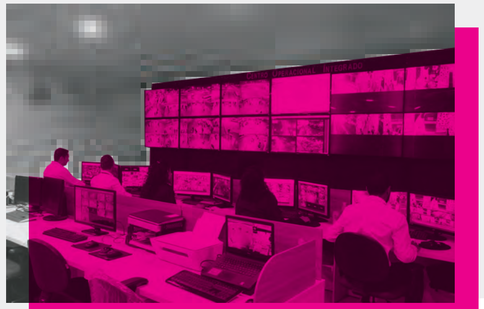
Starting Point

Over the past couple of decades, Fortaleza experienced rapid population growth, reaching over 2.4 million people by 2010, with a commensurate increase in congestion and reduction in mobility and access due to car-centric urbanization. Buses, which currently account for approximately 50% of motorized trips, were moving slower, and service was deteriorating. People could no longer rely on the system to get them where they needed to go in a timely manner, and they were turning away from using buses. Motivated by the declining ridership on buses, the city focused on short-term, high-impact solutions. Reliability and Integration were the key concepts for rethinking the whole public transport system.



Integrated Operational Center. Photo source: Fortaleza City Hall

Achievements

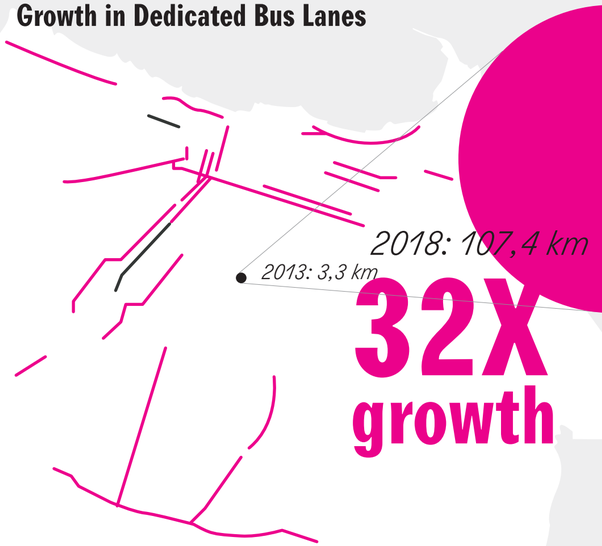
Fortaleza's bus transport network is currently composed of 320 lines and nine bus terminals with an average daily demand of 1.1 million passengers. In 2013, the city started to implement dedicated bus lanes, grounded in the 'complete streets' concept of including bike lanes and sidewalks. Since then, dedicated bus lanes have increased from 3 km to over 100 km. This includes two 'BRT-lite' corridors, which have fully segregated lanes and many BRT characteristics. The city did this by adopting a "golden rule" for priority, which states that every road with 3+ lanes must have one dedicated to transit. The city enforces these dedicated bus lanes through video monitoring. As a result, the operating speeds of buses have increased on average by 80%, and travel time for passengers has decreased significantly. For example, travel time has decreased by 50% on Av. Carapinima. The city also sought to upgrade and renovate seven terminals to provide better information, amenities, and spatial organization. This coincided with the city's decision to contract the operation and maintenance of the terminals and BRT-lite stations, which led to greater efficiency. Finally, the city has been integrating bikeshare stations and bike parking throughout the system, with a focus on the bus terminals.

BRT-lite Corridors

Fortaleza has been innovative in using technology and data. In 2013, the city introduced a single ticket policy to help with affordability of transit through a smart card option (Bilhete Unico) now used by 70% of passengers. Instead of passengers paying multiple times over the course of their journey (because of transfers or entering a new zone), now a passenger can buy one ticket for the whole trip. In 2015, the city launched its public transport app, called 'Meu Ônibus' to provide real-time information to passengers, among other features. Recently, a new feature was added to the app, with the goal of tackling sexual harassment (the Nina Initiative), that allows people to lodge a complaint or incident. Since its launch in March 2019, 505 harassment cases have been reported. The city is using data from GPS, electronic ticketing, and the app to better plan, monitor, and assess strategies to improve the dedicated bus lanes, as well bus stop locations. The data has also been used to communicate the impact of the improvements being made.

In addition to these efforts, the city developed Fortaleza's Urban Transport Plan, which allowed the city to think and plan for longer term actions, including integration between different modes of transportation and tools for monitoring and control of the transport system. These initiatives improved the efficiency and reliability of the bus transport network, helping to attract more users and increase positive public perception. In a recent survey, 77% of the surveyed passengers believe that the public transport has improved significantly since 2017.

Growth in Dedicated Bus Lanes



BRT-Lite Corridors

Fortaleza has two BRT-lite corridors, Av. Bezerra de Menezes and Av. Aguanambi. They both have all the characteristics that meet the BRT basics: level boarding, dedicated; median-aligned busways; off-board fare collection; and intersection treatments. However, they are not long enough to qualify as BRT. A corridor needs to have a minimum of 3 km of dedicated busway infrastructure for a BRT designation.

Lessons Learned

The main keys to Fortaleza's success are grounded in integration and improving reliability.

Dedicate space for transit using transparent decision-making:

Going against the trend of other Brazilian cities that have allowed mixed traffic into bus-only lanes, the city not only converted bus lanes into dedicated ones, but also expanded them across the city. The city did this establishing a clear rule for how they were approaching this using the "golden rule" for priority. The city redesigned streets with three or four lanes for mixed traffic, turning one lane into a dedicated bus lane, along with the implementation of cycling infrastructure. Despite initial resistance from the public, the positive impacts perceived by the majority of the population allowed for more daring data-driven approaches from the city to intervene in different types of roads (i.e. narrower).

Set clear goals and then mechanisms for cross-agency collaboration to achieve them:

With the creation of the Integrated Operational Center, bolstered by the goal of delivering a faster service with fewer to no delays, the city has effectively created a way for the transit agency, the traffic engineering authority, and operators to work together. This cross-coordination is rare not only in Brazilian cities, but worldwide.

Use data and technology to better understand how the system works and how to improve it:

Data from the GPS on the buses, the electronic ticketing system, and the app, including the functionality to fight sexual harassment (Nina) on buses, helped Fortaleza achieve improvements to the public transport network, especially in terms of reliability, comfort, and safety.

Going Forward

The city is now developing a new typology for priority to apply to two-lanes, two-way streets. In this scenario, the city will convert two parallel streets into one-way pairs that have dedicated bus and cycling lanes.

MOBILIZE
FORTALEZA
June 24-26, 2019

Reclaiming streets for access and mobility

RELIABILITY AND INTEGRATION: HOW FORTALEZA BROUGHT PEOPLE BACK TO BUSES

Summary of Results

- Over 100 kms of dedicated bus lanes designed as complete streets with bike lanes and walkways
- Operating speeds of buses increased on average by 80%, with significant reductions in travel time for passengers
- 77% of surveyed passengers say public transport has improved
- Single fare introduced, along with a smart card electronic payment method and app
- Features for fighting sexual harassment on buses introduced, with over 500 incidents being reported since it launched in March 2019
- Bike parking and bike share integrated at stations and terminals

Sponsors

Prefeitura de Fortaleza
TUMI Transformative Urban Mobility Initiative
ITDP

Public Transport Site Visit

Fortaleza increased ridership and improved travel times and bus speeds by dedicating space to buses in a strategy focused on integration and increasing reliability. In this site visit, we will see some of the ways that they achieved that at the following main stops and points:

Hotel Gran Mareiro 1
Departure point

Papicu Terminal 2
The intermodal terminal in the Papicu neighborhood connects the light rail system with the bus and the bikeshare systems. The bus terminal serves 51 bus lines with a total demand of 280,000 trips per day. The neighborhood is planned for transit-oriented development (including density and mixed uses) and land value capture

Av. Dom Luis 3
This location is an example of the city's "golden rule" that every street with three or more lanes have at least one lane dedicated to transit. Along Av. Dom Luis, a cycling lane was also implemented and interventions at strategic points were made to improve the safety of pedestrians

Av. Aguanambi Station O Povo 4
This is the second corridor of 'BRT-lite', which recently started operating. The corridor has median-aligned stations, level boarding, off-board fare collection, and closed, attractive, and weather-protected stations. Unlike many Brazilian BRTs, the corridor has clear and precise static real-time information and does not suffer from fare evasion

Albert Sabin Children's Hospital 5
Walking is the main way people access public transit. Here, a low-speed zone was implemented in a hospital area with over 4,000 people circulating every day. Interventions resulted in 1,989 m2 of reclaimed public space for pedestrians.

ETUFOR -Integrated Operational Center 6
The center promotes integration and collaboration between different agencies and operators that contribute to the control and delivering the service of the system, including road signaling, traffic control projects, and monitoring of the public transportation system.

Public Transport Route

Color guide

1 *Hotel Gran Mareiro*
2 *Papicu Terminal*
3 *Dom Luis Avenue*
4 *Aguanambi Station*
5 *ETUFOR*
6 *Albert Sabin*