|  |  |
| --- | --- |
| http://cmt-stl.org/wp-content/uploads/2014/10/Citizens-For-Modern-Transit-Logo-CMYK.jpg  Public-Private Partnerships in Transit Projects | Jingqi Guan, Ja Kyung (Maria) Jang, Mary Miller, & Annicka Webster  Washington University in St. Louis  Social Work Practice with Organizations & Communities  George Warren Brown School of Social WorkSpring 2015 |

# Acknowledgements

The authors would like to thank our contacts at Citizens for Modern Transit – Kim Cella and Lenora Fisher – for the opportunity to work with them on this project and for their time and support in our research. We would also like to express particular appreciation to the following people for their generous kindness in sharing time, knowledge, and connections: Todd Antoine, Great Rivers Greenway District; Eric Avner and Chad McCarter, Haile Foundation; David Emory, Citizens for Progressive Transit; Robert Frazier, HDR, Inc.; Bill James and Jeff Waller, Regional Transportation District (RTD); Saba Long, Metro Atlanta Rapid Transit Authority (MARTA); Jim Mann, Taylor Family Office; Ryland McClendon, MARTA; Beth Osbourne, Transportation for America; and John Schneider, Protransit. In addition, we would like to thank our instructors – Emily Coen and Lisa Harper-Chang – for their support and encouragement.

# Table of Contents

[Acknowledgements 1](#_Toc416895374)

[Table of Contents 1](#_Toc416895375)

[Executive Summary 3](#_Toc416895376)

[Introduction to the Issue 4](#_Toc416895381)

[Organizational and Stakeholder Context 4](#_Toc416895382)

[Dynamics of the Issue 5](#_Toc416895383)

[Role of Transit in Economic Development 5](#_Toc416895384)

[The Costs of Public Transit 5](#_Toc416895385)

[Lack of Funding in St. Louis 5](#_Toc416895386)

[Implications for CMT and Key Research Question 6](#_Toc416895387)

[Methods 6](#_Toc416895388)

[Findings 7](#_Toc416895389)

[Public-Private Partnerships as an Option 7](#_Toc416895390)

[Models of Public-Private Partnership 8](#_Toc416895391)

[Case Study: Atlanta 9](#_Toc416895392)

[Case study: Cincinnati 11](#_Toc416895393)

[Case Study: Denver 12](#_Toc416895394)

[Discussion: Recommendations and Implications 14](#_Toc416895395)

[Summary of Main Findings 14](#_Toc416895396)

[Atlanta 14](#_Toc416895397)

[Cincinnati 15](#_Toc416895398)

[Denver 15](#_Toc416895399)

[Generalized Takeaway 15](#_Toc416895400)

[Recommendations based on findings 17](#_Toc416895401)

[Refine the focus: 17](#_Toc416895402)

[Build support: 17](#_Toc416895403)

[Leverage support to secure funding: 18](#_Toc416895404)

[Limitations 18](#_Toc416895405)

[Risks 19](#_Toc416895406)

[Conclusion 19](#_Toc416895407)

[References 20](#_Toc416895408)

[Appendices 23](#_Toc416895409)

[Appendix A: Organizational Structure of RTD 23](#_Toc416895410)

[Appendix B: Light Rail Customer Satisfaction Survey 24](#_Toc416895411)

# Executive Summary

## Funding for Public Transit

Public transit provides an affordable, environmentally friendly mobility option for vulnerable populations in cities all over the world. In St. Louis, where government money for transit is low, expansion of transit services can be difficult to fund. Like many other transit interest groups across the U.S., Citizens for Modern Transit (CMT) is looking for alternative options to fund much needed improvements and expansion projects for the region’s transit system. One potential option for funding is the use of public-private partnerships. The cities of Atlanta, Cincinnati, and Denver offer recent transit success stories that may provide insight into the possibility of using public-private partnerships to develop public transit in St. Louis.

## Methodology

The authors sought to answer the question *what are some examples of successful public-private partnerships in transportation projects that might guide possible funding opportunities in St. Louis*? The method for our research was to survey background information on public-private partnership, select appropriate case studies, and research the motivating factors in the successful establishment of public-private partnerships through personal interviews with participating organizations and key stakeholders. We selected case studies of successful public-private transit projects from Atlanta, Cincinnati, and Denver. Through analysis of our interview data, we identified common drivers for success between the various projects and suggest ways that St. Louis might learn from the growth of transit in these three cities.

## Key Findings

Atlanta was able to turn around a failing transit system through improved operational efficiency, grassroots support, and the cooperation of the business community. Cincinnati’s public transit projects were realized through the work of two passionate and influential transit champions who inspired public support and secured private seed funding. Denver sought federal funding to attract local partnership and grew civic support through public engagement with political supporters.

We conclude that to successfully implement a public-private partnership transit project, it is necessary to have three sectors of support: civic support, political support, and funding or business support. Civic support is ultimately the foundation of a successful project, while private support can catalyze the development of the partnership and acceptance of the project. Political support is necessary, but may follow the other two, or may be used to develop the others if present early on.

Garnering comprehensive support requires champions and partners appropriate to each sector, proof of operational efficiency, trust in the management of the transit project, and a strong business case. Project organizers must also consider the local context and power dynamics.

## Recommendations

In St. Louis, CMT should first refine the focus for transit projects, then build support behind one or two projects by recruiting champions and seeking partnerships with other organizations, and finally leverage support to secure funding. We believe that public-private partnerships may offer funding options for transit in St. Louis, but that funding will only be moved if significant support can be demonstrated from at least two of the three support sectors.

# Introduction to the Issue

Lack of availability and access to public transportation is an issue worldwide. In contrast to transportation by car, public transportation enables mobility for citizens by providing an affordable and environmentally friendly means of transportation. However, there is often a lack of funding or a lack of motivation for expanding public transportation. The importance of public transportation instead of individual car usage has recently been a topic of discussion both nationally and internationally. As countries try to reduce their emissions in accordance with international agreements like the recent U.S. agreement with China, public transportation is becoming more of a priority (Nakamura & Mufson, 2014). Improving public transportation has not only positive environmental impacts, but social and economic impacts as well.

The iconic St. Louis trolley of the past points to a more vibrant history of public transportation than at present (Fisher, personal communication, January 21, 2015). The main public transportation in the St. Louis region now consists of the MetroLink train and MetroBus systems. However, transit does not reach many areas where it is most needed. Because there are only two lines of MetroLink, many people are calling for expansion into other parts of the St. Louis region (Cella, personal communication, January 28, 2015). There are several factors that make transit expansion difficult, but the main one is the lack of funding (Cella, personal communication, January 28, 2015). While many other states provide extensive funding from government sources, Missouri provides very little (Simes, 2014a). Through this project, we aimed to find innovative strategies to enhance the usage of public transportation. More specifically, our research question is: **what are some examples of successful public-private partnerships in transportation projects that might guide possible funding opportunities in St. Louis?**

# Organizational and Stakeholder Context

CMT is a nonprofit organization representing more than 20,000 individuals interested in moving transit forward in Missouri and Illinois, and has been active for over thirty years (Citizens for Modern Transit, n.d.) CMT’s mission is to lead advocacy “efforts for an integrated, affordable, and convenient public transportation system with light rail expansion as the critical component that will drive economic growth and improve quality of life in the St. Louis region” (Citizens for Modern Transit, 2015). With the goal of providing an environment where citizens can move around the St. Louis region more easily without relying on a car, CMT has promoted MetroLink since the 1980s (Cella, personal communication, January 28, 2015). CMT’s current programs include the Ridership Program for elders, Try & Ride Program for those who have never ridden transit, and other various advocacy and education programs.

CMT is staffed by three individuals: the Executive Director, Kim Cella, the Grants and Program Director, Lenora Fisher, and one part-time administrative assistant. CMT’s main stakeholders include the East-West Gateway Council of Governments, the Missouri Public Transportation Association, and the Missouri Department of Transportation (Cella, personal communication, January 28, 2015). These stakeholders are closely or directly related to the local government. Due to these collaborations, CMT’s work has strong legislative implications. This is a crucial part of public transit expansion because state and federal funds play a major role in funding transit projects (Cella, personal communication, January 28, 2015). There are also private stakeholders in CMT’s work. These private stakeholders, such as BJC Healthcare, Washington University, and Cortex Innovation Community, are represented on the board of directors of CMT, and they have already made contributions to previous transit projects including the Cortex metro station (Cella, Personal Communication, January 28, 2015). Finally and most importantly, the more than 65,000 daily commuters who use public transportation in St. Louis region are important stakeholders for this project, as their voices help determine policy at the ballot boxes and help decide which transit projects should be priorities for the region (Citizens for Modern Transit, 2015).

# Dynamics of the Issue

## Role of Transit in Economic Development

While scholars agree that transportation infrastructure is important to economic development, there is no consensus on the true value of public transportation. Sanchez (1999), for example, claims benefits to marginalized populations, particularly regarding access to employment. Others, such as Winston and Maheshri (2006), claim that the costs of such transport actually result in a net reduction of welfare. Still others tout the general benefits of public transit, such as lowered traffic congestion and reduction in environmental impact or public health benefits including increased exercise in the form of frequent walking to public transit stations (Litman, 2014; Lachapelle & Frank, 2009). Giuliano (2005) reports that although public transit is subsidized with the intent to provide mobility to all, those who rely most heavily on public transit actually have the lowest level of mobility. The inequalities and inefficiencies of public transportation in meeting the needs of citizens may be the reason behind its status as a low-funding priority in Missouri.

## The Costs of Public Transit

Beyond use of public funding at the construction phase, operation of public transit is often heavily subsidized by sales taxes. Reductions in profitability are often addressed by reductions in service and/or increases in fare prices. Savage (2004) investigates the experience of the Chicago Transit Authority (CTA) from the late 1940s to the late 1990s and finds that external factors caused a shift from operational profitability to major losses and dependence on subsidies. CTA took several measures to regain profitability, relying on increases in fare prices rather than reduced service (Savage, 2004). Savage claims that this common tactic causes a reduction in social welfare because the cost for all riders increases even though the total number of riders has decreased – the initial cause of lost revenues. Rather than decrease service to match the demand for ridership, fares rise and become more of a burden on riders. This is particularly important for the most vulnerable populations, the elderly and the poor, who may rely on public transit out of necessity rather than choice and who are more acutely affected by fare hikes (Savage, 2004). As a matter of social justice, this alone underlines the importance of seeking alternative funding options to increased tax burdens and fare hikes.

## Lack of Funding in St. Louis

Often raised through sales taxes, which are disproportionately levied on lower-income citizens, as it is a larger share of their income, transportation funding has additional social implications beyond the apparent issues of access, mobility, and affordability. To further complicate this, funding garnered from taxes is often funneled toward road and highway repair, and is insufficiently granted to public transit expansions (Cella, personal communication, January 28, 2015).

In St. Louis, Metro Transit provides over 50 million rides every year on the MetroBus, MetroLink train and Metro Call-A-Ride van services (Metro Transit, 2015). In 2010, Metro Transit and East-West Gateway Council of Governments published a 30-year strategic plan for transit expansion and development. This plan included a vision to “move tens of thousands of people to work every day; stimulate job growth and economic development; reduce pollution and traffic congestion; and improve the quality of life for all citizens, whether they use the system or not” (Metro Transit, 2010, p. i). Although this plan is “a financially reasonable plan,” funding has been hard to find (Metro Transit, 2010, p. 58; Cella, personal communication, January 28, 2015).

St. Louis Metro transit operations receive less than 400,000 dollars per year from the state of Missouri (Cella, 2014a). Mayor Francis Slay prioritized a collection of 43 proposed transportation projects for the Missouri Department of Transportation before an August 2014 vote on Amendment 7, which would have raised a tax to fund the projects at nearly 269 million dollars over ten years (City of St. Louis, 2014). However, the amendment did not pass and these projects remain unfunded (Cella, 2014a).

## Implications for CMT and Key Research Question

Knowing that the state is not a reliable or sufficient source of funding, and after the recent failure of Amendment 7 to raise money for transportation funding, CMT is looking to alternate funding models to help them move forward with transit projects in the St. Louis region. The single successful transit expansion begun in 2014 in St. Louis was the funding of a new MetroLink station in the Cortex district (Cella, 2014b). This expansion is the result of multiple partners investing in a specific transit project and offers hope for a new way to fund other expansions—public-private partnerships.

CMT has contracted with Transportation for America to assess the financial possibilities for transit in St. Louis and to study some of the successful funding models that have worked in other locations (Fisher, 2014). Transportation for America will consider funding options that include Transportation Development Districts (TDDs), wholesale taxes on fuels, property taxes, and dedicated sales taxes (Fisher, personal communication, January 21, 2015).

CMT has asked the authors to consider similar questions about funding, hoping to complement the study commissioned with Transportation for America. CMT asked how other states have funded public transportation projects and how these projects have come together—who are the champions and key partners, and what financial tools have been used? In our conversations with both Lenora Fisher and Kim Cella, we have identified public-private partnerships as a likely gap in Transportation for America’s study scope. Specifically, we aim to answer the following research question**: How have other states used public-private partnerships to fund transportation projects, and how might these strategies apply to St. Louis?**

# Methods

The authors engaged in various research methodologies to find answers to the key research question. These methods included: a review of the literature concerning best-practices in transit projects, interviews with stakeholders of related transit projects or similar interests in St. Louis, and collection of information about how other public-private transit projects have been funded.

The bulk of our research consisted of secondary data from other public-private partnerships around the U.S. We selected three case studies of successful public-private transit projects, one each from Atlanta, Cincinnati, and Denver. These cities were chosen because, like St. Louis, they did not have transit systems that met the needs of their population, although transit projects are currently underway in each.

First, we did research in order to understand the main projects currently underway in each city, and how the projects were funded, as well as preliminary research into industry best practices. Preliminary findings were discussed. Then, key stakeholders in each of the cities’ transit projects were identified and contacted. Additionally, stakeholders in St. Louis were contacted and interviewed to provide a local perspective.

While each interview was different, a base set of questions to ask stakeholders was set by the group, and was expanded on or modified as appropriate for each interview. This base set of questions included:

1. Does your public transportation system have private funders? If yes, please explain to me how it was funded and how much private funders gave?
2. How do you get in touch with the private partners? Is it necessary to have a certain project before contacting the local potential partners?
3. What was the motivation that incentivized people to move forward with the public transportation development?
4. How did your city work with the government officials when developing public transportation project?
5. What do you think about private-public collaboration in terms of developing public transportation? Do you think one has more weight than the other?
6. What are the major barriers to establishing private public partnerships?
7. What do you think that attracts private partnerships most in transportation development projects? What are the motivations for private partnership to fund in projects?
8. What was the motivation for funding?
9. Who made it happen?

After each interview, the authors discussed the findings together and shared notes on the interviews. Throughout these discussions, commonalities between case studies were explored. Additionally, the authors discussed how these findings might relate to St. Louis. These discussions resulted in our key recommendations

# Findings

## Public-Private Partnerships as an Option

One alternative to traditional public sector funding is to create a public-private partnership. According to the Federal Highway Administration (2015), public-private partnerships are “contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects” (U.S. Department of Transportation, 2015). Although some transit projects are now funded through public-private partnerships, this form of funding has a historical association with transportation infrastructure like bridges and highways, particularly in the form of toll roads (U.S. Department of Transportation, 2015).

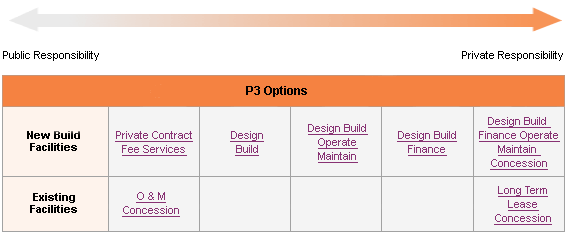
Traditionally, highways and other transportation infrastructure are funded by taxes or tolls, i.e. user fees. In the U.S., taxes are the most common form of funding transportation projects (U.S. Department of Transportation, 2015). In France and Spain, private companies have performed most of the legwork in designing, building, financing, and then operating tolled highways. This became a popular model by the 1990s and has been replicated around the world. In the U.S., public-private partnerships have been undertaking more complex forms of risk sharing since the 1980s with public owners transferring more of the responsibility to private partners (U.S. Department of Transportation, 2015).

According to Siemiatycki (2006), public-private partnerships have become more popular for transit projects for two reasons: to lower political interference and increase accountability with the goal of cutting down on costs and poor performance, and to inject private capital resources into government projects without relinquishing public sector control. In the first case, uncontrolled costs and poor performance have resulted from past projects that were dominated by public sector players (Siemiatycki, 2006). Private projects are expected to have higher rates of adherence to budget, timeline, and quality standards. The U.S. Federal Highway Administration (2015) further explains that public-private partnerships “provide benefits by allocating the responsibilities to the party – either public or private – that is best positioned to control the activity that will produce the desired result.” This includes faster completion, cost savings, better quality and system performance or techniques, “substitution of private resources and personnel for constrained public resources,” and “access to new sources of capital” (U.S. Department of Transportation, 2015).

## Models of Public-Private Partnership

There are several models of public-private partnership that reflect different balances of risk bearing between public and private partners. The Federal Highway Administration (U.S. Department of Transportation, 2015) publishes the following range of public-private partnership models:

Figure 1

[[1]](#footnote-2)

These models vary on a scale of how much responsibility and risk is borne by the partners.

* Private contract fee services: In this model, a public owner hires a private firm to manage the program, often including financial, engineering, and construction management. This is the most basic form of partnership, and the public agency retains most of the responsibility and all of the risk for the project under advisement from the private firm (U.S. Department of Transportation, 2015).
* Design-Build or Design-Bid-Build: In this model, the owner uses a single contract for both engineering and construction. The public agency retains responsibility and risk of financing and operating the project, while shifting the design and construction responsibilities to the private firm for a fee. The public agency will often design the initial portion of the project in order to guide bids from private firms for the completion of the project (U.S. Department of Transportation, 2015). This is a very common model for transportation projects with financing raised through bonds or debt and repaid with taxes or user fees (Siemiatycki, 2006).
* Design-Build-Operate-Maintain or Design-Build-Transfer: In this model, the private partner takes on more responsibility; however, the public partner bears the financial burden and risk or reward. This model allows for efficiencies in combining the building and maintenance of the project and helps lower costs in the long-term (U.S. Department of Transportation, 2015).
* Design-Build-Finance: This model is similar to the Design-Build model, with the private partner taking full or partial responsibility for financing while maintenance and operation remain the responsibility of the public agency. This model is primarily used to defer payment, particularly if there are cash flow barriers that prevent the public partner from upfront financing. Deferred payment may also be used as an incentive for the private partner to accelerate the project, thereby more quickly accessing payment. This delay of payment places a greater risk burden on the private partner than in a Design-Build Model (U.S. Department of Transportation, 2015).
* Design-Build-Finance-Operate-Maintain-(Concession): Private firms are given a public interest or issue to address and then design, finance, own, and operate the project and infrastructure. Revenue comes from user fees and, in the case of transit projects, government subsidies (U.S. Department of Transportation, 2015). This model “is intended to blend the innovative capacity of private enterprises working in competitive environments with the role of government in setting specifications and supervising to ensure that performance standards are met” (Siemiatycki, 2006, p. 139) and places the most risk and responsibility on the private partner, while retaining oversight and project objective control for the public partner. These contracts are often completed for an agreed amount of time after which the public agency may take over operations and maintenance or may renew the contract (U.S. Department of Transportation, 2015).

## Case Study: Atlanta

Atlanta serves as a good model for St. Louis in many ways. Like Missouri, Georgia is among the worst states in the U.S. for funding public transit (Simes, 2014a). While Metro Atlanta Rapid Transit Authority (MARTA) does receive funding from a sales tax in all the counties in which it operates, it has been able to diversify its funding through other resources (Long, personal communication, April 1, 2015). This, as well as a general shift in public opinion of MARTA in Atlanta, has allowed the agency to expand and become profitable (Long, personal communication, April 1, 2015). To understand the story of MARTA’s comeback, we interviewed three individuals: David Emory from Citizens for Progressive Transit, and Saba Long and Ryland McClendon from MARTA.

Despite experiencing major hurdles in the past, it seems as if MARTA is finally gaining momentum (Saporta, 2015). Recently, MARTA began its expansion into Clayton County, a mostly suburban area which, according to MARTA representatives, has “a lot of untapped potential” (Long, personal communication, April 1, 2015; McClendan, personal communication, April 3, 2015). The year before the Clayton expansion, MARTA collaborated with the City of Atlanta and the Downtown Business Association to form the Atlanta Streetcar. Also recently, MARTA expanded its bus and train service, with trains now coming every 5 minutes on the mainline, while they formerly arrived every 20 minutes (Long, personal communication, April 1, 2015). With new projects every year, improved service, and a transit budget that is now ‘in the black,’ Atlanta has a lot to teach any city whose public transit expansion seems to be somewhat stalled (Long, personal communication, April 1, 2015). To tell the story of Atlanta’s transit comeback, one must look back at a low point during the financial crisis in 2009.

In 2009, Clayton County, a suburban county of Atlanta, lost its bus service. At the time, MARTA was helping to run Clayton’s bus service, which was funded through the Clayton County budget. When the financial crisis hit, Clayton could no longer pay MARTA to run its buses, and all service was discontinued. In fact, MARTA service cuts happened all over. This spurred the “Save Marta” campaign, a grassroots initiative to increase support and ridership of MARTA (Emory, personal communication, April 2, 2015). A separate grassroots campaign was organized to bring MARTA to Clayton, called Friends of Clayton Transit.

Friends of Clayton Transit was formed to increase both political and grassroots support for MARTA expansion into Clayton County (Emory, personal communication, April 2, 2015). Churches, the Sierra Club, Georgia Stand Up, and others came together in support of Friends of Clayton Transit by starting canvassing drives and social media blitzes in order to raise awareness (Emory, personal communication, April 2, 2015). A former state representative served as a de facto leader and the business community came together to become the major funding source for this campaign (Emory, personal communication, April 2, 2015). In addition to widespread public support, the Clayton County Board of Commissioners first needed to vote yes to putting a MARTA referendum on the November ballot. The board vote hinged on a single commissioner, who was the swing vote. According to David Emory of Citizen for Progressive Transit, this board member felt that he could not vote in opposition to widespread public support. In 2014, Clayton embraced MARTA with a 74% yes vote (Emory, personal communication, April 2, 2015). MARTA was voted in with a one penny sales tax, which had been the same amount that had previously gone to bus service in Clayton County (McClendon, personal communication, April 3, 2015). With one half of this penny, MARTA would immediately begin operating bus service in Clayton. The other half of the penny would ultimately go toward a “lockbox,” helping Clayton County to save up for light rail or heavy rail expansion in the future (McClendon, personal communication, April 3, 2015).

In December of 2012, Keith Parker took over leadership of MARTA, inheriting a blooming deficit (Parker, 2014). Immediately, he began transforming MARTA’s finances and service. At the start of Fiscal Year 2014/2015, revenues exceed budgeted expenses by $9.5 million. This was in large part due to an increase in ridership and a fare evasion program, which suppressed freeloaders (Parker, 2014). Additionally, cost-cutting initiatives like automating payrolls and putting pay stubs online instead of printing paper stubs made a big difference (Long, personal communication, April 1, 2015). Because of MARTA’s financial turnaround, their bond rating was upgraded, allowing them to make even more money (Parker, 2014). MARTA also began leasing extra space around stations to developers, which brought in further income and increased ridership. According to MARTA representatives, more national businesses are moving to Atlanta and establishing their businesses right next to a MARTA train station (McClendon, personal communication, April 3, 2015).

Other programs targeted making the riding experience better, thereby improving ridership. A program called Ride With Respect reduced loud music and disrespectful behavior on MARTA, reduced crime, and included an initiative to limit freeloaders. Lighting was upgraded to create a better atmosphere in stations (Parker, 2014). Pay was also raised for MARTA Union workers (Parker, 2014). Consequently, there has been extensive positive media coverage of MARTA, which resulted in a $1 million value (Parker, 2014). Additionally, a new app was released that allows customers to monitor when a bus is arriving (Parker, 2014.

While MARTA does not receive direct funding from businesses, private stakeholders have been a crucial part in helping to bolster support for the agency’s recent expansions. Businesses funded much of the publicity campaign that supported expansion of MARTA into Clayton County. The Atlanta Streetcar, on the other hand, which is not a MARTA program, but runs with the help of MARTA, has been a public-private collaboration between the Downtown Business Association and the City of Atlanta (McClendon, personal communication, April 3, 2015). This project aims to spur development in Atlanta’s somewhat neglected downtown district (Beagle, et al., 2014).

New transit projects are in the works both for MARTA, and for the Atlanta Streetcar, which aims to expand its services and route (Beagle, et al., 2014). Public opinion about transit in Atlanta has skyrocketed in the last few years, and seems likely to continue to climb (Saporta, 2014). Talking about one of Metro Atlanta’s counties that does not have MARTA service, David Emory of Citizens for Progressive Transit said. “I feel pretty sure that if you brought a referendum to Gwinnett County today, they’d probably support it.” MARTA is “no longer a four letter word,” many are saying, even in the state legislature (Saporta, 2014).

## Case study: Cincinnati

The Cincinnati Streetcar project, aiming to revitalize the city, is a transit development which will be operational by 2016 (Lopez, 2013). The $148 million streetcar project encompasses 3.9 miles of light rails that will connect Cincinnati’s uptown area and the downtown loop and is funded through a combination of public and private investment (Protransit, 2015). Various factors have contributed to the success of the Cincinnati Streetcar project. The most important factor was having champions who passionately applied their efforts to influence implementation. These two champions were John Schneider from Protransit: Alliance for Regional Transit and Eric Avner from the Halie Foundation. Schneider and Avner gathered support for the project, personally recruiting private business leaders and community members to the cause, and even securing funding to clear the final hurdle to implementation.

Beginning in 2001, Schneider led tours of the streetcar in Portland, Ohio at least two to three times per year, driving carloads of Cincinnati citizens two hours east to Portland to witness the convenience and the ease of a streetcar (Schneider, personal communication, March 19, 2015). Schneider’s tourist groups included a mix of business leaders and government authorities, including the mayor and several congressmen. Overall, approximately 490 people visited the streetcar in Portland through one of Mr. Schneider’s tours. In order to disseminate the idea of bringing a Portland-like streetcar to Cincinnati, Schneider also participated in city council meetings and delivered speeches to private audiences, including student groups.

In 2007, Mayor Mark Mallory brought an initiative forward that proposed a streetcar project, but the project remained politically stalled for several years. Following the support of the mayor, community organizations such as the Downtown Residents Council came out in support of the project (Thiede, 2007). In 2009, strong opposition groups threatened to derail the project claiming that Cincinnati had no need for a streetcar. In reaction to opponents, Protransit and other pro-streetcar coalition groups worked to open up a referendum on the issue 9 ballot, which resulted in continuing the project (Protransit, 2015). Although $52 million of federal funding were allocated by the state for the streetcar project, opposition continued. In 2011, streetcar proponents posted another referendum and the project survived once again due to popular support (Pichler, 2013). Under President Obama’s *America Built to Last* initiative, U.S. Transportation Secretary Ray LaHood approved $39.9 million of the 2013 budget proposal directly for the Cincinnati streetcar project (U.S. Department of Transportation, 2012). However, in the meantime, a new mayor, John Cranley, was elected. Cranley stopped the project due to final budget constraints, and intended to deny spending for the streetcar for the next 10 years (Pichler, 2013).

At this time, Eric Avner from Haile Foundation (a private foundation who funds projects which will improve the quality of life for residents of Cincinnati) gathered business leaders to support the streetcar project (Haile U.S. Bank Foundation, 2015). Avner offered for Haile to fund $1 million for the streetcar operations (Lopez, 2013). When the mayor asked for higher funding resources for a longer period of time, Avner and the CEO of the Haile Foundation gained consensus from 14 other business leaders to fund $900 thousand dollars per year for 10 years (Pichler, 2013). Avner had attended the streetcar tours organized by Schneider several times in 2007 and 2008 and became convinced that a similar project will benefit the city of Cincinnati. After this remarkable funding resource from private foundation, the Cincinnati Streetcar project was passed in 2013 (Pichler, 2013).

Besides advocacy from Schneider and Avner, other factors combined to enable this project to be approved. According to Schneider (personal communication, March 19, 2015), in 2008 and 2009, gas prices skyrocketed. At the same time, people wanted to revive the downtown area and the Over-the-Rhine neighborhood. In addition, Cincinnati became a Green Power Community in Ohio under a green city initiative; it is the sixth city in the nation to bring green power to the community (Cincinnati USA, 2015). Finally, the city council followed public support and voted in favor of the project and approved the following measures to fund the streetcars: parking fees in the downtown area including a violation fee ($35-$50), property tax abatement reduction by 7%, and fares and advertisements that total $3.8 to $4.5 million (Simes, 2014b).

According to Schneider (personal communication, March 19, 2015), the streetcar project will be the frontline project for any type of light rail public transportation in Cincinnati. The streetcar project is designed to complement other development in the area. The rails will be compatible for integration with other types of light rail, such as a subway system in the future. The project is also integrated with the redevelopment and revitalization of the Over-the-Rhine neighborhood, which has experienced a major social and economic boost since the early 2000s with the formation of the Cincinnati Center City Development Corporation. People from both downtown Cincinnati and Over-the Rhine in the northern part of the city wanted the streetcar to increase their mobility (Over-the-Rhine Chamber, 2015).

## Case Study: Denver

Denver, in recent years, has undergone great changes because of the dramatic development of public transportation. Regional Transportation District (RTD), as a regional authority operating public transportation services and undertaking a series of public transit projects, has played a leading role in the development of public transit in Denver. RTD is governed by a 15-member of board of directors, each representing a district of approximately 180,000 residents [see Appendix A]. Through interviews with two RTD directors – Bill James and Jeff Waller – we investigated how RTD was able to establish their public-private partnerships and how they have benefitted from these partnerships, hoping to apply what has been learned from RTD to the future expansion of transit projects in St. Louis.

The Colorado General Assembly established RTD in 1969 in order to promote the development of a mass transportation system (RTD, 2015). RTD is the regional provider of various public transit services for 2.87 million people. The largest and most influential of RTD’s projects is the FasTracks program. The FasTracks program is currently the largest transit expansion program in the United States. It will provide 122 miles of new rail service, 18 miles of bus rapid transit, 57 new stations, 31 new Park-n-Rides, and more than 21,000 new parking spaces (RTD, 2015). In addition, Union Station will also be redeveloped under the program and will become the hub of the rail system in Denver. The FasTracks program is comprised of several projects – Central Rail Extension, North Metro Rail Line, East Rail Line, Northwest Rail Line, Flatiron Flyer, Southeast Rail Extension, Gold Line, Southeast Rail Extension, and I-225 Rail Line. These nine projects are mostly funded by sales tax revenue, which is the largest funding resource of RTD (Waller, personal communication, April 13, 2015). Nevertheless, sales tax revenue is merely part of the funding. The Eagle P3 Project, a public-private partnership under FasTracks, is an innovative funding approach for RTD. The East Rail Line and Northwest Rail Line in the FasTracks program are funded by Eagle P3. The total project funding is $2.2 billion, of which $486 million from private business and $1 billion in federal funds (RTD, 2015).

The FasTracks program is the biggest transit expansion in the nation. The program was designed based on the demand from both the city and its residents. Each year, RTD conducts customer satisfaction surveys to understand riders’ view of existing services and lines and future needs [see Appendix B] (Waller, personal communication, April 13, 2015). The FasTrack expansion was proposed to the city’s development agenda in response to this passenger feedback. In the early 1990s, a program called Guide the Ride was proposed; however, citizens voted the program down because it was not specific enough and they could not see the real value from the program (James, personal communication, April 3, 2015). Learning from the failure of Guide the Ride, FasTracks was proposed in the early 2000s with details of potential construction and how the city as well as the residents would benefit from the program. Local mayors and other government leaders understood the necessity of developing public transit in Denver and were in favor of the program. They persuaded voters to support initiation of the design process. Presentations to the public clearly identified specific corridors, bus and rail lines, and parking lots that would be built. Given the specific plan, the program was finally approved by voters.

Each year RTD evaluates the operation of the entire FasTracks program. The 2007 Annual Program Evaluation published great financial challenges confronting RDT since the initiation of the FasTracks program. RTD then proposed a strategy to obtain funding from the federal government by participating in the Public-Private Partnership Pilot Program (Penta-P) hosted by U.S. Department of Transportation (USDOT). In 2007, USDOT announced that the East Rail line and the Northwest Rail Line were selected to participate in Penta-P. Penta-P is an unconventional fundraising approach that applies public-private partnerships in the Design-Build-Finance-Operate-Maintain model (usually used for infrastructure) to transit projects (Istrate & Puentes, 2011).

RTD sought a public-private partnership to augment available federal funding, since the current political environment makes it is impossible to receive funding sufficient to complete expansion projects (James, personal communication, April 3, 2015). In order to attract private investment in the Eagle P3 project, RTD held a public-private partnership industry forum in 2008 to pitch the Eagle P3 projects to potential investors who might recognize the opportunity for profit (Waller, personal communication, April 13, 2015). During the industry forum, RTD described what would be done in the project and expectations of the private partner responsibilities. Potential investors got a clear idea of how they could benefit from the project, and many were willing to invest (Waller, personal communication, April 13, 2015). It was expected that the project would benefit from private sector engagement in mass transit development, as private firms tend to have advantages over the government in some aspects of development (James, personal communication, April 3, 2015). More importantly, RTD would save money and reduce risks in the program (Rall, Reed, & Farber, 2010), for example, a bridge in the East Rail Line needed to be removed and replaced because of some construction problems. The expense of removal and relocation was not paid by RTD but by the contractor – Denver Transit Partners. The money RTD saved was able to be utilized in construction of other projects (James, personal communication, April 3 2015).

RTD’s experience launching FasTracks demonstrated a few key lessons. First, citizen support is one of the most important components that contribute to the success of a public transit project. To increase people’s interest in public transit as well as enhance their awareness of the importance of developing mass transit, Transportation Alliance organized a Citizen’s Academy to educate the population and gain support (James, personal communication, April 3, 2015). This strategy helped Eagle P3 to be more successful than an earlier FasTracks public-private partnership proposal that was confusing to the public and aroused suspicion of private involvement in public transit (James, personal communication, April 3, 2015). In addition, RTD used the Citizen’s Academy and other small-scale engagement strategies to seek partnership at the local level. Transportation Solutions is a transportation management association that establishes partnerships with local business groups such as the major shopping malls and organizations within the city of Denver, because access to their knowledge of the community helps improve the transportation system (James, personal communication, April 3, 2015).

# Discussion: Recommendations and Implications

## Summary of Main Findings

### Atlanta

* + **MARTA needed to reestablish trust with the community in order to develop a base for momentum for new projects.** During the recession, there were significant service cuts and MARTA’s finances were failing. With the induction of the new CEO, books were balanced, and riding became a more pleasant and safe experience. This had ripple effects in on MARTA’s ability to take on new projects.
  + **Grassroots support is key.** During the 2009 service cuts, there was a campaign called “Save MARTA.” This campaign raised awareness about the possibility of losing service, and was a good way to advertise the services that MARTA did provide. Additionally, during the expansion into Clayton County, another grassroots movement called Friends of Clayton Transit was instrumental in bringing the MARTA expansion to a public referendum.
  + **Business support will come when businesses can see opportunity for profit.** In the case of the Atlanta Streetcar, businesses invested funds because research was done proving that the streetcar would spur investment in the downtown area.
  + **Influx of populations from cities with transit expect the same in their new city.** As Atlanta becomes more of a national urban center, populations and businesses are moving in that expect a strong transit system. Consequently, development near MARTA and Atlanta Streetcar stations has become highly profitable.
  + **Political support followed grassroots support.** A growing awareness of the economic and social benefits of public transit has generated political advocates.

### Cincinnati

* + **Strong leaders can motivate large crowds.** As a personal evangelist for the streetcar project, John Schneider was able to recruit other influential supporters and coordinate efforts with grassroots initiatives to keep the project alive in the face of political opposition. Eric Avner played the same role in motivating the business community to put funding behind their support.
  + **Multiple funding sources offer a strong incentive for more investment.** Federal funds were combined with private funding before the project could pass final approval. Although the private funds were seeded from one foundation, a coalition of private funders provided the final push to ensure the project’s political success.
  + **External factors and social context can create a climate of support.** High gas prices, green city improvements, and downtown revitalization efforts combined to boost public support for the project. In addition, the city-county split in Cincinnati delayed acceptance by some voter groups.
  + **Operational concerns can significantly slow the process.** Much of the debate over funding that delayed the project was centered on the cost and management plan for a private operator.

### Denver

* + **A well-designed and well-communicated project plays an important role in winning support from citizens.** The FasTracks is a sophisticatedly designed project with clear, specific goals that citizens could easily understand and support. Conversely, Guide the Ride was not specific enough and did not demonstrate clear benefits for citizens. Thus, citizens voted against Guide the Ride, but in favor of FasTracks.
  + **Transparency can enhance trust among citizens, private businesses and the operator.** RTD exposed the details of how much they received from the federal government and the private sector and how they would capitalize on the funding, which ensured that the funding was used appropriately, assuaging fears of both voters and potential investors.
  + **Public funds can encourage the private sector to engage in public transit projects.** RTD was selected to join in the Public-Private Partnership Pilot Program (Penta-P) and established the Eagle P3 project. They received more than $1 billion from the federal government to the construction of FasTracks Program. The considerable federal funding attracted more than 300 private businesses to engage in the Eagle P3 program. Therefore, good public input can make operater more trustworthy and can ensure the private businesses that they can make profits from the program.
  + **Public-private partnership has multiple advantages**. One of the obvious advantages of public-private partnership is that it provides more funding sources. In addition, it allows for reduced risk borne by the public partner by shifting responsibilities to the private partner.

### Generalized Takeaways

Drawing conclusions from the three case studies, there are several critical aspects to successfully implementing a public-private partnership transit project. It is necessary to have three sectors of support: civic support, political support, and funding/business support. It is also necessary to have a trusted transit operator and strong independent actors to drum up support in the three sectors.

In order to meet these needs, a project must have champions and partners appropriate to each sector of support, proof of operational efficiency, trust in the management of the transit project, and a strong business case for the project.

* Civic support: To gain civic momentum, project organizers can use direct engagement, partnership, and population-level awareness campaigns. Direct engagement may rely on grassroots-level engagement tools such as town halls or focus groups to understand the public needs and priorities and to enlist public support. It is also important for organizers to partner efforts with other complementary causes or trends such as green living, biking coalitions, neighborhood unification or development, and civic action movements by seeking common interests and identifying causes in line with transit expansion. Through engaging with other civic organizers, transit promoters can access larger groups of citizens and build collaborative momentum, benefitting both the transit project and the partner cause. Other sources of support include engagement with student and youth organizations and local media partners. In addition, transparency of the programs and planned use of funding will attract both civic and private support.
* Political support: Political support can be rallied through a political champion if one is available, particularly in providing access to funding or in the role of project evangelist among decision makers. However, without a champion within the political system, project organizers can leverage civic support and possibly private sector support to pressure leaders to vote in favor of the transit project. In addition, seeking partnership with local and regional economic development agendas may be a successful strategy for recruiting political allies.
* Funding or business support: To gain access to private funds, support must be raised in the local business community. Private investment is encouraged by the presence of seed funding. These funds may be sourced from a federal or regional project or, as in the case of Cincinnati, from a private foundation or other interested partner. In addition, project organizers and champions must make an economic case for businesses to recognize the benefits that an investment could provide to them. The case is made stronger with transparency in the process, as well as clear delineation of responsibilities and risks taken on by project partners.

It is necessary to have all three of these levels of support to initiate a successful transit project with a public-private partnership. Civic support is ultimately the foundation of a successful project, while private support can catalyze the development of the partnership and acceptance of the project. Political support is necessary, but may rely on a preliminary basis of civic support. Alternatively, political support can be used to promote the other two types of support. When two of these types of support are present, the net effect is a snowball effect – supporters can take actions to develop more support and to pressure the other sector to accept the project.

Naturally, a final factor in a successful project is consideration of the local context. How these three sectors are engaged will depend heavily on which actors hold power to engage other actors. In Cincinnati, the Haile foundation is strongly engaged in the community already and carries weight with policy makers and local business leaders. In Denver, government actors and project organizers emphasized the importance of local partnerships and community-level communication to motivate action. In Atlanta, embedded environmental organizations like the Sierra Club stepped up to galvanize MARTA’s expansion into Clayton County.

## Recommendations based on findings

Given our findings, we have identified some next steps for CMT in applying these principles to St. Louis.

Refine the focus: Our case studies included multi-faceted projects with multiple priorities, but funding was secured with a fairly narrow focus. With a list of 43 projects, St. Louis faces a complex and relatively unfocused transit agenda. It may be easier to gain support for one or two projects whose success can be pointed to when promoting future projects. It is more difficult to promote broad support for public transit than to rally behind a smaller, more focused agenda. If some of these 43 projects may be grouped under a single theme, this may be sufficient to present as a refined focus. Specific steps include:

1. Assess where there is current support.

CMT should engage directly with the community to identify potential community partnerships and areas where there is already significant support or that are most likely to gain support. In this way, momentum can be harnessed more efficiently.

1. Prioritize one or two key projects that are most likely to gather support.

Build support: CMT has been able to gain support for public transit in the past, but the level of support was not high enough to successfully secure funding and the requisite approval. We believe that CMT staff understand the dynamics of St. Louis politics and have had success organizing in the past. Strategically developing partnerships and recruiting evangelists for public transit would reinforce the support that CMT has been able to develop in the past.

1. Strategically design a support plan to target all three support segments.

This plan should rely on two pieces for each support segment – recruiting champions and building partnerships.

1. Civic Support: One struggle for St. Louis transit is lack of civic support. In addition to anecdotal evidence of general apathy toward transit development, the failure of Amendment 7 speaks to the current inertia against transit expansion. From our case studies, we have seen that the approach taken in pursuing Amendment 7 works when there is overwhelming support for a project, but not in the case of lukewarm support. We believe that a referendum could be successful to fund a portion of transit expansion only if there is widespread demand for that expansion and particularly if there is other funding also available (the seed-funding approach). A major hurdle in rallying this support is the divide between interests in St. Louis City and St. Louis County. The best path forward for enlisting civic support may be to align public transit priorities with community organizing groups who are already active and pursuing community interests that coincide with expanded public transit. These could include groups organized around increasing economic opportunities for blighted areas in the northern party of the city, which have been galvanized by events in Ferguson. In addition, partnerships with other similarly-minded organizations like Great Rivers Greenway and St. Louis Biking will help CMT to maximize the effectiveness if its resources.
2. Political support: Although CMT has gotten political support in the past, there has not been a strong political champion able to recruit further support. This is an area where the presence of a champion will be crucial. Rather than looking within governance structures, CMT should also look to other influencers in the area who may align with the prioritized project agenda and could rally both political and civic support. CMT should also ask political supporters to leverage their positions to share information about the benefits of public transit to community groups, as was done in Denver.
3. Business support: If public-private partnership is to be a viable option for transit expansion in St. Louis, local business associations need to be involved. CMT should continue working with East-West Gateway Council of Government, but should also look to the Regional Business Council and to the St. Louis Economic Development Partnership to seek common interests and to identify points where community interests match the interests of the business community. CMT (and its partners) will also need to articulate the economic benefits to the business community of the selected transit projects. Making this economic case will help rally support, and can also provide rationale for public transit expansion for key players who may help promote civic support as well.
4. Actively engage with partners to pursue the strategy for more support.

CMT is not sufficiently resourced to oversee this scale of strategic support building alone and will need to depend on partnerships to act on a plan that will build enough support to progress with transit expansion projects. Ideal partners may be found by examining groups with similar interests such as Great Rivers Greenway, or by identifying groups already working on development issues including Urban Strategies. Other groups that may be able to leverage community networks are United Way and the Nine Network.

### Leverage support to secure funding:

1. Work with Metro to establish (and publicize) efficiencies.

In order for public-private partnership transit projects to be successful, the operator must be operationally efficient and well trusted. Part of building civic support includes building the image of the operator. MARTA gained this support with proof of efficient service and operations, accompanied by good publicity and promotion. In addition, where there is room to reduce cost in operations, more funding can be used on future maintenance and expansion.

1. Seek funding opportunities from federal (or other) programs.

Although the Penta-P program has closed, there may be other sources of federal funding that can provide a base of support to attract other investment. We believe that the role of this funding should be secondary to securing support. In our case studies, funding was successful as a starting point for other investment when there was other support behind the project. In Cincinnati, funding from the Haile Foundation overcame the critical hurdle for the project, and this was leveraged through community support and the action of project champions. We believe that when there is enough support and demand for the project, funding from one source will trigger funding from another. Without this support, the project will suffer from insufficient funding and will not get approval to move forward.

1. Continue to learn from other successful projects. Through our interviews, we learned about ongoing projects using public-private partnerships that might be areas for further research: Bay Area Metro Program, San Francisco, CA; Capital Beltway HOT Lanes, Northern Virginia; Chicago Skyway, Chicago, IL; GREENbike, Salt Lake City, UT; Houston Metro Program, Houston, TX; Indiana Toll Road, Indiana, IN; Maryland DOT Purple Line, Baltimore, MD; and North Tarrant Express, Fort Worth, TX.

# Limitations

Our project had several strengths. First, we had thorough discussions with our project sponsor, which equipped us with the proper perspective to get the big picture for our project. Secondly, we had access to knowledgeable and experienced sources who have shared openly and candidly about their experiences and understanding of best practices for public-private partnerships. Finally, our three case studies provided a varied perspective of drivers for success in promoting and funding public-private partnerships.

Our project inevitably has its limitations. While our case studies have offered a rich picture of how public and private actors can collaborate on transit projects, they comprise a small sample size and may be biased by idiosyncratic conditions and dynamics more subtle than our research distinguished. Because of the various social, economic, and political environments of the cities we studied, findings will have to be extrapolated for St. Louis. This means that more work needs to be done to analyze the St. Louis environment and Metro St. Louis as an organization. Once this work is done, it will become clear which of our findings are most useful for the St. Louis region. Additionally, our data was gathered through in-person interviews. In some cases, then, facts given to us by representatives of the transit agencies were not double checked, because they were not available to us through other means.

## Risks

While we believe each of our recommendations has great potential, they also each have risks. For example, in reference to our first recommendation, “Refine the Focus,” there is the risk that picking one or two transit projects out of the list of 43 could alienate people who harbor greater support for the projects that are not chosen. This risk can be mitigated by sustained engagement with the community throughout the project’s timeline. Additionally, the projects that are chosen should be those for which the community has expressed most support. Once the focus is narrowed, support for the project or projects can be gathered from the whole community; until one or two projects are chosen, however, widespread community support for a single project is impossible. A risk to our second recommendation, “Build Support” may be that finding champions for public transit projects is time-consuming or that champions are ineffective. This risk can be avoided by strategically approaching influential people who may be interested in transit and expanding the list of possible candidates for champions. Champions need not be political figures, but may rather be well-connected members of the community who do not hold official governing roles. Finally, a risk to our last recommendation, “Leverage support to secure funding” is that there is a limit to how much funding good publicity and increased efficiency can secure. While Atlanta’s MARTA valued their good publicity at $1 million, there may not be the same potential for improvement on MetroLink’s public image. Additionally, MetroLink may already be running very efficiently, and so improving efficiency any more may have a limited impact.  A preliminary evaluation of MetroLink’s public image in the community, as well as their overall efficiency, will be valuable in determining the effectiveness of this approach.

# Conclusion

We recognize the struggles involved in promoting public transit, particularly in the St. Louis region, but we found valuable and applicable lessons from the three case studies. Public-private partnerships may be an interesting way to increase funding available for public transit, but more importantly, there are opportunities to build partnerships and cause-allies to generate the public and private support that is necessary for successful transit expansion.

# References

Beagle, et al. (2014). The Atlanta streetcar development and investment guide. *Urban Collage/Lord Aeck Sargent for Central Atlanta Progress*. Retrieved from http://www.atlantadowntown.com/\_files/docs/corridor\_development\_and\_investment\_guide-ver3.pdf

Cella, K. (2014, August 06). Moving forward after Amendment 7. [web log]. Retrieved from http://cmt-stl.org/moving-forward-after-amendment-7/

Cella, K. (2014, December 16). Transit on the move in 2014 – A year in review. [web log]. Retrieved from http://cmt-stl.org/transit-on-the-move-in-2014-a-year-in-review/

Cincinnati USA. (2015). Green Cincinnati: Cincinnati USA is eco-friendly! Retrieved from http://www.cincyusa.com/cincinnati/green

Citizens for Modern Transit. (2015) *About us*. Retrieved from http://cmt-stl.org/wp-content/uploads/2008/09/membrshp\_web\_2014.pdf

Citizens for Modern Transit. (n.d.) *Member benefits* [Brochure]*.* Retrieved from http://cmt-stl.org/wp-content/uploads/2008/09/membrshp\_web\_2014.pdf

City of St. Louis. (2014, June 02). Mayor Slay announces priority projects for state-proposed 3/4 cent transportation sales tax. [web log]. Retrieved from<https://www.stlouis-mo.gov/government/departments/mayor/news/transportation-sales-tax.cfm>

Department of Community Development. (2012). City of Cincinnati’s tax abatement program: Cincinnati is paying buyers to buy. Retrieved from http://www.cabr.org/pdfs/CityofCincinnatisTaxAbatementProgram.pdf

Fisher, L. (2014, November 12). CMT commissions study to look at funding mechanisms for transit in the region. [web log]. Retrieved from<http://cmt-stl.org/cmt-commissions-study-to-look-at-funding-mechanisms-for-transit-in-the-region/>

Haile U.S. Bank Foundation. (2015). *About us*. Retrieved from http://www.haileusb.org/

Istrate, E. & Puentes, R. (2011). Moving forward on public private partnerships: U.S. and international experience with ppp units. *Brookings-Rockefeller Project on State and Metropolitan Innovation*. Washington, D.C.: Brookings Institute.

Giuliano, G. (2005). Low income, public transit, and mobility. *Transportation Research Record: Journal of the Transportation Research Board, 1927*, 63-70. doi: 10.3141/1927-08.

Johnson, N. & Leachman, M. (2013, February 14). Four big threats to state finances could undermine future U.S. prosperity. *Center for Budget and Policy Priorities.*

Lachapelle, U., & Frank, L. (2009). Transit and health: Mode of transport, employer-sponsored public transit pass programs, and physical activity. *Journal of Public Health Policy, 30*, s73-s94. doi:10.1057/jphp.2008.52

Litman, T. (2004). *Rail Transit in America: A Comprehensive Evaluation of Benefits*. Victoria, British Columbia: Victoria Transport Policy Institute.

Lopez, G. (2013 December 17). Private groups plan to pay for streetcar operations: foundation lists more than a dozen business, philanthropic leaders in support. *City Beat*. Retrieved from<http://citybeat.com/cincinnati/blog-5358-private_groups_back_plan_to_pay_for_streetcar_oper.html>

MARTA. (2011). *Marta Fact Sheet*. Retrieved from <http://www.itsmarta.com/uploadedFiles/News_And_Events/Newsletters/MARTA%20Fact%20Sheet%20010611.pdf>.

Metro Transit. (2010). Moving transit forward: executive summary. Retrieved from http://metrostlouis.org/Libraries/MTF\_documents/Moving\_Transit\_Forward\_executive\_summary.pdf

Metro Transit. (2015). *Benefits of transit*. Retrieved from http://www.metrostlouis.org/RidingMetro/BenefitsOfTransit.aspx.

Nakamura, D., & Mufson, S. (November 12, 2014). China, U.S. agree to limit greenhouse gases. *The Washington Post*. Retrieved from http:// [www.washingtonpost.com/business/economy/china-us-agree-to-limit-greenhouse-gases/2014/11 /11/9c768504-69e6-11e4-9fb4-a622dae742a2\_story.html](http://www.washingtonpost.com/business/economy/china-us-agree-to-limit-greenhouse-gases/2014/11%20/11/9c768504-69e6-11e4-9fb4-a622dae742a2_story.html)

Over-the-Rhine Chamber (2015). OTR’s Renaissance. Retrieved from http://otrchamber.com/pages/OTRsRenaissance

Parker, K. (2014 May). The state of MARTA [Powerpoint presentation].

Pichler, J (2013). Cincinnati Streetcar: How the deal went down. *Cincinnati.com*. Retrieved from http://archive.cincinnati.com/article/20131219/BIZ/312190132/Cincinnati-Streetcar-How-deal-went-down

Protransit (2015). *In General: Cincinnati Streetcar*. Retrieved from<http://www.protransit.com/In-General/2008/10/cincinnati-streetcar.asp>

Rall, J., Reed, J., & Farber, N. (2010). Public-private partnerships for transportation: A toolkit for legislators. *National Conference of State Legislatures*.

Regional Transportation District. (2012). *2013 Comprehensive Annual Financial Report*. Retrieved from <http://www.rtd-denver.com/PDF_Files/Financial_Reports/2013Comprehensive_Annual_Financial_Report.pdf>

RTD. (2015). *FasTracks: Eagle P3 Project*. Retrieved from http://www.rtd-denver.com/FF-EagleP3.shtml

RTD. (2015). *FasTracks- Transforming transportation in Colorado*. Retrieved from <http://www.rtd-denver.com/Fastracks.shtml>

Sanchez, T. (1999). The connection between public transit and employment. *Journal of the American Planning Association, 65*(3), 284-296.

Saporta, M. (2015 January 14). MARTA is making a comeback, with or without funding. *WABE*. Retrieved from http://wabe.org/post/marta-making-comeback-or-without-funding.

Savage, I. (2004). Management objectives and the causes of mass transit deficits. *Transportation Research Part A: Policy and Practice, 38*(3), pp181-199.

Siemiatycki, M. (2006). Implications of public-private partnerships on the development of urban public transit infrastructure: The case of Vancouver, Canada. *Journal of Planning Education and Research 26*, p137-151.

Simes, R. (2014 February 7). Chart: the best and worst states in America for transit funding. *UrbanCincy*. Retrieved from http://www.urbancincy.com/2014/02/chart-the-best-and-worst-states-in-america-for-transit-funding/.

Simes, R. (2014). System Designs Unveiled, Operating Agreement Reached for Cincinnati Streetcar. *UrbanCincy*. Retrieved from http://www.urbancincy.com/2014/12/system-designs-unveiled-operating-agreement-reached-for-cincinnati-streetcar/

Thiede, C. (2007). The Downtown Residents Council Resolution on Cincinnati Streetcar. Retrieved from http://www.ilivedowntown.com/DRC%20Resolution%20on%20Cincinnati%20Streetcar%20-%20Sept%2012%202007.pdf

U.S. Department of Transportation: Federal Highway Administration. (2015). *P3 defined*. Retrieved from http://www.fhwa.dot.gov/ipd/p3/defined/.

U.S. Department of Transportation (2012). U.S. Transportation Secretary LaHood kicks off construction of Cincinnati’s new streetcar line, highlights President Obama’s call for greater investment as part of an ‘America Built to Last.’ [web log]. Retrieved from<http://www.dot.gov/briefing-room/us-transportation-secretary-lahood-kicks-construction-cincinnati%E2%80%99s-new-streetcar-line>

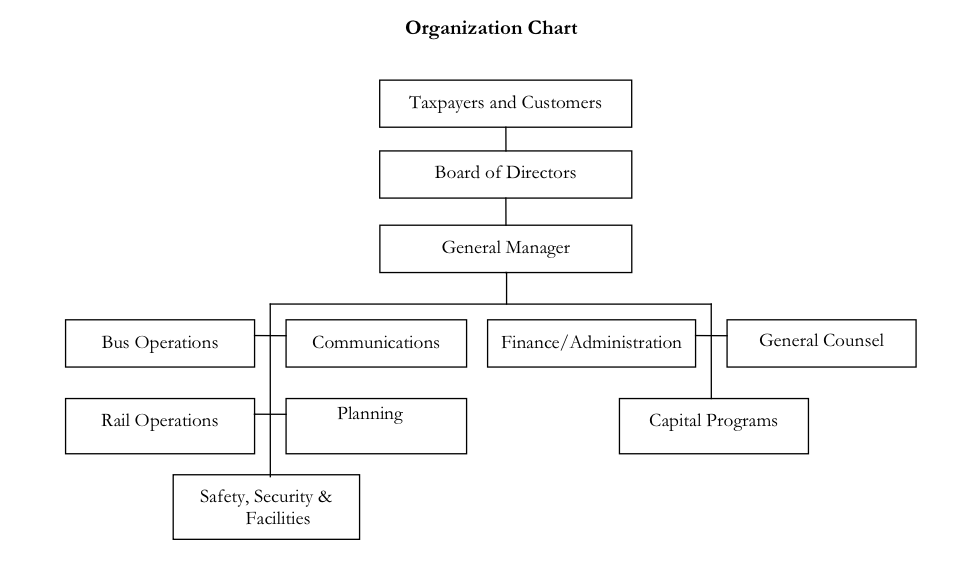
Winston, C., & Maheshri, V. (2007, September). On the social desirability of urban rail transit systems. *Journal of Urban Economics, 62*(2), 362-382.

Worthing, J. (2014). New Financial Plan Proposed for Streetcar. *The Xavier Newswire.* Retrieved from<http://xaviernewswire.com/2014/09/18/new-financial-plan-proposed-for-streetcar/>

# 

# Appendices

## Appendix A: Organizational Structure of RTD



## Appendix B: Light Rail Customer Satisfaction Survey

Macintosh HD:Users:Jingqi:Desktop:www.rtd-denver.com_PDF_Files_08 Light Rail Report.pdf

1. Image from http://www.fhwa.dot.gov/ipd/p3/defined/ [↑](#footnote-ref-2)