

## CITY FEATURES



Saltillo, the capital of Coahuila, is a highly populated city in the metropolitan area, bordering the cities of Ramos Arizpe and Arteaga. The city is an urban and commercial area and is considered one of the most industrialised cities in Mexico, which is continuing to grow. In terms of transport, it offers viable alternatives to meet the current needs of the population, promotes the rights of public transport users and seeks to have more environmentally friendly units. The city has a topography sloping towards the north, with low sloping plains. The main economic activities stem from the transformation of the transport sector, the automotive industry, commerce and construction services.



Population  
**1,031,779**  
 (2022)



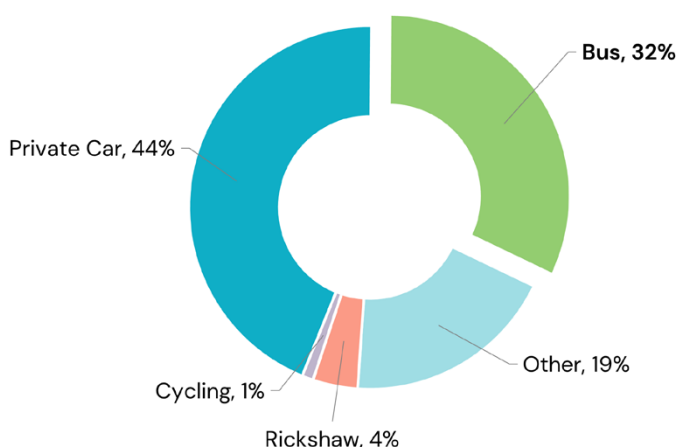
Land area  
**1,221.6 km<sup>2</sup>**



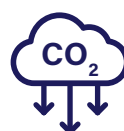
Average temperature  
**17.3°C**

## TRANSPORT FEATURES

### Modal Split<sup>1</sup>



### GHG Emission Levels<sup>2</sup>



Total GHG emissions  
**161,803.7 tCO<sub>2eq</sub>**  
 From road transport  
**1,615.1 tCO<sub>2eq</sub>**

### Air Pollutant Levels<sup>2</sup>



PM 2.5	NO <sub>2</sub>
<b>53 µg/m<sup>3</sup></b>	<b>7 µg/m<sup>3</sup></b>
PM 10	SO <sub>2</sub>
<b>58 µg/m<sup>3</sup></b>	<b>3 µg/m<sup>3</sup></b>

The main problem with the existing transport infrastructure is that it does not take inclusivity and equity into account. It is expected that the motorised vehicles will be doubled by 2030, which may lead to higher energy consumption, devastated air quality, worsening of road safety, higher congestion costs, growing social exclusion and less space on roads. The present transport infrastructure is insufficient which resulted in higher fatalities rates due to motorized vehicles. The absence of multimodal transport system requires attention of the government to counter unusual growth of motorized vehicles in Laguna Metropolitan Area.

<sup>1</sup> Sistema de Transporte Integrado (STI) en la Zona Conurbada de Saltillo

<sup>2</sup> Sistema de Monitoreo de Calidad del Aire | Estación de Monitoreo Saltillo

# BUS SYSTEMS OUTLOOK

## Bus Trips Features

The concentration of jobs is in the city centre, which attracts a large number of trips from the more densely populated areas located in the periphery. Overall, 45% of Saltillo’s total population is in the lower middle socio-economic stratum; 40% in the lower stratum; 11% in the upper middle stratum; and 3.5% of the population in the lower socio-economic stratum, according to INEGI 2010. The main trips are for study, work and home. An average trip is in the range of 45 minutes by public transport, where the main reason for travel is work. The majority (86%) are ordinary users, i.e. paying full fare; 9% are students and 1% are senior citizens. The distribution of urban and inter-municipal routes are both radial and their main destination is the city centre. Users take a route till the last stop and transfer in the city centre. Currently, 19 diesel-fuelled buses, model 2021 with 34 seated passengers (one of these, model 2023 with a capacity of 37 seated passengers), are in operation and serving users across the route on which these buses operate.



Number of bus trips<sup>3</sup>

**4,331,455**  
(2014)



Trips by gender

Men **60%**  
Women **40%**



Trips by purpose

Work **63%**  
Study **14%**  
Shopping **5%**  
Errands **4%**  
Recreation **3%**  
Others **11%**



Average time

**45 min**



Average distance

**40.9 km/day**

## Fleet and Infrastructure



Number of buses

**613**

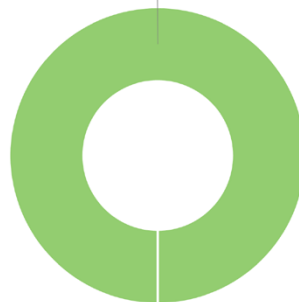


Number of routes

**32** (non-BRT)

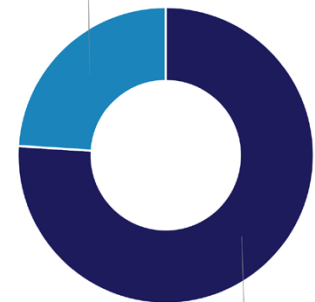
Buses by fleet type

Standard Bus, 100%



Buses by fuel type

Gasoline, 24%



Diesel, 76%

## Quality of Service

Population growth and increase in the vehicle fleet contributed to inefficient public transport operations where passengers experience long delays to reach from one point to another. Public transport is majoritarily used by the male population, leaving little room for women and children. Moreover, public transport became unsafe for women and children. Due to an influx of private vehicles, the CBD and other major areas experience congestion and traffic jams for long hours. This situation requires coordination and planning for the operations of public transport routes which helps to improve services and allows users to choose intermodal trips.



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3 Sistema Integrado de Transporte de la Región Metropolitana del Sureste de Coahuila (SITSEC), 2014



## Existing Business Model<sup>4</sup>

A

**Model A:** Vertically integrated, private operator in BRT/integrated system

B

**Model B:** Divided responsibilities in BRT/integrated system

C

**Model C:** Large, more formal, private operator in traditional service

D

**Model D:** Small, informal, private operator in traditional service

E

**Model E:** Government-run system

D

Public transport service is offered by private individuals, but the state government grants the concessions for a unit to operate. The concessionaires are the ones who define travel times. In the area, there is passenger transport: urban and inter-municipal, taxis and personal transport. The routes have their own business model, which is the man-truck relationship, and each is responsible for their use, maintenance and disposal. There are very different market arrangements (fares, routes, vehicle fleet, etc.). The current regulatory framework lacks adequate instruments to standardise and consolidate intra-municipal transport. Municipal institutional weakness favours the granting of concessions without technical criteria and the lack of regulatory control of minimum service quality standards.



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<sup>4</sup> Based on Accelerating a market transition in Latin America: New business models for electric bus deployment, P4G, Zebra and Dalberg, 2020



# OPPORTUNITIES AND CHALLENGES FOR ADOPTION OF E-BUS FLEETS



## Opportunities

- Public transport operators participate in practical trainings to improve and modernise public services. Infrastructure is being developed to provide dedicated lanes for public buses.
- The government aims to offer alternative options for an efficient, environmentally friendly and cost-effective transport system and profitable for both the government and the private operator.



## Challenges

- At present, public buses are on the verge of running out, and the bus fleet is old and rudimentary. The government must change this to be more environment friendly.
- The biggest problem is the financing of these buses, since the concessionaire does not have the capital to renew the bus fleet. Thus, needs government support in the form of subsidies at different levels.



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## About the TUMI E-Bus Mission

Funded by the German Ministry for Economic Cooperation and Development (BMZ), a core group of organizations supports cities in their transition toward electric bus deployment. For more information, please contact: [tumi-network@iclei.org](mailto:tumi-network@iclei.org) or visit <https://sustainablemobility.iclei.org/tumi/>