Joh, 2016; Chatman & Noland, 2011; Sun & Cui, 2018; Mathur, 2014; Abrantes, 2015; Ahmed et al., 2008). Public transportation also contributes to the overall economic health and productivity of an urban area (Deyas & Woldeamanuel, 2020). Access to public transportation systems can enrich a city socially, allowing people to move about the city they live in, visiting friends and family, and allowing workers to participate in business functions such as meetings and conferences via public transportation (Abrantes, 2015). Furthermore, public transportation allows individuals to access educational and employment opportunities that can potentially improve their economic futures (Church et al., 2000; Kenyon, 2011). Public transportation also provides access to many of the amenities that make urban living desirable, such as employment, education, health services, and leisure activities (Ahmed et al., 2008).

While literature on public transportation is expansive and covers many different types of policy measures and impacts, available literature typically refers to public transportation as having two types of positive impacts—impacts on the riders themselves and impacts on society or the urban area more broadly

(Abrantes, 2015; Ahmed et al., 2008). Impacts felt by riders tend to be related to the needs of those who are reliant on public transit, whereas impacts on society consider how public transit may positively impact everyone, both transit users and drivers alike, usually by encouraging increased ridership and reducing the use of personal automobiles. While much of public transportation policy is aimed at improving the lives of transit-dependent users, policies also aim to provide an attractive enough public transit service so that ridership will expand and begin to attract “choice” riders as well, or those who have an alternative to public transit. By attracting more choice riders, public transportation can aid cities in meeting their sustainability goals such as improving air quality and mitigating the impacts of climate change (Cats et al., 2016; Taylor & Morris, 2014). It has been noted that in many circumstances, policymakers tend to focus more on attracting choice riders over improving public transit for the benefit of transit dependent riders. To do this, transportation policy often ends up focusing on funding projects such as light or heavy rail in an attempt to attract a larger customer base and potentially increase ridership overall and move people out of their cars (Taylor & Morris, 2014). However, many critics have noted that these ridership-focused policies ignore riders already regularly using transit, many of whom would benefit from improved service or increased subsidies that make transit more affordable for them (Cuthill et al., 2019; Lubitow et al., 2017; Paget-Seekins, 2011). Examining the different intended benefits of public transit policy and the ways in which these benefits work with and sometimes against each other helps provide a framework

for how advocates and policymakers approach the overall goals of a public transportation system.

Social Equity Benefits of Public Transportation

Spatial Mismatch Hypothesis

A foundational study cited frequently by public transportation scholars is John Kain's spatial mismatch hypothesis, proposed in 1968 (Kain, 2010). In studying job access for Black workers in Chicago and Detroit, Kain argued that segregation combined with the suburbanization of employment made it increasingly difficult for Black workers to get jobs. In the 19th century, US cities tended to be characterized by a central business district, where the majority of jobs were located. However, with the development of new transit modes such as trams, trains, and then the automobile, the population suburbanized, grew in size, and became wealthier overall (Gobillion et al., 2007). As this occurred, job opportunities also started to move outside of cities, and became more accessible to white suburban residents rather than Black urban residents. For example, calculations made by Gobillion et al. (2007), who examined the US labor market in various large metropolitan area show that while the number of jobs overall increased between 1980 and 2000, the proportion of jobs located in urban centers decreased from 57 to 47 percent.

Subsequent literature continued to cite and critique the spatial mismatch hypothesis. Although an early, groundbreaking way to measure spatial equity, research that continued into the late 20th century expanded the definition of the spatial mismatch hypothesis to also consider transportation access. Many

researchers noted that access to employment is not just impacted by distance, as the spatial mismatch hypothesis proposes, but also access to different types of travel modes and travel time to work (Blumenberg & Manville, 2004; Taylor & Ong, 1995). In research conducted in the greater Los Angeles area, Ong & Miller (2005) found that the jobs to population ratio in poor neighborhoods was high, running counter to the original spatial mismatch hypothesis. For this reason, they suggest that the hypothesis has evolved since it was first proposed, and that a more accurate way to refer to the lack of employment access would be “transportation mismatch”. This measurement would not just consider the distance an employee lives from their workplace or potential workplace but would also consider the options available to travel to employment locations using public transit.

Spatial Accessibility, Social Exclusion, & Mobility

Much of transportation research weighs heavily on the consideration of access and how public transportation increases economic opportunity through improving said access. In the literature, the impact public transportation systems have on an individual’s mobility is referred to as “spatial accessibility” (Delmelle & Casas, 2012). This concept investigates how easily public transit users can access everyday necessities, such as employment, healthy food, healthcare, and social activities (Crabtree & Mushi-Brunt, 2013; Vilhelmson, 1999). The result of being unable to reach these basic societal needs is social exclusion, another concept frequently covered in public transportation literature. Levitas et al., (2007) refer to social exclusion as involving:

“The lack or denial of resources, rights, goods, and services, and the inability to participate in the normal relationships and activities, available to the majority of people in a society, whether in economic, social, cultural or political arenas. It affects both the quality of life of individuals and equity and cohesion of society as a whole.”

Put another way, social exclusion occurs when one is not able to reach or participate in the everyday activities that those who have access to a vehicle take for granted, resulting in one’s inability to participate in society (Preston & Rajé, 2007). Attoh’s (2012) research conducted in the city of Syracuse, NY examining the city’s Call-a-bus service for handicapped residents demonstrated the way in which adequate spatial accessibility can work to prevent social exclusion. This research highlighted critiques of activists who vocalized the value of spontaneity and anonymity that bus service is able to provide over ride hail service such as “Call-a-bus” service, which typically requires advanced booking (Attoh, 2012). Accessibility has a wide range of definitions; it could simply be referring to the ability to reach destinations given specific time or space constraints or it could involve more intangible social issues. For example, spatial accessibility could be impacted by racist policies such as housing segregation, which impede access to economic opportunities (Lessa et al., 2019). Literature has also taken spatial accessibility a step further, discussing the concept of mobility, which frames accessibility in terms related to movement and transportation. Mobility refers to an individual’s potential for movement, based on the transportation options available to them (Lessa et al., 2019). In Jarrett Walker’s book, *Human Transit*, he calls mobility “transit’s product” (2012). Mobility, Walker continues, is “one’s

freedom to move beyond their walking range”, and he argues that a quality bus service is one that supports this individual mobility.

Defining Transportation Equity

According to Cuthill et al (2019) social equity is specifically linked to personal mobility and accessibility, and the ease with which residents can access various services and opportunities. Transportation researchers have used various definitions of equity to ground their studies of how different types of transit systems and policies work toward providing mobility that can positively impact individual’s lives. When considering the social impacts of certain transportation policies, Litman (2002) defines equity as “the fairness with which impacts are distributed”. Research often alternatively refers to equity using the terms “justice”, “fairness” or “cohesion” (Monzón et al., 2011). In some cases, public transportation literature has broken equity down further into horizontal and vertical equity. Horizontal equity advocates for an equal distribution of resources for all groups, while vertical equity distributes benefits based on their need (Camporeale et al., 2016). For example, horizontal equity is achieved when all members of the same income class pay the same in taxes, whereas vertical equity is achieved when tax rates are decided based on a household’s ability to pay (Taylor & Norton 2009). Many transportation advocates note that transportation policy tends to follow the principles of horizontal equity, in that all users pay the same fare for the same service. Social equity, defined by Cuthill et al. (2019), is “rooted within the concepts of social justice, distributional justice, and equality”.

Cost Burden of Public Transportation

For low-income transit users, the widespread use of a single-fare payment mechanism makes public transit particularly difficult to afford. A study in New York City that explored the cost burden of fares on their public transit system noted that riders often had to strategize and plan their day around utilizing free transfers, avoiding paying an additional fare (Perrotta, 2016). This concept of strategizing and budgeting in order to reduce the total cost of using transit in a day was also seen in a 2019 MIT fare study (Rosenblum et al.), where low-income riders were found to take 30% more trips when receiving a fare subsidy. In this way, transit accessibility and affordability is connected; as riders choose to eliminate trips in order to cut down on costs their accessibility decreases. Carruthers et al. (2005) define “affordability” in the context of transit as “the extent to which the financial cost of journeys put an individual or household in the position of having to make sacrifices to travel or the extent to which they can travel when they want to”. In addition, for those who have lower incomes, transit fares are a higher proportion of their total income and more of a burden to these individuals (Schein, 2011). Studies have also shown that low-income riders are unlikely to be able to afford unlimited monthly passes, which are almost always more cost effective. In Montreal, low-income riders were found to purchase more weekly passes (as opposed to more cost-effective monthly passes) than median income riders, likely because they could not afford the upfront cost of a monthly pass (Verbich & El-Geneidy, 2017). However, those who advocate for more aggressive investment into public transportation infrastructure often point out that although a public transit system may have a flat fare, public transit is still

inherently regressive, as higher income users tend to use more heavily subsidized transit such as light and heavy rail, while lower income users tend to use buses which often have less of a subsidy (Iseki & Taylor, 2010; Brown, 2018). Furthermore, it is often the case that roadways receive more subsidization than public transit overall (Ahmed et al., 2008). This is yet another way that transportation funding is inherently regressive, since taxes that go towards funding roads primarily benefit car owners, typically of higher income. Often, the impact of this disparity is seen through the different behaviors of riders of varying incomes; transit users who have lower incomes tend to be more responsive to changes in fares or tolls, whereas higher income users are less likely to change their behavior in response to policy changes (Taylor & Norton, 2009).

In an effort to increase revenue or to make up for budget deficits, transit agencies often look to increase fares or reduce service. This, according Taylor and Morris (2014), is likely a relic of a time when public transportation was privately owned and had much narrower goals, namely to minimize costs and maximize revenue. But with public transportation's transition to public ownership, transit agencies are more cognizant of the equity implications that changes such as fare increases and/or service cuts may have (Nuworsoo et al., 2009). The practice of integrating equity into public transportation policymaking decisions signals a major paradigm shift away from how transportation policy has historically been viewed; methods of assessing the effectiveness of transportation infrastructure projects are typically rooted in efficiency and focus on aggregate welfare, rather than the implications for different groups (Nahmias-Biran et al., 2014).

Environmental & Economic Development Benefits of Public Transportation

Policymakers at all levels of government claim that public transportation will have a crucial role to play in the development of more sustainable and livable cities (Fernley, 2013). Existing literature primarily frames transit's ability to help achieve these goals as a question of whether public transit systems can lead to a modal shift out of private vehicles (Kebowski et al., 2019). In this respect, increasing the number of people who opt to use public transportation over a private vehicle is necessary for public transit to have the positive environmental impacts that policymakers hope for, such as reduced congestion and pollution. Promoting the environmental benefits of public transportation often receives widespread support, even from those who do not use transportation themselves (Palm & Handy, 2018). There is research, however, that indicates that generating actual behavior changes that result from transportation policy initiatives is quite rare (Chakrabarti, 2017). In spite of the unlikelihood of a behavior change among current auto users, immense efforts on the part of governments goes into designing transportation systems that will result in a significant modal shift that will help curb pollution and reduce congestion. Taylor and Morris (2014) note that as public transportation has shifted to government control from the private sector, policymakers have taken an increased interest in ensuring that the benefits of public transportation reach a wider group of constituents. In some cities, achieving sustainability goals is intrinsically tied to the effectiveness of their public transportation systems (Bibri & Krogstie, 2020).

In addition to intended environmental benefits of public transportation systems, many local policymakers hope to see increased economic development and property values as a result of transportation infrastructure. A study in Austin, Texas indicated that public transit investments, when made in tandem to bike infrastructure, had the ability to increase the price of real estate in the city (Li & Joh, 2016). The impact that transit improvements can have on the economic vitality of an urban area can also improve the overall standard of living and help attract more residents (Sun & Cui, 2018). But focusing on these benefits can come at a cost for transit-dependent individuals, particularly when they prioritize the needs of speculative developers over the more universal public transportation needs of a municipality (King & Fischer, 2016). With limited funds available to support public transportation projects, the ways in which equity, sustainability, and economic goals are balanced have a major impact on public transportation policy initiatives.

[Navigating Various Public Transit Policy Initiatives](#)

There are numerous public transit initiatives, most of which come in the form of some sort of subsidy, that have varying effects on promoting public transportation's goals. Specifically, these policy initiatives vary considerably in how they promote equity. Transit subsidies come in many different forms, but in general, subsidies refer to the difference between a public transit trip's production cost and its fare (Börjesson et al., 2020). Overall, subsidies implemented for public transportation can be categorized into two groups; infrastructure subsidies

or subsidies that go directly towards individual transit users. There are a wide variety of different public transit subsidies being deployed by various cities throughout the globe. For example, in Chile, a direct transfer in the form of actual cash compensation for riding public transit is awarded to riders. In other cities concessionary fares are utilized, wherein certain riders take transit for free or at a reduced rate (Serebrisky et al., 2009). In Stockholm, Sweden, as well as in many other cities throughout the world, a subsidy in the form of a flat fare is offered, meaning the fare is uniform across distance or time of day (Börjesson et al., 2020). It can sometimes be due to a partnership between a city and a transit company that a subsidy is employed, such as in Buenos Aires, where bus operators receive a transfer from the government directly, in an effort to keep fares low for riders (Serebrisky et al., 2009). Typically, the main goal of these subsidies is to instigate a behavior change that leads to more transit usage and less private vehicle usage, although recently, with increased public transportation activism, subsidies take a more direct aim at tackling equity problems in cities.

Public Transportation Subsidies: “Carrot” vs. “Stick” policy approaches

Transportation research often touches upon the way in which public transportation policies, particularly those intended to cause a behavior change, utilize either a “carrot” or “stick” approach. In thinking about public transportation more specifically, a “carrot” would constitute a policy that invests in public transit to improve service, make it more affordable, or provide a tax incentive for using public transit. A “stick” approach would be a policy such as a

congestion toll, fuel tax, or ownership fee (Anas & Lindsey, 2011). Most policymakers argue that a behavior change is most likely to occur in response to a policy that incorporates a combination of both “carrot” and “stick” style approaches, rather than one “silver bullet” policy (Dijk et al., 2018). For this reason, there is considerable skepticism regarding whether fare discounts or suspensions can influence a behavior change.

In general, fare-specific, “carrot”-style subsidies can be politically sensitive and are a frequent topic of debate among policymakers. Many of the arguments in favor of fare-focused subsidies have been covered extensively in public transportation literature. One potential benefit that is frequently cited is the Mohring effect, which argues that as more people use public transit it becomes more efficient in order to accommodate additional users (Gómez-Lobo, 2014). There is also the argument that public transit’s benefits reach everyone since they reduce congestion and air pollution, and that eliminating fares to encourage more people to use transit will have impacts on even those who do not end up switching to public transportation (Basso & Silva, 2014). However, scholars who argue against subsidies claim that the positive impact of such subsidies is negligible and that implementing a reduced fare or fare-free program may result in making public transportation inefficient due to increased demand, crowding, and an overall burden on the system (Grzelec & Jagiello, 2020). Many studies note that ridership increases seen when subsidizing transit only come from an increase in trip frequency of those who already use transit regularly, known as transit-dependent users (Cats et al., 2016). Although there is conflicting literature

regarding whether transit subsidies can lead to a widespread modal shift, there is significant research that subsidies that target transit-dependent users can be very successful at increasing rides for this group specifically. For example, a randomized control trial in Santiago, Chile, where workers were given a free travel pass for two weeks, resulted in an increase of 23% in the total number of off-peak trips (Bull et al., 2021). Similarly in a 2019 MIT study, randomly selected, low-income riders who received a 50% discount on their transit passes took about 30% more transit trips compared to a control group (Rosenblum et al., 2019). These fare adjustments undoubtedly improved the lives of participants who already were used to using public transportation, but these studies were unable to show that automobile users were willing to change their behavior. In Tallinn, Estonia, a push to implement a fare-free transit policy for all registered Tallinn citizens, though eventually successful and popular in public surveys, was still met with meaningful pushback (Gabaldón-Estevan et al., 2019). Many thought the plan was short sighted and failed to address the traffic problems it was aimed to solve. It was proposed that instead the city should focus on decreasing the number of private parking spots (Gabaldón-Estevan et al., 2019). Other critics were concerned about the fact that the free fares were only available to Tallinn residents. While this specific part of the policy was meant to encourage more people to move to the city of Tallinn, thus boosting tax revenue to offset lost fare revenue, many claimed that by implementing the policy in this way there would still be significant congestion caused by suburban commuters who were not residents (Keblowski et al., 2019). With only social welfare arguments to support

subsidies and without evidence of a significant modal shift out of personal vehicles, advocates for public transit subsidies are often met with significant opposition.

Transit Dependent Vs. Choice Riders

Exploring different subsidies and the degree to which they produce a desired outcome often leads policymakers to ask themselves a difficult question: What is the purpose of public transportation? Grengs (2007) discusses this consideration in the context of the grassroots transit equity lawsuit that took place in Los Angeles in 1994, where the Bus Riders Union sued the Los Angeles Metropolitan Transportation Association (LA MTA) for unequal investment towards a new heavy rail commuter train over investment in the bus system. The commuter train was intended help promote non-automobile travel among choice riders, or those who have another transit option such as a car, in the hopes of reducing congestion and improving air quality. The Bus Riders' Union, made up of a diverse coalition of bus riders, claimed that not only was the sales tax that was intended to pay for the new heavy rail system regressive, but that putting the funds obtained from the tax towards a heavy rail system instead of improving the bus system was discriminatory towards the majority minority and low-income bus riders (Grengs, 2007). This reflects a common pattern seen in public transportation policy. Often, when deciding which transit systems to put resources towards policymakers end up choosing between transit dependent and choice riders (Paget-Seekins, 2011). In many cases, transit planners are more likely to

cater to the needs of choice rider commuters at the expense of more vulnerable transit-dependent riders (Lubitow et al., 2017). The tendency to craft policy aimed at people who are not current transit riders leads to confusion about the goal of public transportation. As explained by Taylor and Morris (2014):

“This political dynamic also explains transit’s ‘mission creep’. To appeal to the voting public as a whole, transit supporters must stress the benefits transit will have for non-riders. Those non-riders have a multiplicity of interests and values, and thus crafting an appeal to them means adopting a range of catch-all arguments that collectively move transit down a slippery slope into the goal ambiguity trap”.

Catering to choice over transit-dependent riders leads to a frequently heard critique; by focusing on the sustainability or economic benefits of public transportation, the needs of low-income transit users, already dependent on transit service, are ignored. This can result in exacerbating the social exclusion that many transit-dependent commuters already experience (Lubitow et al., 2017).

There is still not complete agreement on how severe this dichotomy is, however. Some studies do note that there are, in fact, many commonalities that exist between transit dependent and choice riders, and that there are still ways to ensure their multiple needs are met with one policy solution, it is just a matter of finding policy solutions that meet multiple goals simultaneously (Paget-Seekins, 2011). A TransitCenter report (2016) notes that the dichotomy itself has negative consequences, as it often results in prioritization of choice riders’ needs in order to have the greatest impact on ridership numbers. However, studies show that transit-dependent riders are made up of a variety of groups, such as people with low or unreliable incomes, disabled individuals, older and younger individuals,

single parents, and people of color (Department for Transport, 2013), and in focusing on transit-dependent riders policymakers can make a substantial impact on a diverse subset of the transit-riding population.

Fare-Free Public Transportation Policy Considerations

While there has been ample research into the economic and sustainability impacts of various transportation policies, research into these policies is rarely devoted to analyzing the efficacy of fare-free public transit policies specifically (Kębłowski, 2019; Cats et al., 2016). Even so, there has recently been robust debate at the local level regarding whether to implement fare-free public transit systems in an attempt to boost ridership (Barry, 2020). These local level arguments seem to revolve around three main policy categories: economic viability, sustainability, and social justice (Kębłowski, 2019). Many economists question whether it is economically efficient to introduce a fare-free public transit system into a city. They argue that in order to be successful, transit agencies must function in a way that resembles for-profit entities, which are subject to market-driven desires of customers (Fearnley, 2013; Kębłowski, 2019). There is also the question of whether a fare-free policy alone will result in enough of a mode shift to see reductions in congestion and automobile pollution. A recent study in China that examined whether a fare-free policy could help encourage riders to return to public transit in the wake of COVID-19 concluded that a fare-free policy would have the most impact when packaged together with other policies that aim to increase public transit ridership (Dai et al., 2021). Some researchers also argue

that if the purpose is to change passenger behavior, a fare-free policy can end up being detrimental to this goal by causing overcrowding and slowing down service, making public transportation less desirable (Fearnley, 2013; Kębłowski, 2019).

A second element of the fare-free public transit debate involves how effective the policy is at solving sustainability problems in urban areas. Many policymakers argue that if a city's goal is to reduce traffic and congestion caused by private vehicles, eliminating fares on public transit might not be as effective as imposing restrictions on driving itself, through tolls, parking fees, or increased gas prices (Kębłowski, 2019). Furthermore, it is unclear if eliminating fares is necessary; improving service might be more effective. Examining whether the fare-free policy was a part of a broader renewal project is an additional consideration that can go into how much of a modal shift will end up occurring from a given policy.

Finally, critics and proponents of fare free public transit disagree on how much eliminating fares truly creates more socially and economically just cities. Widely seen as the primary reason for eliminating transit fares in the first place, many advocates campaign for fare-free policies because they claim they increase accessibility to transit for lower-income individuals (Kębłowski, 2019). These policies are praised for eliminating social exclusion, inequality, and transport poverty (Kębłowski, 2019). In the case of Tallinn, Estonia, after implementing a fare-free system, 40% of unemployed survey respondents felt that their job prospects were improved by the fare-free option, compared with 31% that did not think it had an effect and 4% who felt it had a negative affect (Cats et al., 2016).

But it is often proposed that policymakers should means-test to establish an equitable fare structure, so that those who can pay do, while those who have lower incomes do not. Research conducted in Los Angeles indicates that creating a fare structure that lowers the cost of public transit for low-income riders and implementing a cost structure based on distance travelled would be a more impactful way to redistribute the cost of public transit to those who can most afford it (Brown, 2018). However, some policymakers worry that means-testing fares by asking those with higher incomes to pay more will only encourage higher-income transit users to use micro-transit alternatives such as private rideshares or coach commuter services (Alosi, 2015).

In general, when policymakers argue against fare-free transit, they are making a utilitarian argument against it; it hinders economic growth and is inefficient at achieving the goals it set out to achieve in its' own right. Arguments in favor of fare-free public transportation, in contrast, focus on the many positive externalities that will result from such a policy, such as reduced congestion and improved air quality. However, there is a wealth of research that frames fare-free public transit as an important policy to improve equity, arguing that public transit is not a commodity, rather it is a “common good” similar to public parks, school, or roads (Kębłowski, 2019). Even so, it is clear from literature and the continued debate about public transit fares that a focus on equity does not always result in full-fledged support for fare-free programs.

Chapter 3: Context and Study Area

This thesis explores two cities that have received recent attention due their consideration or implementation of fare-free bus service in Massachusetts: Lawrence, a mid-sized city in northeast Massachusetts, and Worcester, the state's second largest city after Boston located in central Massachusetts. The nonpartisan research organization, MassInc, considers both cities “Gateway Cities”, which they define as “a midsize urban center that anchors regional economies around the state” (MassInc, n.d.). These communities were previously home to large manufacturing companies that provided a “gateway” to the middle class for workers and their families. Lawrence and Worcester have median household incomes of \$44,613 and \$48,139 respectively, compared to the statewide median income in Massachusetts of \$81,215 (United States Census Bureau, 2019b).

Lawrence, a former textile-mill town, is located 30 miles north of Boston (Porter, 2020). 21.4% of Lawrence residents live below the poverty line (U.S. Census Bureau, 2019a). 80% of the population identifies as Hispanic or Latino. The city has recently gained acclaim for undergoing an economic recovery of sorts. In 2011, the city was under state receivership due to poor public school performance—test scores were in the bottom 1% of Massachusetts rankings and the dropout rate was three times more than the state average (Glenn, 2021). Today, though, incomes have increased, the dropout rate has decreased, and the city has seen real estate prices go up (Porter, 2020; Glenn, 2021). 25% of Lawrence households do not own a motor vehicle (Corley et al., 2020).

Although Worcester is the second largest city in Massachusetts, it is still closer in size to Lawrence than it is to Boston, the largest city in the state. Worcester has a total population of 185,428 people (United States Census Bureau, 2019c). 18% of the city’s population does not own a motor vehicle (Corley et al., 2020). In addition, with a median household income of \$48,139 and 20% of the population living below the poverty line it possesses similar demographic characteristics to Lawrence. The city has been undergoing significant efforts to revitalize its’ downtown and attract young, skilled workers to support the growing business community that exists there. Worcester is also the home to twelve universities and has a robust manufacturing sector. A notable recent development in the city is the arrival of a minor league baseball team, the Worcester Red Sox, whose stadium will be a part of a substantial downtown development effort (Young, 2021).

Table 1. Worcester and Lawrence Demographic information

	<i>Worcester</i>	<i>Lawrence</i>	<i>Massachusetts</i>
Population	185,428	80,028	6,892,503
Population per square mile	4,844.5	11,027.6	839.4
Households without a motor vehicle	18%	25%	N/A
Median Household Income	\$48,139	\$44,613	\$81,215
Percentage of residents below the poverty line	20%	21.4%	9.4%
Land area	37.37 sq miles	6.93 sq miles	7,800.06

Bus Transportation in Lawrence and Worcester

The Worcester Regional Transit Authority (WRTA) was established in 1974. Although the municipalities it serves control the authority through an advisory board, there are certain oversight privileges still granted by the Massachusetts Department of Transportation, or MassDOT (Commonwealth of Massachusetts, 2018b). Per Chapter 25, the WRTA is run by an administrator who is responsible for the agency's day to day operations. An advisory board, made up of one member from each of the 36 communities the WRTA serves, hires this administrator and has the final say over fares, services offered, and major capital purchases. The WRTA contracts its' service out to First Transit, Inc. for both its fixed-route and on demand services (Commonwealth of Massachusetts, 2018b).

Lawrence's bus system, the Merrimack Valley Regional Transit Authority (MVRTA), operates under the same state laws that govern the WRTA. It serves 16 communities and is similarly governed by an advisory board and managed by an administrator, hired by the advisory board (Commonwealth of Massachusetts, 2018a). Established in 1974, the MVRTA originally was created to service the City of Haverhill, which is just north of Lawrence, but has since expanded to serve a total of 15 communities (Merrimack Valley Regional Transit Authority, n.d.).

Table 2. WRTA and MVRTA comparison

	WRTA	MVRTA
Full fare price per ride	\$1.75	\$1.25
Farebox Revenue Percentage	14% in 2018	12% in 2018
Estimated cost of fare free program or proposal	\$3 Million	\$250,000

Implementation of Fare-Free Programs in Lawrence and Worcester

Lawrence implemented its' fare-free bus pilot in September of 2019. To fund the program, the city contributed \$225,000 to the Merrimack Valley Regional Transit Authority, the estimated amount required to make up for the fare losses the agency would see as a result of making three bus lines fare-free for the next two years (Mohl, 2019). The routes they designated as free were the 34, 37, and 85, which are typically the busiest lines in the city. They stop at several key locations that many Lawrence residents work and frequent often, such as the hospital, a technical school, the council on aging, and the city's major business district (Mohl, 2019). Following the fare-free implementation, the city received substantial press coverage, with articles about the program appearing in the Boston Globe, New York Times, and the Wall Street Journal.

Worcester's push for a fare-free bus system started in the spring of 2019, although even before the fare-free push there was a strong public transportation organizing and advocacy community in the city. Separate from this effort, however, the pandemic forced the WRTA to move to all door, fare-free boarding in March of 2020. This decision was largely driven by pressure from the bus drivers' union. Even so, public transportation advocates in the city have seized on

the opportunity, organizing around maintaining the suspension, in the hopes of turning it into a more formal pilot program. Unlike other RTAs around the state, most of which resumed collecting fares in the summer of 2020, the fare suspension has continued through the entire pandemic.

Although receiving praise in national press outlets, there are few regional transit agencies in Massachusetts that have attempted to implement a similar fare-free model. The nearby Lowell Regional Transit Authority said their resources are already stretched thin, and it is unclear where they might be able to make up the lost farebox revenue (Melanson, 2020). For the most part, fare-free bus systems in the United States are rare. One example of a fare-free bus system in the United States that does exist is in Olympia, WA. Olympia eliminated fares on select bus routes in early 2020, launching the Zero-Fare Demonstration Project which was two and half years in the making. The fare-free routes in Olympia are funded through a sales tax which passed by ballot measure. Olympia officials say they do not necessarily consider the city's policy to be "free" buses, rather they state that their residents are pre-paying while shopping, since their own sales taxes go into funding the program (Banse, 2020).

Since fare-free is a somewhat new phenomenon, it is no surprise that there has been such significant interest in the press about fare-free efforts occurring in Lawrence and Worcester. There is particular interest from nearby Boston, where the transportation advocacy community has also been considering fare-free buses as a way to increase ridership while alleviating a financial burden for bus riders (Lanan, 2021; MilNeil, 2021). In many ways, these neighboring advocates and

lawmakers are looking to Lawrence and Worcester to help make the case for a fare-free bus program in Boston, which would be the largest agency to date to implement such a program.

Chapter 4: Methods

Interviews

To learn more about the implementation of fare-free routes in Lawrence, and to understand the evolving fare-free push in Worcester, I conducted interviews with representatives from advocacy and research organizations, city offices, and transit agencies. These semi-structured interviews were intended to provide information about the implementation process and goals of a fare-free program in the interviewee's respective cities. In investigating the implementation process, I hoped to learn more about how advocates and cities had pushed for fare-free transit and to find out what key players were involved. Then, in looking into the goals of the program, I hoped to learn more about how integral equity was in driving policymakers and advocates to push for a fare-free program in their respective cities. The interviews were intended to gain insight into the overall perspective of the organization that the interviewee worked for or was a part of, and not their individual goals or opinions about fare-free transit. To do this, I framed my interview questions in a way that asked about the intentions of the organization as whole, rather than as questions seeking to understand the opinion of the individual interviewee. Conducted virtually through Zoom video calls, interviews varied in length, but ranged from 30 minutes to one hour. All

interviews were recorded using the Zoom recording feature after receiving permission from the interviewee. Questions focused on the public transportation needs of the constituents their organization served, and how a fare-free policy might impact city residents. My questions also focused on the goals of a fare-free policy and what potential challenges or opposition might exist. These questions varied depending on whether a fare-free pilot had been implemented already (such as in Lawrence), or whether this pilot was specifically being pushed for but had not yet been implemented (such as in Worcester).

Selection of Organizations & Offices

I interviewed representatives from organizations and offices that fell into three categories: transportation advocacy or research organizations, municipal offices either elected or appointed, and government transportation agencies. For transportation advocacy or research organizations, I not only spoke with representatives from the Worcester and Lawrence areas, but also with representatives who served the Greater Boston area, or Massachusetts more broadly. I based my initial outreach decisions on press coverage about the fare-free policies in both areas. In conducting initial research about the two cities and fare-free busing, several organizations, offices, or elected bodies were mentioned frequently, so this is where I began my outreach. From there I used snowball sampling to obtain additional contacts based on recommendations from my early interviewees.

As I expected, it was significantly easier to get in contact with research and advocacy organizations rather than city government. Many city officials were

unavailable to speak with me, as they were currently coordinating the response to the pandemic and the forthcoming vaccination effort. Furthermore, because the fare-free bus policy in Lawrence was a policy initiative driven almost solely by the Mayor's office, I was unable to get in contact with an advocacy or research organization in the Lawrence area that felt they had contributed enough to the pilot to participate in an interview.

A notable result of my snowball sampling in Worcester was that many interviewees recommended I speak with organizations whose sole focus was not transportation. It was recommended that I speak with a public health organization, the Mass Audubon society, as well as a youth and family service organization. This speaks to the coalition-driven effort that took place in Worcester to push for fare-free buses.

When my interview process was complete, I had conducted 19 interviews in total. Of these interviews, 12 were advocacy or research organizations, 4 were city officials, and 3 were associated with transportation agencies or advisory boards. 11 interviewees worked in Worcester, 3 worked in Lawrence, and 5 were either located in the Metro Boston area or considered their organization statewide and/or nationwide.

Interview Analysis

To analyze my interviews, I utilized thematic analysis. This method lent itself well to my two research questions, one of which was focused on comparing process and implementation and the other of which was focused on goals and intentions. In analyzing my interview data, I used an inductive approach, similar

to that described by David R. Thomas (2006). Thomas explains that the purpose of this approach is to “allow research findings to emerge from the frequent, dominant, or significant themes inherent in raw data”. Using this approach allowed me to let themes emerge as I created my analysis categories, rather than beginning my analysis with a pre-determined set of themes.

Print News Analysis

To supplement my interviews, I also completed an analysis of print news. I searched for articles using the search sequence “fare-free” or “fare free” and “bus” and “city name”. Almost all articles were from local outlets, such as the *Worcester Telegram and Gazette*, *Lawrence’s Eagle Tribune*, and *The Lowell Sun*. In addition, there were a handful of articles covering the fare-free program in Lawrence that received more widespread attention. In this case, I chose to include articles from *The Boston Globe*, *The New York Times* and *The Wall Street Journal*, as the significance of this coverage seemed noteworthy. In total, I analyzed 57 articles. Articles were selected if their main focus was a fare-free program itself or advocacy around fare-free programs in general, in either Worcester or Lawrence. Articles that only briefly mentioned the city’s bus service or the ongoing debate regarding the bus were not included. While there was significantly more coverage of the fare-free push in Worcester, likely since this push involved an ongoing conflict between advocates and the transit agency, Lawrence had the most coverage outside of the city. To analyze print news, I

created analysis categories to pick out repeat themes seen in the articles, using a similar inductive approach as the one I used when analyzing interviews.

Research Limitations

As noted in my interview methodology, getting in contact with representatives from advocacy or research organizations was significantly easier than getting in contact with representatives from city government. With the ongoing response to the coronavirus pandemic as well as the current execution of the vaccination program, many officials did not have the time available to be interviewed. In addition, by leaning heavily on snowball sampling to select interviewees and because of the coalition building that was a large part of the fare-free bus effort in Worcester, advocacy organizations tended to have more recommendations for interviews than city officials or transit agencies. It is likely that interviewees, particularly at advocacy organizations, would recommend a like-minded organization as an interview subject.

For these reasons, my interviews are not a representative sample of the organizations that were involved in the fare-free efforts in Lawrence and Worcester. While the organizations provided valuable insight into the advocacy efforts and implementation process for advancing fare-free bus policies, it is possible that due to my snowball sampling methods, certain key voices were missing from the conversations and a specific group of voices was amplified over others. Furthermore, my position as a student talking in a recorded interview session might have influenced the answers of interviewees as well, who may have

wanted to emphasize the equity benefits of the described policies. In addition to being a student, I also am not a member of the Lawrence or Worcester community, which could also influence how interviewees responded to my questions, since these interviews involved sharing information about city policies and agendas with me, an outsider.

Chapter 5: Findings

Interviews with representatives from organizations involved in the process of implementing a fare-free program in Lawrence and Worcester focused on two areas; (1) examining the process of pushing for fare-free transit and finding out the key players who were involved and (2) exploring the differences and similarities seen in the implementation process and stated goals of each city's program. As noted earlier, my interviews are not a representative sample of all actors involved in the fare-free programs in each city. Interview results lean heavily on information provided from advocacy organizations, particularly in Worcester. However, many key organizations who played an integral role in the process of pushing for a fare-free program were interviewed, which helped to provide context and insight into the processes that took place to push for fare-free transit in each city. The following findings section has two parts; the first describes the advocacy and/or planning process that has taken place as a part of a fare-free program, looking at differences in strategy and key actors. The second part shares themes that interviews revealed about the goals and intended outcomes of these policies.

Part I — Implementation and Advocacy Process

Comparing Lawrence and Worcester reveals two very different paths towards instituting a fare-free policy. In each city, different groups of officials and advocates were involved. In Lawrence, the effort was driven almost completely by government officials, and primarily by the Mayor himself. In Worcester, the

fare-free effort has involved a multi-stakeholder coalition of various nonprofits, advocacy groups, research organizations, and some elected officials, requiring more consistent outreach and public engagement. This coalition evolved and grew over time while continuing to put pressure on the WRTA to maintain the pandemic fare suspension policy. To help show the different sequences of events, timelines of how events unfolded in each city are included below (Table 3 and Table 4).

Lawrence – A targeted focus on bus service from the Mayor’s Office

Mayor Rivera’s more direct involvement in the city’s public transportation program goes back to his first year in office in 2014, when he began serving on the MVRTA advisory board. Replacing the City Attorney in the advisory board role, Rivera recalls that after he joined the board, they were very focused on efforts to use the bus system as “an economic development tool” for the region. For example, early in Mayor Rivera’s tenure, Route 85 was created, which travels right through downtown Lawrence’s central business district. This became a critical route for Lawrence residents, as this route connects residents to destinations such as grocery stores, employment, doctor’s offices, or the downtown city offices. Later, when the fare-free program was implemented, route 85 would be one of the three routes to go fare-free.

Table 3. A timeline of fare-free bus service in Lawrence

Lawrence Timeline	
Date	Event
February 2014	Mayor Rivera elected chairman of the MVRTA advisory board
July 2014	Route 85 downtown shuttle added to MVRTA service
Fall 2018	Mayor Rivera and Administrator Costanzo begin discussing eliminating bus fares
June 2019	The Lawrence City Council votes to eliminate fares on routes 34, 37, and 85 for 2 years: 9/9/2019 – 9/30/2021
December 2020	The Lawrence City Council votes to eliminate fares on the same three routes for 2 years a second time: 9/30/2021-9/30/2023

Worcester – Research and Involvement of a City Councilor

Worcester’s path to a fare-free program is much less direct than Lawrence’s but involves a larger bench of key actors. During interviews, when asked about their organization’s involvement in fare-free programs in Worcester, many organizations traced their collaboration with the fare-free coalition back to two major events in the city. Unlike Lawrence, where the initial idea for a fare-free program came from the Mayor’s office, the idea for a fare-free program in Worcester, while previously discussed in the transit advocacy community, went mainstream through a report from a local research organization. In May 2019 the Worcester Regional Research Bureau (WRRB) released a report titled “The Implications of a Fare-Free WRTA”. In this report, the bureau laid out the case for eliminating fares on the entire system. Primarily focusing on increasing ridership and eliminating fares to make the system more efficient, the report touches on the high overhead associated with collecting fares and the negative

impact that raising fare prices and cutting routes can have on ridership when implemented to balance the budget (Worcester Regional Research Bureau, 2019).

The second event that sparked renewed interest, not just in a fare-free pilot but in the bus system overall, came just days after the release of the WRRB's report. Worcester City Councilor At-Large Gary Rosen filed a hearing order to investigate how well the WRTA was serving residents' needs. In the hearing order, Rosen described the WRTA service as "inefficient, underutilized, taxpayer-subsidized, and possibly obsolete". Rosen recalls, "My order, that made quite a fuss here in Worcester". At the time, local news characterized Rosen's statement as the start of the push to shut the WRTA down. But Rosen shares that that was not his intention. According to him, the comment was meant to raise awareness about the low ridership on the buses, which he had noticed while standing on Worcester streets, campaigning for his re-election. Like Mayor Rivera, Rosen would also end up sitting on the advisory board of the transit authority. In 2019 the previous Public Service and Transportation Committee chair in Worcester did not seek re-election, leaving the committee chair position open. To fill this available seat, the Mayor of Worcester appointed Rosen as chair of the committee. Several months later, the City Manager appointed Rosen as Worcester's representative on the WRTA Advisory Board as well.

Table 4. A timeline of fare-free bus service in Worcester

Worcester Timeline	
Date	Event
May 2019	Worcester Regional Research Bureau publishes “The Implications of a Fare-Free WRTA”
May 2019	Worcester City Councilor At-Large, Gary Rosen files hearing order calling the WRTA bus service “possibly obsolete”
August 2019	Fare-Free Exploratory group (later named Zero Fare WRTA) hosts forum on a fare-free system
January 2020	Worcester City Councilor At-Large Rosen and District 4 Councilor Sarai Rivera submit hearing order requesting that hearings be held on fare-free bus service
January 2020	Councilor Rosen appointed to WRTA advisory board
January 2020	Worcester Regional Chamber of Commerce comes out in support for fare-free buses
February 2020	First hearing on considering fare-free buses in Worcester held
March 2020	WRTA Advisory Board suspends fare collection to allow for all-door boarding as a result of pressure from the Bus Drivers’ Union
June 2020	WRTA Advisory Board votes to maintain the fare suspension
September 2020	WRTA Advisory Board votes to maintain the fare suspension again, until December 2020
November 2020	Worcester Regional Research Bureau releases “Addendum to ‘Implications of a Fare-Free WRTA’”
November 2020	Zero Fare WRTA virtual forum held, panelists include State Sen. Harriette Chandler, State Rep. David LeBoeuf, Lawrence Mayor Dan Rivera, Boston City Councilor Michelle Wu
December 2020	WRTA advisory board meeting postponed until January
January 2021	Advisory board vote on Fare-Free buses postponed until February
February 2021	WRTA votes to extend fare suspension until June 2021

Lawrence – Collaboration with the MVRTA

Interviewees in Lawrence emphasized that the idea for a fare-free program was initiated by the Mayor's office. In year 6 Mayor Rivera's tenure, he proposed using "free cash", or excess funds that have accumulated at the end of a fiscal year, to fund a fare-free pilot. Having already used "free cash" for several other initiatives, such as fixing baseball fields, purchasing equipment, and replacing public safety vehicles, the office began to consider other potential uses for these surplus funds. Through discussions with Joe Costanzo, the MVRTA administrator, the idea for making certain Lawrence routes fare-free emerged as another potential use of these funds. During these conversations both Administrator Costanzo and the Mayor realized that the cost of a 2-year pilot program on three select routes—the 34, 37, and 85—was just going to cost around \$250,000—a small amount of money for the potential impact it might have, according to former Mayor Rivera. "It's so inexpensive that it doesn't make any sense. You know what I mean? We spent every year between three and five million to move frozen water around the city, on the snow and ice budget...\$250,000 for two years of free buses for everybody—that's not too bad". Not only that, but by simply opting for a fare-free program over going through a long process to establish a means-tested fare structure made both the process of presenting the city council with the policy and the implementation even easier. As former Mayor Rivera shared, "You don't need anybody to calculate it, you don't need to fill any paperwork out, it's just free".

Worcester – Expanding the coalition

In Worcester, shortly after both his statement and after the WRRB report came out, Rosen was approached by members of the city’s public transportation advocacy community to see if he would be interested in working with them. The newly formed Zero Fare WRTA coalition included the existing transportation advocacy community such as rider advocacy groups and paratransit organizers, and now had the involvement of Councilor Rosen, along with the supporting research of the WRRB report. When asked about advocacy around fare free transit, several interviewees shared that support from Rosen and the findings in the WRRB report were crucial in giving the fare-free movement continued momentum. Anne Bureau of You, Inc. shared that during a speak out event promoting fare-free buses, Councilor Gary Rosen’s attendance helped encourage more press attendance: “We had the TV crews come and ride the bus with Councilor Rosen up to the EcoTarium and they got to see what it was like to be on the bus, how long the bus takes, and at the end of the ride there was a forum on zero fare”. Likewise, the Worcester Regional Research Bureau report provided supporting evidence for the benefits of a fare-free bus program and the ways that such a program could be implemented. Referring to the WRRB report, Adam Thielker, chairman of the Riders Action Council, shared that the report, “really put some wind in our sails, because they showed how this could work and exactly what it would take to make it happen”.

From there, the effort grew, and with the support of the WRRB’s research new advocates representing different stakeholders emerged. Interviewees from Worcester shared how they began to see more and more organizations and a more

diverse group of stakeholders emerge as supporter of a fare-free system. As Rosen put it, “riders and people from the community, The Health Foundation, all different folks from different walks of life” became involved in the effort. This diverse support appeared to be a critical way that the fare-free effort maintained momentum and expanded its reach. As the effort grew, more established nonprofits and policymakers began to take notice and sign on with their support. Several interviewees noted that this helped lend credibility to the fare-free movement. Of particular importance was the support of the Worcester Chamber of Commerce. Historically seen as a more conservative organization, many interviewees indicated that their participation showed how broad support was for a fare-free program. According to Tom Quinn, of the Worcester Regional Research Bureau, their support was significant in terms of lending the movement credibility.

Lawrence – Approval from the City Council

In Lawrence, a widespread coalition was not needed to build support for a fare-free program. The only support and partnership the Mayor needed to work to obtain after coming up with his proposal was the city council, who needed to vote in favor of using free cash for the effort. After discussing the plan with the MVTRA administrator, he proposed his plan to the council. “The Mayor drove a very good argument”, Lawrence City Councilor, Marc Laplante, shared. Rather than sharing a policy menu with various options for transit subsidies, the Mayor was up front about wanting to implement a fare-free pilot. Laplante shared that Mayor Rivera came to the council and said, “this is what I’d like to see funded—

are you with me?”. The Mayor received very little pushback from the council, although some members asked whether the fare-free program should be implemented across the entire city, ensuring that all councilors’ constituents would benefit from the policy. Eventually, though, the council voted in favor of the fare-free pilot, for the three recommended routes, for a two-year period. Later, the Council would vote again to extend the program for another two years.

Worcester – Maintaining the fare suspension

Even with the growing coalition and press about the possibility of a fare-free pilot in Worcester, it took the COVID-19 pandemic and pressure from the bus drivers’ union to cause the WRTA advisory board to suspend fares allowing for all door boarding. But in September 2020, months after the initial pandemic shutdown, the advisory board still voted to continue the program, unlike other RTAs in Massachusetts. As reported by the *Worcester Telegram and Gazette*, the Zero Fare WRTA coalition was present at the advisory board’s September meeting, giving coalition members the chance to speak about the importance of continuing the suspension during a time of severe economic hardship, and to also consider the possibility of using CARES funds to extend the suspension for a longer period of time (Moulton 2020a). Eventually, the Advisory Board voted unanimously to maintain the fare suspension until December.

In addition to putting pressure on the agency through attendance at advisory board meetings, the Zero Fare WRTA coalition continued efforts to broaden their coalition’s reach. In November 2020, the coalition held a forum, which had been rescheduled from March due to the Coronavirus lockdown. The

forum included a panel of Massachusetts policymakers such as Boston City Councilor Michelle Wu, state Representative David LeBoeuf, as well as Lawrence Mayor Dan Rivera (Moulton 2020b). At the next WRTA advisory board meeting in late January, the broad coalition of supporters which had grown since the formation of the group, spoke to emphasize the need for yet another extension. This time, the Worcester Regional Chamber of Commerce gave a formal statement in support of a fare-free pilot. Mass Audubon also vocalized their support, through a letter to City Council (Matthews 2021). Finally, at a February 2021 WRTA advisory board meeting, the board voted to extend fares until the end of June. In attendance once again were members of the Zero Fare WRTA coalition, as well as state policymakers and a speaker from LivableStreets, a transportation advocacy organization based out of Cambridge, MA.

Part II: The purpose of a fare-free program

In addition to finding out about implementation and the process behind pushing for a fare-free program, interview questions focused on the goals and intended benefits of going fare-free. Interviewees were asked about how their organization weighed the importance of efficiency, ridership, and equity when considering a fare-free program. In response to these questions, interviewees discussed a variety of purposes for implementing a fare-free program in their city. However, one goal for fare-free busing that was emphasized throughout almost all interviews was the goal of lifting residents out of poverty and alleviating a financial burden through eliminating fares. Although several stakeholders cited a

desire to increase ridership as an initial reason for their office or organization's interest in fare-free transit as an idea, almost all stakeholders eventually summed up their support for the policy as a way to help out low-income residents. For the purposes of summarizing these goals, I have placed the three types of equity goals covered during my interviews into three categories: economic-equity, access-equity, and ridership equity.

Economic-Equity

When discussing equity as a goal, interviewees in both Lawrence and Worcester frequently harkened back to the demographics of their city's population and the number of residents who were living below the poverty line. Their understanding of their city's population strengthened their support for a fare-free policy. Adam Thielker, chairman of the Riders Action Council in Worcester shared, "it's a matter of economic justice, primarily. Worcester is a very poor city". Tom Quinn, of the Worcester Regional Research Bureau also noted that Worcester is a city "with a lot of low-income residents who cannot afford a private vehicle". There was also an understanding that public transit fares add up throughout the day, especially for low-income individuals and families who use the bus to get everywhere.

"They plan it out, and they have to pay for it, and it's expensive. You know, a couple kids in tow with you, three kids you pay for them - it's difficult. It's a hardship". - Gary Rosen, Worcester City Councilor At-Large

Even the Worcester Regional Chamber of Commerce, in a statement which emphasized that their goals as a Chamber were to "increase economic activity"

shared in that same statement that Worcester residents were “struggling to find or keep jobs, meet their rents, and keep their business afloat”. The cost burden of transportation was even a sticking point for the Mass Audubon, whose mission revolves around protecting nature and wildlife of Massachusetts. While the environmental impact of Worcester being a car-centric city was certainly a factor, the equity focus of fare-free transit was a crucial part of their support. Andrew Ahern, Mass Audubon Community Engagement Coordinator, stated in an interview that fare-free transit could be especially impactful for low-income residents, and would “lift a burden for people”. Many interviewees spoke about how the simple act of removing the cost of transit could generate a major and targeted impact. This was emphasized by Brenna Robeson, co-chair of the Zero Fare WRTA coalition who, speaking of a fare-free policy, shared “you know, people are living on tight budgets here, and this is a very direct solution to that”.

In Lawrence, there was a similar sentiment when discussing the goal of improving the lives of city residents. Officials recognized that the cost of transit was not insignificant for most residents. Former Mayor Dan Rivera spoke on the issue, saying “when your income is \$20,000 a year, 80 bucks a month is an incredible amount of money”. News coverage of Lawrence also touched on this, such as a *New York Times* article covering the fare-free program which cited stories of riders who use the bus multiple times a day, saving up on fares that can accumulate over multiple trips (Barry 2020).

Boston transportation-focused organizations have adopted similar messaging, with many of these organizations beginning to look at the possibility

of making the bus system free as an option for trying out a fare-free pilot. Advocates and researchers point to demographic differences between who takes buses and who takes rapid transit and note that prioritizing free buses over a completely fare-free system could have a significant impact. Kristiana Lachiusa of the LivableStreets Alliance noted when speaking about bus transit in Boston that “we’re looking at people who are using bus only fares—50% are minority and 49% are low income, which is higher than rapid transit which is 31%, 27% respectively, and when we’re thinking about who’s using these resources, it’s hitting the population that we want to be supporting”. Ari Ofsevit, of the Institute for Transportation Development Policy (ITDP) noted that because of MBTA pass programs offered as benefits to many corporate office workers, “most of the people who actually are paying are the ones who can least afford it”.

Access-Equity

In addition to the cost burden associated with paying transit fares, many interviewees cited the issue of access to essential services as a reason for fare-free transit. For many interviewees, this was specifically connected to the ability to get to employment and provide for oneself and one’s family. Anne Bureau, of You, Inc. in Worcester put it in terms of “economic mobility”. Worcester City Councilor At-Large Gary Rosen also emphasized the way in which a fare-free policy could provide increased access to employment, noting that residents “take the bus to get to work” at “all different level jobs”.

Accessing essential services was also seen as a critical factor in improving Worcester’s public health. For Jan Yost, the president of The Health Foundation

of Central Massachusetts, ensuring access to essential services was part of her organization's goals to define health broadly, as not just encompassing healthcare or clinical care, but also "the prevention side of health". As part of this core value, the organization supported the fare-free effort in a large part to support "people of low-income having access to public transportation as a way to be more economically viable, to get to healthcare appointments, to get to education...whatever the case may be". Public health was also brought up in connection with the pandemic, as there has been an ongoing conversation at WRTA advisory board meetings regarding whether CARES Act funds could be used to support a fare-free system. As Tom Quinn of the Worcester Regional Research Bureau noted of the various proposals on the table for spending federal relief the city was receiving because of the pandemic, "it comes down to what would help you more during the pandemic, re-upholstered seats that are easier to clean or making sure that the people who are all laid off in the middle of the recession can still get around and get vaccinated". There were also other destinations that interviewees mentioned other than employment and healthcare. For example, some interviewees discussed childcare or school drop off and pickup via bus services. Brenna Robeson asked, "What happens if your kid gets sick at school and you have to go from your work to the school to get your kid and then bring them home?"

Another response received when asking about the fare-free bus program in Lawrence was around the idea of financial empowerment. When asked about the potential impacts of the fare-free program, former Mayor Dan Rivera touched on

this, emphasizing that the program in Lawrence made people's lives less difficult and allowed them to get to places that they needed to go, such as school, work, church, or the council on aging. "I think the dignity and power of work is very important," he shared. Reflecting on the goals of the program, the former Mayor summed it up by saying the program was meant to "provide a service to Lawrentians with this money that we have that can amplify, empower them, in a way that they'll really feel it".

This same conversation around access-equity and public transportation began in Lawrence even before fare-free transit was considered, when route 85 was added to the MVRTA's system. This route allowed residents to access downtown destinations such as grocery stores and municipal services much faster than they were previously, when getting downtown required a connection. When asked about the goals of a fare-free program, MVRTA administrator, Joe Costanzo, talked about making route 85 fare-free, noting that the route "hits all the senior housing in the downtown area of the city". He went on to share that the administration "found out as we went along, that a lot of the seniors were going to the council on aging, which is on Haverhill Street, on the route, and they were going maybe two or three times a day". He estimated that for many seniors this cost could add up to almost \$20 a week.

Ridership-Equity

For many of the advocates and policymakers I spoke with, their organization's support of a fare-free policy was rooted in the need to increase ridership on their bus systems. For Tom Quinn and the Worcester Regional

Research Bureau, ridership was one of the principal goals emphasized in their 2019 report. However, Quinn noted that increasing ridership through a fare-free program was not just about getting new riders on the bus, it was also about ensuring that people who were already bus riders did not have to limit their daily or weekly trips in order to cut down on fare costs. The WRRB report includes a chart, showing drops in ridership after the WRTA implemented a fare increase (Worcester Regional Research Bureau 2019). While there is no way to know whether this represented the loss of unique riders or a decrease in overall trips by a reliable transit user, Quinn noted, “I should say both of those are bad. The person that cut down the number of trips was going somewhere. We want them to be moving around.”

The Riders Action Council (RAC) also framed ridership as an equity issue noting that steady ridership was essential for preventing cuts in service. When asked about the importance of fares for the overall funding of public transit, Adam Thielker, chairman of the RAC, shared that the “death spiral” was a concern for his organization, which occurs when low ridership results in cuts to service and raising fares, which only dissuades people from using the bus. This same concern was shared by multiple interviewees. Many saw the fare-free proposal as a concrete way to keep the death spiral from getting worse. Joe Costanzo, MVRTA Administrator, talked about the cycle of raising fares and cutting service, sharing, “when you start doing that, your product becomes less attractive so you start to lose ridership, then you have to cut back service, so it’s that spiral that everyone talks about.”

In Lawrence, both Mayor Rivera and MVTRA Administrator Joe Costanzo noted the significant ridership increase seen on the three fare-free routes. “Those three routes certainly exceeded our expectations,” shared Costanzo. Former Mayor Dan Rivera recalls of the ridership jump after the fare-free implementation that “a lot of people were using it to go to work, a whole group of kids were using it to go to school. We found people who were making very little money were using it so it was having a very big impact in their lives”.

Chapter 6: Discussion

Implementation Process, Advocacy, and Key Actors

While advocacy, implementation and consideration of a fare-free program came about in very different ways and according to different timelines in Lawrence and Worcester, there are notable similarities seen in both cities. Both cities had the benefit of an advocate within city government who pushed for a fare-free program; in Lawrence this was Mayor Dan Rivera, in Worcester it was Councilor Gary Rosen. Both leaders also chose to take on additional involvement in the city's public transit efforts by agreeing to serve on their respective transit authority advisory boards. This meant that an advocate for fare-free programming would now be serving as a voting member of the body responsible for determining the future of the authorities.

Lawrence's effort to implement fare-free transit was heavily aided by their ability to use free cash to fund the program, and with a direct focus on the three routes that went through Lawrence. With the funding already available, and an agreement that the funding was sufficient to cover the MVRTA's lost fare revenue, the program was able to move forward right away once it was approved by the City Council. It should be noted, however, that the decision to use this money for a fare-free program required the initiative of the Mayor and the support of the City Council. These funds could have been designated for other purposes, but the city chose to prioritize the fare-free program.

In Worcester, the push for a fare-free pilot did not have a direct funding source to point to. In addition, rather than focusing on select routes, the fare-free

effort in Worcester is pushing for eliminating fares on the entirety of the WRTA. This has meant the effort to get a fare-free program passed has involved a more diverse group of stakeholders and advocates. Many organizations from the region have rallied around the movement, and in many cases these organizations are not explicitly transit specific, such as the Worcester Regional Chamber of Commerce, or You, Inc, a behavioral health and education agency for youth, or The Health Foundation of Central Massachusetts, a public health organization. A common response in interviews with representatives from Worcester organizations was the importance of the broad coalition that had formed around the fare-free effort. Many interviewees claimed this support was critical to the successes they have had thus far.

Where both cities are similar, however, is in the intended goals for the programs. Interviewees from both the government and advocacy organizations, and interviewees in both cities were in agreement about the impact a fare-free program can have on the city's low-income residents. There was a general understanding that regular daily riders would be the main beneficiaries of the program. While many other positive externalities—cleaner air, reduced congestion, increased economic activity—were mentioned in passing, the focus remained on benefiting the transit-dependent population who rely on the buses. As noted in my methods section, it is possible this overwhelming theme was a result of the interviewee pool including a larger number of advocacy organizations and nonprofit social service organizations. However, even given the limitations of my research, this similarity seemed especially notable.

Intended Benefits of Fare-Free Programming

Like much of the literature that exists on the benefits of public transportation, interviewees focused heavily on the importance of mobility, preventing social exclusion, and improving spatial accessibility for the respective residents of their cities. However, interviewees were also able to link accessibility to fare-free programs specifically and provide a rationale for how a fare-free program could help support increased accessibility in their community. Aside from accessibility, participant interviews also touched on two other main equity factors—cost and ridership. Previous research and literature on public transportation does cover cost, but cost is not cited as a key issue as frequently as accessibility. Ridership is covered in the literature as well, but more within the context of how new transit users—or choice riders—can be encouraged to take public transit, rather than the consideration of increasing ridership among those who already rely on transit, or transit-dependent riders. While much of this thesis’ findings confirm what is already available in the given body of research on transportation equity, looking at the way interviewees frame transit equity and the ability of fare-free transit to eliminate a financial burden for riders can help provide additional insight into the impact a fare-free program can have on low-income transit riders.

Emphasizing a Range of Access Needs

How easily public transportation users can access everyday necessities and become more mobile by solely using public transportation is a question that many

past researchers have attempted to answer (Delmelle & Casas, 2012; Attoh, 2012; Abrantes, 2015). However, in most cases, the existing body of public transportation literature weighs heavily on employment as one of the more important destinations that public transportation can provide access to. Harkening back to Kain's spatial mismatch hypothesis, access to jobs is paramount to ensuring that residents of a city are able to provide for themselves and their families. A focus on jobs was certainly present in interviews, and furthermore, there was a heavy emphasis in interviews on how for many bus riders, the bus was the only way they could access their job. Interviewees also revealed that in addition to simply providing access, public transportation aiding residents in reaching their jobs could also help empower community members. Mayor Rivera, in particular, noted that access to jobs through free public transportation was a way for a municipality to empower residents through making it easier to get to work, therefore improving their ability to provide for their families.

In addition to employment, interviewees also provided additional, more specific examples for how constituents use the bus system and why a fare-free policy might have a significant positive impact on their lives. Many interviewees mentioned access to grocery stores and the ability to obtain healthy food. Interviewees also mentioned access to healthcare, particularly preventative healthcare and how fare-free bus services allowed riders to tend to their health needs. While some literature does exist on access to groceries via public transportation (Crabtree & Mushi-Brunt, 2013), this topic does not seem to be covered as extensively as the connection between employment and transportation.

Another example shared by multiple interviewees involved access to childcare—several mentioned that pick up and drop off at childcare facilities created an additional access need that a fare-free system helped remedy. While access to childcare is mentioned in some transportation literature (Vilhelmson, 1999), it is not found frequently. The issue of childcare is also directly correlated to the negative implications of per ride fare systems. Dropping a child off at a care center often involves four trips, round trip for drop off and round trip for pick up. Emphasizing how fare payments can add up when a bus is used for all errands, including childcare drop-offs, helps make a case for the positive financial impact a fare-free system can have on transit-dependent individuals.

Overall, interviewees' insight about spatial accessibility confirmed the existing literature, but provided additional examples for how accessibility goes far beyond job access, the topic covered most extensively in the literature. Interviewees explained that bus riders who had families, healthcare needs, and who simply needed to run errands such as grocery shopping were dependent on the bus throughout the entirety of their day, not just on their commute to their workplace. This indicates that these additional accessibility needs, that are not as present in the existing literature, could be a key area that fare-free advocates should continue to highlight as they make a case for fare-free bus transit. By communicating these challenges that transit-dependent riders face—particularly the issue of needing to use transit for multiple trips per day—policymakers and advocates can better frame how fare-free programs are a direct solution to the hardships people are experiencing related to transit access.

Fares as Compared with Income

Interviewees in both Lawrence and Worcester noted that for a large portion of their residents, the cost of public transportation was highly burdensome. In most cases, interviewees framed this in relation to the income level of most bus riders. Interviewees pointed out that although the cost of a single ride might not seem high, those who were using the bus typically had low incomes, and for them the cost of transit was a much higher proportion of their overall income.

Awareness of this on the part of fare-free organizers and advocates is significant because it confirms a robust discussion that is occurring in transit literature. Transportation researchers are, for the most part, in agreement that public transportation policy is often regressive since highway and rail funding tends to be prioritized over bus funding (Grengs, 2007; Taylor and Morris 2014; Paget-Seekins, 2011; Lubitow et al., 2017). In addition, flat rate transit fares are a more significant proportion of many bus riders' income; this creates an additional regressive scenario where low-income riders are paying a larger portion of their total income to pay for transportation.

Ridership: Transit-Dependent vs. Choice Riders

Existing literature and research has yielded mixed findings about how a fare-free transit system can impact ridership. Some researchers are skeptical about modal shifts seen as a result of a fare-free program and posit that any modal shift seen is actually from frequent transit users, who might have otherwise walked or not taken a trip at all. (Cats et al., 2016). This is corroborated by some studies

examining fare-free programs, such as Roseblum et al.'s study in Boston (2019) which indicated that low-income riders are more likely to be responsive to fare-free or reduced fare programs.

For interviewees, though, any ridership increase whether a current transit user or not was viewed as a success. In Lawrence, both Mayor Rivera and Administrator Constanzo noted that the fare-free routes increased access for both older adults needing to visit the Council on Aging multiple times a day, and high school students that used the bus to get to school. There was little discussion of modal shift out of cars—it was much more important that those who relied on the bus were able to use the bus as frequently as they needed in order to get to work, run errands, and make appointments. In Worcester, the Worcester Regional Research Bureau noted in their report that ridership went down after every fare increase, and although it is unclear whether this is because people were opting to drive instead or were rationing trips, it was noted in interviews that neither is a desirable outcome. In fact, losing transit-dependent riders could have major equity implications from a spatial accessibility perspective, as these riders are no longer able to reach a destination that was otherwise a part of their schedule.

These comments indicate that advocates of fare-free transit are reframing ridership as an equity issue, as opposed to a modal shift issue. Seeing ridership numbers go up after switching to a fare-free system, even among frequent bus users, means that people who need the bus are using the bus more often to increase their mobility, and for policymakers and advocates this is a win. This could provide an opportunity for fare-free advocates to re-align their focus on

equity. Modal shift out of cars is important, certainly, but it is also important for people to simply be able to get where they need to go without having to make decisions about which trips they will take and which they will eliminate. Some interviewees also discussed policymakers' inclination to means-test for transit fares. They noted that for bus transit, given the income levels of the typical bus rider both on RTAs and in the Boston area, means-testing was perhaps more cumbersome than it was worth. In Lawrence, there was also an emphasis on the simple implementation of a fare-free program. If the program had instead employed a sliding scale payment system or system where fares were only free to those below a certain income threshold, developing the program would require more research and studies to determine where the threshold would be and how riders would provide proof to be able to ride the bus for free. But going fare free for all users avoided this process.

Looking ahead: Boston

In Boston, the fare-free movement has slowly been gaining momentum. Many advocates, research organizations, and agencies point to data that supports a fare-free bus system to improve efficiency, improve equity for bus riders, and increase ridership. However, there is still discussion and investigation into whether a completely fare-free bus system is the most equitable and sustainable way to make significant improvements on a system that is struggling economically. Given that fare revenue is roughly 40% of the MBTA's total budget, a much larger proportion of the budget than the smaller RTAs that operate

in Worcester and Lawrence, where fare revenue represents roughly 14% and 12% respectively, eliminating fares would have a much more significant impact on overall MBTA funding (Scharfenberg, 2015).

Further complicating issues in Boston, the discussion of whether buses should try a fare-free pilot is occurring amidst the rollout of the MBTA's fare transformation project, or AFC 2.0. This new fare payment process will involve the implementation of a "proof of payment" system, where riders pre-pay for the bus at kiosks located throughout the city, and only need to present proof of payment when asked, allowing the system to switch to all door boarding (Massachusetts Bay Transportation Authority n.d.). The overhaul of the way fares will be collected on MBTA buses has resulted in many planners and advocates asking to find out more about whether the investment will be worth it. Cashless technology could cost close to one billion dollars, a significant investment (MassInc Staff, 2021). A lingering question for many Boston planners is also whether bus only fares, that is fares from riders who only use the bus and do not tap into a rapid transit line, are significant enough by themselves to warrant the massive overhaul to the payment system. When asked about how important fares are to the MBTA's operating revenue, Ari Ofsevit of the Institute for Transportation & Development Policy shared that data indicates that most bus trips are paid for by a fare medium that includes a higher fare, meaning riders are either transferring to rapid transit anyway or using a monthly pass. His estimates based on MBTA ridership data show that just 5% of MBTA revenue comes from "bus only" fares. Not only that but given that bus only trips are almost half

minority and low-income riders, making just the bus free could be a quick and easy way to create a more equitable fare system, as opposed to implementing a more complicated sliding scale system that requires proof of income. While the MBTA has not confirmed or refuted this data, ITDP's research and the research of other transportation advocates show that it may be worth considering fare-free buses prior to the costly implementation of AFC 2.0.

Chapter 7: Conclusion

Fare-free public transportation, particularly for buses, has the potential to have powerful social equity implications. It provides the opportunity to eliminate the economic burden of transit fares, and this typically benefits those who are most in need of economic relief. Critics of fare-free public transportation have exhibited skepticism about the ability of such programs to produce a significant enough modal shift to result in the far-reaching impacts that many current policymakers hope to see—reduction in greenhouse gas emissions, less traffic, and increased economic development. However, this thesis demonstrates that these critiques may be misguided. Existing literature indicates that there are few opportunities to study the long-term impacts of fare-free programs. The few examples available differ greatly in the ways their policies are implemented, the geographic location of the policy, and the beneficiaries of the policy, and therefore do not provide sufficient means for comparison.

More importantly, the qualitative research conducted in this thesis shows that for local policymakers and advocates, the social justice benefits that a fare-free program stands to provide are meaningful enough on their own. While the other positive externalities that a city might experience from a fare-free program would be welcome, the most urgent needs at a local level revolve around helping individual, transit-dependent riders by covering the cost of transit, and thereby improving their lives. Focusing on social justice outcomes as the intended impacts of a fare-free program allows policymakers to push for fare-free programs on just these grounds, without forcing them to promise a wider range of positive

externalities. By centering equity, policymakers can make a focused push for fare-free programs purely based on the fact that these programs will substantially improve the lives of the transit-dependent community.

Further Study

Since there is limited research on fare-free transportation programs, there are many other ways that this topic can be investigated in the future. Consideration of fare-free programming, either through experimental pilots or at a larger scale, is being seen at the local and state level more often, and it seems likely that fare-free policies will be considered more and more in the future. Research and additional studies on fare-free programming and advocacy will help to monitor how fare-free public transportation is evolving as a policy idea for local advocates, policymakers, and constituents. It will also provide additional data about the efficacy of these programs and the most effective strategies for passing similar policies.

There were several topics that came up during my research that did not fit into the scope of this project but would be worth investigating. The first was the issue of Boston's Fare Transformation Project, a new fare-collection system to be implemented by the MBTA that will involve cashless off-board payment for fares. Many advocates have raised questions about how much revenue will result from the bus only fares, or fares from individuals who do not have a transit pass and will not be transferring to a rapid transit line. The findings of some researchers in the Boston area have indicated that the fare revenue received from this subset of

transit riders is minimal, which would indicate that making all buses fare-free, while maintaining rapid transit fares, would have a limited financial impact on the MBTA. Given that bus riders typically have lower incomes, this could present an opportunity to have a significant social equity impact with limited negative consequences. Looking further into this issue could help confirm whether these estimates are correct and could help develop policy recommendations surrounding this issue.

Another issue that was beyond the scope of this project and that would benefit from further research is the relationship between Regional Transit Authorities (RTAs) and the Massachusetts Department of Transportation (MassDOT). Interviews with transportation agency administrators for this project shed light on some of the ridership benchmarks and farebox recovery benchmarks that are required of these agencies. In many cases, certain benchmarks are required of RTAs in order to continue to receive state funding. In many cases, these requirements could be seen as a major challenge for cities looking to implement a fare-free pilot. I did not have the opportunity to interview representatives from MassDOT for this project, but their insight could help shed light on what power cities and Regional Transit Authorities have or do not have to implement fare-free programs. It should also be noted that during the time I was writing this thesis, two fare-free bills were filed in the Massachusetts State Legislature. One bill filed by State Senator Patricia Jehlen requires RTAs to establish pilot programs in which fares are eliminated for all or some of the routes (MilNeil 2021). Another bill, filed by State Senator Joseph Boncore, Chair of the

Transportation Committee, eliminates all fares on MBTA and RTA bus routes. To compensate for lost revenue, the bill institutes a gas tax, increases fees on ride-sharing services, and increases fees on parking space leases (MilNeil 2021). Given the flurry of activity in the state legislature pushing for fare-free bus programs, it is clear interest in fare-free bus transportation is only growing. Given this increased legislative activity around fare-free transit, further study and examination of these policy considerations would be valuable.

Lastly, the issue of means-testing only came up briefly in interviews but seemed relevant enough to warrant a quick note. A common critique of fare-free public transit is that in making fares free for everyone, agencies lose out on fare revenue from individuals who could afford to pay and therefore help support the transit system as a whole. But there are also many flaws with a means-tested system; sometimes those who truly do need a reduced fare are unable or hesitant to acquire a discount for various reasons. Furthermore, the process of means-testing is arduous and can create a bureaucratic barrier, as extensive research often needs to go into deciding where the cutoff is for a reduced price or who will receive a benefit. Digging into the differences between means-tested fare policies and fare-free policies could help establish if one policy is more impactful than the other in resulting in the equity outcomes desired by policymakers.

Recommendations

Fare-free public transportation is only growing in interest, and pressure from advocates will likely motivate additional experimentation with these

systems. For policymakers—the definition of what constitutes a ridership increase should be broadened. This means shining a light on the needs of transit-dependent riders and the impact that eliminating fares can have on this group. This narrative can help support the argument for cities to use funds to eliminate transportation fares. In talking to city officials and advocates in Lawrence and Worcester, it is clear that eliminating fares is a direct way to help those who need it most, and a valuable way for cities to help out residents who have lower incomes and could benefit from an economic boost.

Advocates can learn from the organizing in Worcester that forming a broad coalition of diverse interest groups helps to link public transportation access to a wide range of equity impacts such as public health, access to open space, and access to essential services like healthy food and childcare. This helps to promote the multiple ways in which access to public transportation can truly make the lives of transit-dependent residents better.

In Lawrence, a key component to their fare-free pilot's success was having the funding for the program available at the program's inception. In addition to this, the city also benefited from being intentional about the specific routes it selected in order to link the program to the most critical access needs that existed in the city. Furthermore, going fare-free for all riders, rather than implementing a sliding scale program, or a discount only for those who needed it, made proposing the policy simple and did not require an arduous study to determine who was eligible, and how eligibility would be confirmed. Cities looking to institute a

similar pilot should consider the importance of these two key implementation processes.

Overall, the research outlined here indicates that as interest grows in fare-free programming, policymakers can be direct and intentional in promoting equity as a primary goal of these types of programs. The examples of Lawrence and Worcester demonstrate that prioritizing the needs of the transit-dependent populations in these cities can garner significant support and can result in successful policy outcomes.

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Appendix A – Interview Guides

City Officials Interview Guide

Hello, my name is Ginger Leib, and I am a student at Tufts University in the Department of Urban and Environmental Policy and Planning. I am writing my master's thesis on the fare-free pilot programs implemented recently in Worcester and Lawrence. I am hoping to better understand how fare-free pilots such as these are implemented in spite of any political opposition to these types of programs that may exist.

You are being invited to take part in this interview because you are an [employee or board member] at a [Regional Transit Agency, City Government, OR Transit Advocacy Organization] in Massachusetts. This interview is intended to help understand how the city passed this policy and what challenges might have been encountered during the process. Your participation in this study will help me better understand the goals, implementation, and outcomes of the respective pilot program(s).

Interview for an elected city official or a city employee

Section I: Introduction

1. What is your title?
2. Could you please describe the work your office does relating to bus transit?

Section II: Funding and Services

3. What are [City's] most pressing public transportation needs?
4. How does [city name] balance funding and transit services?
5. How important are transit fares to the overall funding of public transit?

Section III: General Questions about pilot programs in Worcester or Lawrence.

6. What were the goals of free bus service in [city]?
 - a. Are there specific goals related to equity?
 - b. Related to ridership?

- c. Efficiency?
7. What challenges did [city name] encounter when implementing this policy?
 - a. Were there administrative challenges?
 - b. Were there challenges related to communicating the new fare policy to the public?
 8. Is [city] planning to measure the results of this policy in any way?
 - a. If so, how?
 9. What (if any) have been the initial impacts of the fare-free policy?

If they only describe positive or negative impacts, ask about the opposite.

If the pilot program is still ongoing, go on to question 10. If not, go on to question 12.

10. Does your office anticipate any future challenges related to the fare free pilot program?
11. Is the pilot program likely to continue past its scheduled end date? Why or why not?
12. Why was the decision made to end the pilot program on [date]?

Section IV: Questions about Subsidies

13. Are there other types of public transportation subsidies that the city considered? Why did you choose to go with making routes fare free?
14. Was there political opposition to this policy?
 - a. From where or whom did this opposition come from?
15. *If yes:* How did your office contend with this political opposition?
16. Did your office have a specific outreach effort aimed at gaining support for this policy?

17. Were there any partners that your office worked with either when advocating for or communicating about this policy?

Section V: Wrap Up

18. [Clarify any responses as necessary]
19. Is there anyone else from your office who might be helpful to interview?
20. Do you have any questions or anything else to add that might not have been covered?

Thank you for your time.

[Transit Agency Interview Guide](#)

Hello, my name is Ginger Leib, and I am a student at Tufts University in the Department of Urban and Environmental Policy and Planning. I am writing my master's thesis on the fare-free pilot programs implemented recently in Worcester and Lawrence. I am hoping to better understand how fare-free pilots such as these are implemented in spite of any political opposition to these types of programs that may exist.

You are being invited to take part in this interview because you are an [employee or board member] at a [Regional Transit Agency, City Government, OR Transit Advocacy Organization] in Massachusetts. This interview is intended to help understand how the city passed this policy and what challenges might have been encountered during this process. Your participation in this study will help me better understand the goals, implementation, and outcomes of the respective pilot program(s).

Interview for a Transit Agency Employee or Board Member

Section I: Introduction

1. What is your title?
2. Please describe the work you and/or your office does relating to bus transit.

Section II: Funding and Services

3. What are your agency's most pressing needs?
4. What are the funding sources for your agency?
5. How does your agency balance funding and providing transit services?
6. How important are transit fares to the overall funding of public transit?

Section III: General questions about pilot programs in Worcester or Lawrence.

7. What were the goals of free bus service in [city]?
 - a. Are there specific goals related to equity?
 - b. Related to ridership?
 - c. Efficiency?
8. What challenges did [agency name] encounter when implementing this policy?
 - a. Were there administrative challenges?
 - b. Were there challenges related to communicating the new fare policy to the public?
9. Is [agency name] planning to measure the results of this policy in any way?
 - a. If so, how?
10. What (if any) have been the initial impacts of the fare-free policy?

If they only describe positive or negative impacts, ask about the opposite.

If the pilot program is still ongoing, go on to question 11. If not, go on to question 12.

11. Does [agency name] anticipate any future challenges related to the fare free pilot program?
12. Does [agency name] anticipate the pilot program will continue past its' scheduled end date? Why or why not?

13. Why was the decision made to end the pilot program on [date]?

Section IV: Questions about subsidies

14. Are there any other types of public transportation subsidies that the city considered? What led to the decision to go with a fare free policy?

15. Was there political opposition to this policy?

a. From where or whom did this opposition come from?

16. Did [agency name] have a specific outreach effort aimed at communicating the details of this policy?

Section IV: Wrap Up

17. [Clarify any responses as necessary]

18. Is there anyone else that might be helpful to interview?

19. Do you have any questions or anything else to add that was not covered?

Thank you for your time.

Worcester or Lawrence Based Research or Advocacy Organization

Hello, my name is Ginger Leib, and I am a student at Tufts University in the Department of Urban and Environmental Policy and Planning. I am writing my master's thesis on the fare-free pilot programs implemented recently in Worcester and Lawrence. I am hoping to better understand how fare-free pilots such as these are implemented in spite of any political opposition to these types of programs that may exist.

You are being invited to take part in this interview because you are an [employee or board member] at a [Regional Transit Agency, City Government, OR Transit Advocacy Organization] in Massachusetts. This interview is intended to help understand how your organization worked to help pass this policy and what challenges might have been encountered during the process. Your participation in

this study will help me better understand the goals, implementation, and outcomes of the respective pilot program(s).

Interview for an Advocacy or Research Organization (Employee or Board Member) working in Worcester or Lawrence

Section I: Introduction

1. What is your role at [organization name]?
2. Please describe the work your organization does relating to bus transit.

Section II: Funding and Services

3. What are the greatest public transportation needs of the municipalities you work in?
4. How important are transit fares to the overall funding of public transit?

Section III: General Questions specific to fare free pilot programs:

5. Please describe your organization's involvement, if any, in the fare free pilot program in Worcester and/or Lawrence.
6. *If they were proponents of the program:* Why did your organization decide to advocate for the program?
7. What are the goals of the program?
 - a. Are there specific goals related to equity?
 - b. Related to ridership?
 - c. Efficiency?
8. What are the impacts of fare-free transit?
9. *If they only describe positive impacts, ask:* Are there any negative impacts that could result from a fare-free bus policy?
10. Are you planning to measure the results of this policy in any way?
 - a. If so, how?

If the pilot program is still ongoing, go on to question 10. If not, go on to question 11.

11. What future challenges might there be related to the fare free pilot program?
12. Is the pilot program likely to continue past its' scheduled end date? Why or why not?
13. What are the likely factors that led to the pilot program ending on [date]?

Section IV: Questions about subsidies.

14. Are there any other types of public transportation subsidies that the city considered instead of fare free transit? Why did the city ultimately decide on making the routes fare free?
15. Was there any political opposition to the fare free program in [*Worcester or Lawrence*]?
 - a. From where or whom?
16. *If yes*: How did your organization contend with this political opposition?
17. Are there specific outreach efforts that need to take place in order to combat political opposition to fare-free transit policies?
18. Were there any partners that your organization worked with either when advocating for or communicating about this policy?

Section V: Wrap up

19. [Clarify any responses as necessary]
20. Is there anyone else you recommend I interview, either at your organization or outside your organization?
21. Do you have any questions or anything else to add that was not covered?

Thank you for your time.

Non-Worcester or Lawrence Based Research or Advocacy Organization

Hello, my name is Ginger Leib, and I am a student at Tufts University in the Department of Urban and Environmental Policy and Planning. I am writing my master's thesis on the fare-free pilot programs implemented recently in Worcester and Lawrence. I am hoping to better understand how fare-free pilots such as these are implemented in spite of any political opposition to these types of programs that may exist.

You are being invited to take part in this interview because you are an [employee or board member] at a [Regional Transit Agency, City Government, OR Transit Advocacy Organization] in Massachusetts. This interview is intended to help understand how your organization is involved with advocating for fare-free bus policies. Your participation in this study will help me better understand the goals, implementation, and outcomes of the respective pilot program(s).

Interview for an Advocacy or Research Organization (Employee or Board Member), not in Worcester or Lawrence.

Section I: Introduction

1. What is your role at [organization name]?
2. Please describe the work your organization does relating to bus transit.

Section II: Funding and Services

3. What are the greatest public transportation needs of the municipalities you work in?
4. How important are transit fares to the overall funding of public transit?

Section III: General Questions specific to pilot programs in Worcester or Lawrence

5. Please describe your organization's involvement, if any, in advocacy around fare-free transit.
6. *If they are advocates of fare-free transit.* Why does your organization advocate for fare-free transit?

7. What are the goals of free bus service?
 - a. Are there specific goals related to equity?
 - b. Related to ridership?
 - c. Efficiency?
8. What might the impacts of fare-free transit be?
9. *If they only describe positive impacts, ask:* Are there any potential negative impacts from a fare-free bus policy?

Section IV: Questions about subsidies

10. Are there any other types of public transportation subsidies that should be considered instead of or in addition to fare-free public transit?
11. What sort of political opposition exists against fare free public transit programs?
 - a. From where or whom does this opposition typically come from?
12. What are the most effective ways to contend with this opposition?
13. Are there specific outreach efforts that need to take place in order to promote or share information about a newly implemented fare free policy?

Section V: Wrap up

14. [Clarify any responses as necessary]
15. Is there anyone else that might be helpful to interview?
16. Do you have any questions or anything else to add that was not covered?

Thank you for your time.