

Appendix A (Case Studies)

BRT System Case Studies

This section includes four case studies highlighting other regions in North America that have implemented BRT projects. These regions are Cleveland, Ohio, York, Ontario, Canada, Albuquerque, New Mexico, and Eugene-Springfield, Oregon. Each case study is organized with sections about their reasons for selecting BRT, route details, BRT features and system details, outcomes, challenges, and lessons learned. They provide information that is helpful in understanding how other cities overcame challenges to implement BRT, as well as what has happened to the city as a result of the system. It will also be useful for Milwaukee as it develops messages to communicate about what BRT can do for the city.

A.1. Cleveland, Ohio

BRT System: HealthLine

BRT Project Slogans: *"It's not a bus. It's not a train. It's the future"* and *"Better Rapid Transit"*

The city of Cleveland, Ohio has many similarities to Milwaukee that make it a useful case study. Being both Midwestern cities, Cleveland has a similar climate to Milwaukee and demonstrates that rapid transit can work in a city that has to deal with the snow and cold. Cleveland is also a rust belt city like Milwaukee with a similar industrial past that has seen economic decline, and population loss in the last several decades. Completed in 2008, Cleveland's Bus Rapid Transit system called the HealthLine is considered one of the most successful BRT systems in the country. It aimed to revitalize a struggling commercial corridor similar to Wisconsin Avenue and parallels the East-West Corridor by connecting a downtown to universities and major employment center in the healthcare industry.

Choosing BRT

The HealthLine route runs along Euclid Avenue, a once-thriving and prosperous commercial corridor until the 1950's, when it became rampant with vacancies and high poverty rates. In finding a suitable public transit solution for the corridor, the city looked to the first BRT system in the world, the system of Curitiba, Brazil.¹ With a low cost, and efficiency and quality comparable to rail transit, BRT became the locally preferred alternative for Euclid Avenue.



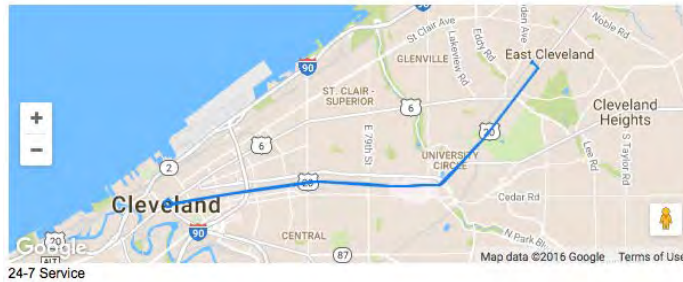
Made possible with heavy support from the city's mayor turned Ohio Governor turned U.S. Senator, George Voinovich, the HealthLine is a successful example of BRT system that has

¹ Crowley, Michael. *The Cleveland HealthLine - Transforming an Historic Corridor*. Rep. Washington, DC: Institute for Sustainable Communities, 2012, p2.

made substantial positive impacts to the city on a route that exhibits similar characteristics to the East-West Corridor.

Route

The HealthLine is a replacement to the Route 6 bus line, one of the most used lines in the Greater Cleveland Regional Transit Authority (RTA) system. Running along 6.6 miles of the Euclid Avenue commercial corridor, the HealthLine links Public Square in Cleveland's downtown with the Louis



HealthLine Route Map (RTA/GoogleMaps)

Stokes Transit Station at Windermere in East Cleveland. While Route 6 had 108 stops, the HealthLine has 36 stations; the most notable being Cleveland State University, University Circle, and the Cleveland Clinic. After the HealthLine was implemented, existing local bus routes were maintained and four routes still use some portion of the corridor to connect the Cleveland Clinic to other parts of the city.

Features and System Details

The HealthLine is the only BRT corridor in the United States that is designated Silver under The BRT Standard. With median-aligned stations, platform-level boarding, and 4.5 miles of dedicated center lanes from downtown to University Circle, the system is a significant upgrade from Route 6 bus line. Other time-saving features include off-board fare collection and a significant reduction in the number of stops. The Euclid Avenue corridor is now home to multiple bus routes and mixed traffic. To



Passenger Boarding HealthLine Station (source: Sasaki)

save time, BRT buses have traffic signal prioritization and mixed traffic is prohibited from turning across the center busway lane at most intersections.² Service levels have also increased with the development of the Healthline. The system runs 24 hours a day, 7 days a week, with higher frequencies of 5 minutes during the peak period, and 8 to 15 minutes off-peak.

² Hook, Walter, Stephanie Lotshaw, and Annie Weinstock. *More Development For Your Transit Dollar: An Analysis of 21 North American Transit Corridors*. Rep. New York: Institute for Transportation & Development Policy, 2013, p123.

Branding of the system is evident in the new BRT vehicles. The Cleveland Clinic and the University Hospital partnered to purchase the naming rights, calling it the HealthLine to reflect the prominence of the healthcare industry in the area. A fleet of 21 new articulated buses with hybrid engine technology, GPS communication, security cameras, and multiple door boarding have enough seating for 47 sitting and 53 standees³. The buses are sleek in black and gray with the system's name across the side of the bus. Besides attractive, environmentally-friendly buses, new stations also increase the level of service. With by generous seating, covered waiting areas, and signage, the stations provide a more attractive environment for passengers. Safety is increased with 24-hour lighting, security cameras, and emergency phones. Stations also include



Renovation of 668 Building along HealthLine Route (source: Steven Litt)

real-time electronic message boards displaying bus arrival time and fare-payment kiosks that help save time and add convenience for passengers.

Outcomes

Six years after the completion of the HealthLine (2008-2014), annual ridership increased by 60% from the route 6 bus line, with 48% of the growth occurring in the first year (RTA).⁴ In 2012, the average weekday ridership was upwards of 15,800. While many BRT riders were existing route 6 riders, about 13% of new passengers came from the nearby rail line and 18% were former automobile commuters. Bus speeds have increased by 34%, from 9.3 mph, pre-BRT, to 12.5 mph.⁵ Improvements have led to a 30% reduction in

route runtime, from 40 minutes to 28.

The BRT has spurred an abundance of new transit oriented development, particularly in the Downtown and University Circle neighborhoods. Thousands of residential units are helping to recover Cleveland's lagging residential population. The system has also stimulated the development of a number of hotels, the Museum of Contemporary Art, and millions of square feet of commercial development.⁶ In addition to the new development, "property values have doubled overall along the Euclid Avenue corridor in the last six years, and some properties have increased much more sharply."⁷ The project cost a total of \$200 million, with \$50 million spent on BRT vehicles, stations, and platforms, and \$150 million for enhancements of the street and

³ "RTA Healthline." *Euclid Corridor Transportation Project*. Greater Cleveland Regional Transit Authority, n.d. Web. 22 Oct. 2016. <http://www.rtahealthline.com/healthline-what-is.asp>

⁴ "RTA's HealthLine - The World-Class Standard for BRT Service." Greater Cleveland Regional Transit Authority, 2012. <http://www.riderta.com/healthline/about>

⁵ Hook, et al., p123.

⁶ Hook, et al., p132.

⁷ Hook, et al., p139.

infrastructure on Euclid Avenue.⁸ This transit investment has generated \$5.8 billion in development. Taking just the money spent on the BRT system and not additional street enhancements, \$114 for each transit dollar invested has been generated. However, this number is exceptionally high and development can also be attributed partially to the high investment in street enhancements that includes new infrastructure, landscaping, and street furniture.

Challenges

One of the biggest challenges with the public's and political officials' perception of a new BRT system. While there were many political advocates for the BRT, other politicians like the three new mayors during the time pre-construction were unfamiliar with riding transit and therefore uninformed about the benefits of BRT. Greater Cleveland Regional Transit Authority (RTA) was in charge of educating new elected officials about the value the system could bring to Cleveland.⁹ RTA spent a lot of time meeting with the officials, learning about their vision for city and discussing how BRT could help add to that vision. They were able to work collaboratively and educate the officials on the technical details and process of implementing BRT. These discussions were successful in that there were few political disruptions in the years leading up to the HealthLine's implementation.

Typical HealthLine Median-Aligned Station (source: Joshua Gunter)

It was also difficult to gain the public's acceptance. In order to increase ridership over the existing bus line, targeting people of other demographics that wouldn't normally ride the bus, especially the professional class, was necessary. There is a long-time Cleveland culture that "suits don't ride buses".¹⁰ To combat this, the marketing strategy focused on showing the BRT more as a first-class rail system than a bus system. Posters and images as well as a quality website helped to convey this message to the public. By heavily branding the system and high-quality BRT features, they were able to alter the impression of many wary residents. Residents and businesses were also worried about the impact on traffic and potential loss of parking. Dedicated lanes were only implemented in portions of the corridor where "parallel streets could accommodate the diverted traffic with minimal impact."¹¹ Both the center-running bus lane in the dedicated lane portion and mixed-traffic portion helped to maintain some street parking. However, most on-street parking spaces were relocated. In an early case study by the Transportation Research Board, the BRT was projected to reduce the number



⁸ Hook, et al., p6,121.

⁹ Crowley, p3.

¹⁰ Crowley, p6.

¹¹ "Euclid Avenue BRT, Cleveland, Ohio." *National Association of City Transportation Officials Case Study*. NACTO, n.d. Web. 21 Oct. 2016. <http://nacto.org/case-study/euclid-avenue-brt-cleveland-oh/>

of curb spaces from 726 to 208 on the premise that these parking spots could be relocated to spaces along side streets or in garages.¹²

Lessons Learned

Overall, there are many lessons to be learned from the HealthLine's success. One is the importance of support and collaboration, both politically and publically. A lot of the success can be attributed to George Voinovich, who was a consistent advocate for the HealthLine during his tenure as Mayor, Governor, and U.S. Senator.¹³ Without him securing funding and gaining support from other politicians, implementation would have been a lot more difficult. Support from businesses was also key, like the Cleveland Clinic and University Hospital. Working with the local Community Development Corporations all throughout the process led to buy-in from the community, which helped to design a quality system and ease construction disruptions.¹⁴ Another lesson learned is to focus on branding the BRT as "Better Rapid Transit" that would accommodate all area residents, including both professional choice riders and transit-dependent residents.

A.2. VivaNext Line in York – Metropolitan Region of Ontario, Canada. Slogan: "Be moved."

Reason for choosing BRT

York selected BRT over other mass public transportation options predominantly due to its cost effectiveness overall, innovative means to connect riders to existing public transportation, potential to connect to future transit options, and its ability to develop and accentuate present business opportunities.

York's BRT line, VivaNext, is similar to the proposed BRT system in Milwaukee as both cities have a growing, relatively young professional population in need of effective public transit, both have struggling business sections on their corridors and thriving medical complexes that need better means to transport their growing number of employees. As noted within the East-West Feasibility study, the population with the most growth are 18 to 34 year olds and a key area on the corridor in need of better transit is the Medical Center in Wauwatosa (AECOM, 2016). Additionally, both York and Milwaukee are cold weather cities that require stations featuring heated areas for waiting riders, in real time scheduling updates and digital ticketing options to minimize exposure to the winter elements.

According to the Viva York "Reports" page on their website, at public hearings residents requested a faster public transit option and congestion reduction at a cost effective level. Implementing BRT allowed York to focus on the key issues of efficiency, speed and promised

¹² "Cleveland, Ohio - Euclid Avenue BRT." *Transit Cooperative Research Program 90.1* (2003): *Transportation Research Board*. Web. 3 Dec. 2016. <onlinepubs.trb.org/onlinepubs/tcrp/tcrp90v1_cs/Cleveland.pdf>.

¹³ Crowley, p6.

¹⁴ Crowley, p8.

growth (with additional routes later) when more fiscally feasible (“VivaNext: Reports”, *VivaNext*. 2016).

Route overview

According to York’s “Completed Projects” website page, the VivaNext BRT route joins the East and West Corridor from York’s Downtown area (Davis Drive & New Market) to the Westside Medical Complex (called Southlake Regional Health Care Center). It goes through distinct “urban destinations to work, dine, relax, live and shop” – a strip of commercial investments with BRT stations built near certain hubs to encourage an increase in foot traffic and commerce (“VivaNext: Completed Projects”. *VivaNext*, 2016). The corridor is roughly 2.6 km long. The York BRT offers dedicated lanes in key sections of the corridor, curbside lanes in residential areas, and intersects momentarily with Highway 404 (“VivaNext: Completed Projects”, *VivaNext*. 2016).

Features and System Details

According to its “Frequently Asked Questions” section, VivaNext describes the elements of its BRT as a “rapid way.” Rapid ways are in the center of roads with dedicated lanes for VivaNext vehicles only, and allow buses to get past congested traffic (“VivaNext: FAQ”, *VivaNext*. 2016).

Below are some features of the Rapid way technology noted in the Rapid Construction section of VivaNext’s website (“VivaNext: Rapid Transit Construction in Newmarket”, *VivaNext*. 2015).

- A public announcement system
- Motion sensor heaters and automated entry doors to minimize heat loss
- Two-way emergency call button
- Emergency security surveillance and intercom on platforms

Additionally, noted in detail on the Viva’s “Our Technology” page, Viva vehicles are equipped “with Computer-Aided Dispatching (CAD) and Automatic Vehicle Location (AVL) systems which offer real-time service information to riders” (“VivaNext: Our Technology”, *VivaNext*. 2016). CAD also offers real-time tracking and centralized dispatching. According to the in-depth description under “Real Time Technology” on their website, VivaNext BRT vehicles are “processed by the CAD system and provides bus positions, schedule adherence and incident information to a Viva Control Center” (“VivaNext: Our Technology”, *VivaNext*. 2016).

York also utilizes Traffic Signal Priority (TSP) to provide faster travel of BRT vehicles through busy intersections. The TSP system on VivaNext is allowed to assert a priority level and can result in a green light signal extension or having a red light signal hold, depending on the traffic needs (“VivaNext: Our Technology”, *VivaNext*. 2016).

Lastly, VivaNext’s Bus Rapid Transit stations use a “proof-of-payment” system which expedites boarding for passengers. Riders buy their fares using a ticket vending machines located at all stations and terminals (“VivaNext: Our Technology”, *VivaNext*. 2016).

According to an article about recent additions to stations near the Business Center and Main Corridor, each York station was given the below upgrades (“VivaNext: “Form Meets Function.””, *VivaNext*. 2015):

- “Up-lighting” providing light on detailed pattern featured on the steel supports and glass paneling on station roofs.
- Real-time schedule updates on station screens posted in waiting areas.
- Heated waiting areas on each platform.
- Emergency security cameras
- Windscreens for inclement weather and potentially to feature public art.
- Covertly designed gutters and downspouts to handle excessive drain water.

Summary of Outcomes

According to an in depth report provided by the York Region Transit, VivaNext was built using existing funds provided by a \$1.8 Billion Provincial investment in the York Region; this helped to build the first half of the BRT network (York Region, 2016).

Some additional positive effects of BRT mentioned by the York Region update report:

- Improves mobility within the region and between communities
- Improves intermodal connectivity within York’s other existing transit options
- Provides critical access and connectivity to other VivaNext BRT routes already in service or under construction
- Promotes mixed-use land development and increase density on the corridor
- Significantly reduces urban sprawl
- Produces economic stimulus, especially during construction.

Summary of Challenges

A recent article was written about concerns voiced from citizens about the number of empty busses on Davis Drive (Downtown District on east west corridor) since Viva has been implemented which was seen as waste of taxpayer's money (Simon, C., 2016). Developers and city officials have asked riders and taxpayers to be patient as the system gains traction, and eliminates gaps and overlap in scheduling. Also of concern to residents, is while York has been busy building the new BRT infrastructure, the rest of the city’s bus network that feeds into the Viva system has been widely neglected (Simon, C., 2016).

Also, as mentioned in an article earlier on in the VivaNext development period, York widened Highway 7 to accommodate the two bus lanes while maintaining six through traffic lanes, forcing pedestrians to cross seven traffic lanes, two bus lanes and two bike lanes (Marshall, S. 2013). Furthermore, local services, such as the parallel highway bus, only load from stops that are situated on the curb or on the near-side of an intersection, making it difficult for commuters to transfer (Marshall, S. 2013).

Key Lessons Learned:

Viva demonstrates the success and need of a mass transit service – enabling the Yonge Street and Highway 7 rapid transit corridors to fulfill their mission to become major transit arteries in the York Region. VivaNext successfully encourages more transit-oriented development which will and has led to more affordable housing options for young families, seniors and newcomers. Lastly, VivaNext won marketing awards for their public transit campaign, proving the manner in

which BRT/light rail/train is portrayed makes the difference in its success short and long term in all parts of the process: implementation, development, use and maintenance.

A.3. Eugene-Springfield, Oregon.

Slogan/Name: West EmX or "Emerald Express"

Reason for choosing BRT Eugene-

Springfield developed a BRT corridor called the "Emerald Express" (EmX) and due to the growing population, despite the region being too small to support light rail, the city recognized the only way to reduce existing congestion, eliminate parking issues and lower automobile and pedestrian crashes /injury was to implement a BRT (*LTD Eugene, 2016*). Also the existing LTE system was successful, but lacking in connectivity. The BRT was the cost effective solution to all of these issues (*LTD Eugene, 2016*). Additionally, in Eugene-Springfield BRT was treated as being part of an integrated system rather than a backup for light rail, and was more readily accepted by the public. The "Emerald Express" was also subsidized by payroll taxes and transit agencies conducted extensive public outreach and education campaigns (*LTD Eugene, 2016*).

Route overview

According to the LTD Eugene website under "Maps, Stations and Routing", the Emerald Express (EmX) serves the Eugene-Springfield metropolitan area in Oregon and its current route connects the central LTD bus stations in Eugene and Springfield using the Franklin Boulevard corridor (*LTD Eugene, 2016*). Detailed on this LTD route website page, the West Eugene EmX line travels the corridors of West 6th, 7th, and 11th Avenues, and Garfield and Charnelton Streets (*LTD Eugene, 2016*). In brief, the starting station on the Westside of the corridor is a mall area (Target & Wal-Mart) and then ends at Lane County Health and Human Services complex on the eastside (*LTD Eugene, 2016*).

Features and System Details

According to the *EmX Franklin Corridor BRT Project Evaluation* back in April 2009, the features of the EmX BRT stations and vehicles were to include:

Fare Collection: BRT offers a free system, designed to operate as a "pre-paid" fare system. Riders need to provide a valid fare cards or use their smart phone application to ride a designated EmX vehicle.

Bike Friendly Vehicles: Lane County is an established cycling neighborhood with an emphasis on "multi-modalism"(*LTD Eugene, 2016*). It was important to this community that bicycle bays included on BRT vehicle, specifically in the interior, not at the front exterior. LTD developers worked with a local panel of cycling experts to test the best way to secure bikes inside the vehicle (*LTD Eugene, 2016*).

Intelligent Transportation Systems: Eugene's BRT utilizes an Intelligent Transportation Systems (ITS) technology which helps to operate the entire system. According to the evaluation, the ITS includes the use of Transit Signal Priority (TSP), the Automated Vehicle Locator (AVL),

Automated Passenger Counters (APC), and computer automated dispatching (CAD) (Tann, H., 2009).

Transit Signal Priority (TSP): BRT vehicles are given signal priority at critical intersections. According to the evaluation, there are 23 intersections along the route from Springfield and 22 along the route from Eugene (Tann, H., 2009).

Summary of Outcomes

Finally, as reviewed in the *EmX Franklin Corridor BRT Project Evaluation* in April 2009, are some of the outcomes of the EmX BRT program:

Higher Ridership - EmX BRT began on January 14, 2007 and has increased ridership along the corridor. Ridership numbers have increased from approximately 4,000 riders in February 2007 to almost 5,400 in April 2008 (Tann, H., 2009). Eugene predicted that ridership over the twenty-year period would increase by approximately 50% over a regular transit service: this means a ridership of approximately 4,200 passengers per day and ridership has grown to over 6,600 passengers a day since October 2008 (Tann, H., 2009).

Cost: Since the EmX includes a number of enhanced treatments, i.e., enhanced stops, transit signal priority, and hybrid vehicles, costs for the EmX were “on target”.

Environmental Quality Improvements Overall: Quality of life, health and well-being of the public, as well as the attractiveness and sustainability were considered at all points during this project. By implementing a BRT system in this corridor there were three effects that improved the environmental quality of the region.

EmX Franklin Corridor BRT Project Evaluation notes the effects were:

- Technology Effect – Propulsion technology reducing vehicle emissions
- Ridership Effect – BRT ridership increases because people make fewer trips in cars
- System Effect – Congestion is reduced which reduced vehicle emissions

Land Development: The EmX has been successful in generating interest in land development. A local realty firm attributed increased interest in properties to the proximity to a bus rapid transit line.

Summary of Challenges

Challenges for the Eugene-Springfield BRT are explored in depth in the *Case Study: Springfield and Eugene, Oregon* (Crowley, M., 2016) and are listed below:

- The advocacy group, “Friends of Eugene”, believed that BRT would be too expensive, and that it wouldn’t deliver the ridership LTD was promising.
- The business community understood the argument that the BRT needed full support to be successful, yet held back on it until after the project could produce data on the efficiency and effectiveness of the investment.

- Residential areas on West 11th Street would have originally, according to the BRT plan, had street parking and landscaping removed and homeowners valued spaces and character of trees on street immensely. So even though W. 11th Street was the most direct route the BRT had to reworked in this area to go around.
- Community response overall wasn't positive or clear. As noted by one participant in the Springfield-Eugene Case Study, "There's a mix of both understanding it correctly and not liking it, and not liking it and letting your imagination run wild."

Key Lessons Learned

Lessons for the Eugene-Springfield BRT were also discussed in the *Case Study: Springfield and Eugene, Oregon* (Crowley, M., 2016) and are listed below:

Consider City Ordinances: Eugene is an environmentally minded community and has city ordinances that don't allow for the removal of any tree in the right of way (that is over 50 years old) without holding a public vote. While it did not stop the BRT construction process, LTD did have additional cost due to examining the root structure.

Communication with Stakeholders: Eugene has an active and deeply involved community. Because of this, LTD approached the planning and implementation phases with stakeholders in mind. The developers worked diligently to keep all parties informed throughout the process, which resulted in smoother implementation of the system.

Political Advocacy: LTD asserts that having a "political champion" would have been a beneficial asset to the planning process. There were a number of challenges that LTD faced early on where having a political advocate within the community helped with project acceptance.

Marketing is Key:

The last lesson learned by Eugene during the planning process is the importance of visualization. Not only was it necessary to "sell" the community on the system, but LTD also found it important to keep employees interested and empowered throughout the process (Crowley, M., 2016).

A.4. Albuquerque

"Transit for our Future"

Reason for choosing BRT

Albuquerque chose BRT over other forms of transit for this corridor for numerous reasons. Located along the old route 66 highway, this corridor has seen large increases of traffic since its creation in 1926. They wanted to increase the walkability of this corridor and bring it back to its glory. BRT could be the key to spurring development in this corridor. The overall goal of ART is to connect people, create place, and drive opportunity. The increase of service to this corridor will hopefully spur development and interest in this area.

Route overview

ART is located along the old Route 66 highway that is iconic in this area. As seen in the map below there are many different roadway configurations used to serve BRT in this route including bi-directional lanes, median lanes, mixed flow and reversible lanes. Not all of the corridor is up to BRT standards, but they had to work with a very old section of their community. The feasibility report is found here:

<https://www.cabq.gov/transit/documents/BRTFeasibilityStudy.pdf>.

Features and System Details

This rapid system includes many different aspects of BRT. This system utilized stations in the middle of the road, with mostly dedicated lanes throughout the system. They also made sure that service was frequent, with 5-minute headways at peak times. ART also has prioritized signaling at intersections, which speeds up service times for the overall system. Every ticketer must also pay before they get on the bus, making the system comply to BRT standards. Station platforms provide level boarding. The buses utilize double sided boarding so that the bus can serve stations on either side of the bus.

Summary of Outcomes

ART spurred development in this area by attracting major players such as ABQ health partners. These developments utilize the historic existing structures, but attracting new businesses and offices. The faster and sleeker ART attracts the young and the old to use the system. The baby boomer generation has reported less interest in owning a car or even having the ability to use a car, so ART is essential in designing for the elderly. Also this line serves students that do not have access to a car. The new system has also attracted new ridership to the line, so the traffic has improved in the corridor. The line is not fully complete so a complete analysis is not able to be fully made at this time.

Summary of Challenges

Parking is always an issue with any type of redevelopment, but with some planning the ART system was able to create 50 new parking spots throughout the corridor. People were also concerned about the amount of trees being cut down, but they were able to add 30 new trees with the added amount of greenspace along the corridor. Also emergency vehicles could utilize the dedicated bus lanes, so that relieved the stress placed on the emergency vehicles. The corridor was difficult to fit a dedicated lane into, so they were able to utilize a bus that had doors on each side, making boarding on the center or the edge of the system easy. They created a document to explain the myths and resolutions to their challenges here:

http://abqbrt.blob.core.windows.net/resources/Mythbusters_Final.pdf

Also they had to deal with outreach to the public, and they dealt with this by holding numerous events along the corridor and about the project. One event included the ArtBeat events to support local businesses during construction. Also they held an event where community members could talk with a contractor over coffee to discuss how BRT could work. Overall, Albuquerque was able to get the positive word out about BRT so that it is currently being constructed.

Albuquerque had to deal with how to get funding for the project. They were able to secure a FTA Small Start Grant for \$ 69.0 million, a FTA / FHWA Grants (specifically for BRT, Transit Vehicles, and Central Avenue) for \$ 30.9 million, a Local Funds Infrastructure Tax for Central Avenue for \$ 5.1 million, Central Broadband for \$ 1.0 million and GRT Revenue Bonds (Appropriated by City Council per O-15-46) for \$ 13.0 million. This totals the \$119.0 million to cover the cost of construction.

Key lessons learned

ART connected once very separate parts of the city. It also spurred development throughout the corridor. It needed to compromise throughout the systems by utilizing different types of lanes, but that was because of the restrictions placed on the land around the corridor. The system was able to compromise on the set up the dedicated bus lanes by creating a bus that had doors on each side. ART utilizes a lot of unique promotions for the line including a card that gives locals discounts on businesses during construction of the Line to support local businesses. This card encourages people and businesses to support the project. Also they host numerous events along the line during construction to bring life into the corridor, such as their ArtBeat events.

Citations:

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