Transport and Climate Change Week

#TransportWeek23

Unlocking Sustainable Urban Mobility

Innovations in Policy and Financing Strategies for Urban Transport

September 12th

Rio de Janeiro-Brazil

Policy Strategies for Sustainable Urban Mobility

Transport and Climate Change Week

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- Rio has been a central player in Brazil taking the lead on climate change policies and projects since **Rio 92**.
- Rio is a C40 city and is committed to be a carbon net zero city by 2050. Policy strategies have been developed to achieve this ambitious goal.

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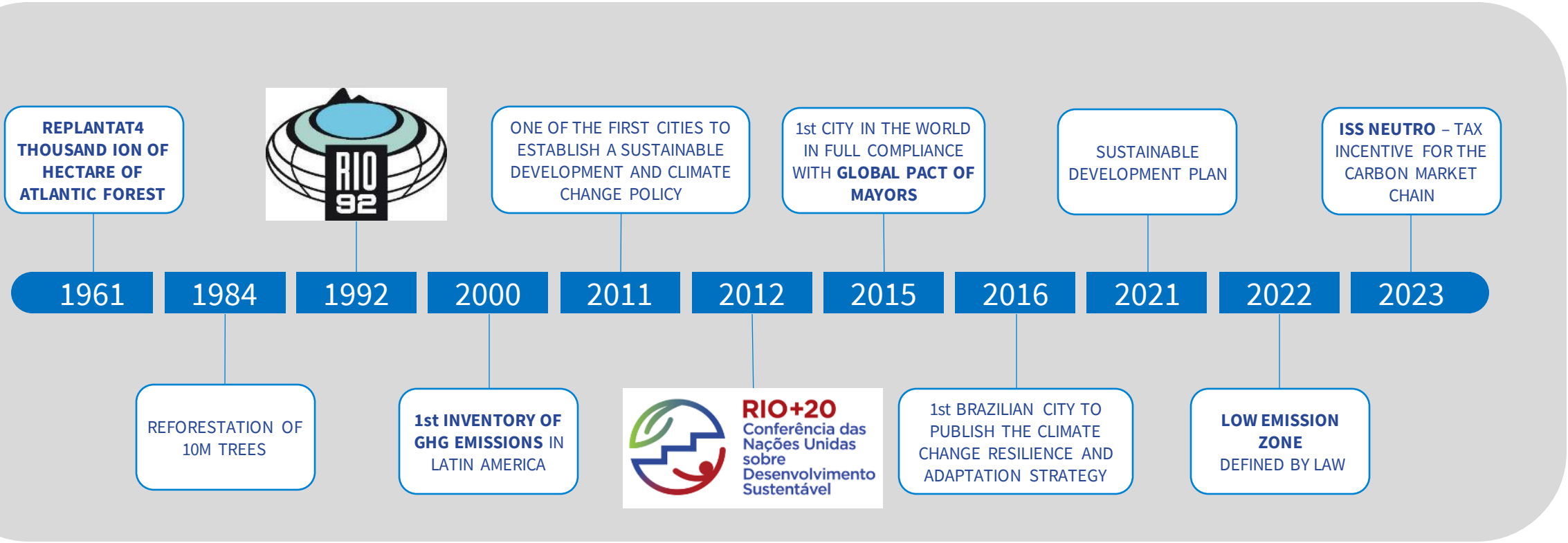
Fußnote

ENVIRONMENTAL LEADERSHIP



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Policy Strategies for Sustainable Urban Mobility

Agenda

01 Public Transportation Overview

02 Environmental Commitments and Regulations

03 Low Emission Zone

04 Eco depot for E-buses

05 Active Mobility

06 Interactive Discussion

Fußnote

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Public Transportation Overview

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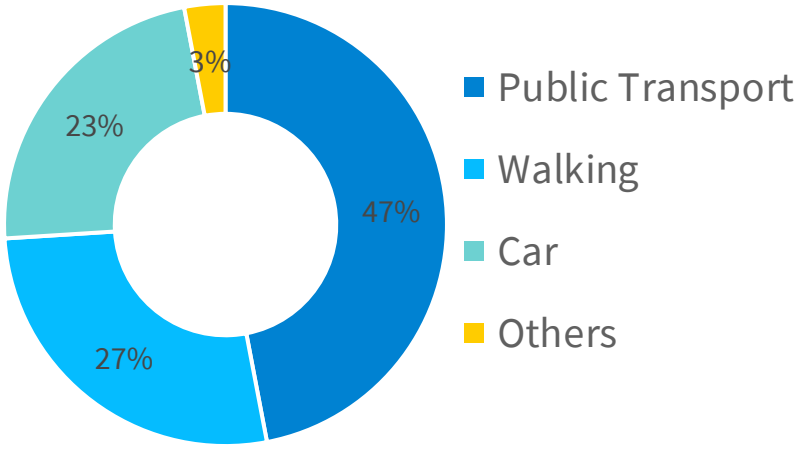
Public Transportation Overview

Population

City: 6.2m inhab.
Metropolitan Area: 13m inhab.
(IBGE, 2022)

Modes of transportation

Data for Metropolitan Area (2011)



City Public Transport usage data

3.7m passengers/day (2019)

- Conventional Buses: 3.0m pass./day (79%)
- BRT: 382 k pass./day (10%)
- Vans: 318 k pass./day (9%)
- LRT: 67 k pass./day (2%)

Number of Municipal Urban Routes

- 345 Conventional bus lines
- 26 BRT routes
- 3 LRT lines

Bicycles

- 3600 bicycles in rental system
- 447 km network of bicycle lanes

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Environmental Commitments and Regulations

In June 2019, the city signed the **Green & Healthy Streets** declaration, committing to procure only zero-emission buses in contracts and concessions signed from 2025 and ensuring that a major area of the city will be zero emission by 2030.

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Environmental Commitments and Regulation

- **Decree nº 46.081/2019 - Declaration of Green & Healthy Streets (C40) -** only zero-emission buses can be purchased from 2025
- **Decree nº 48.940/2021 - Climate action plan and sustainable development -** by 2030, 20% of the bus fleet must be zero carbon emission
- **Decree nº 51047/2022 -** by 2030, low emission zone in downtown fully implemented
- **Law nº 7907/2023 – ISS neutro tax policy**
    - Reduced taxes for zero emission activities
    - Incentives for green bonds acquisition

Plano de Desenvolvimento Sustentável

COMMITMENTS MADE
2026 – CARBON CREDIT MARKET
2030 – LOW EMISSION ZONE
2030 – 40% GREEN JOBS
2050 – NET ZERO CARBON

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Low Emission Zone

- Policy strategy to improve air quality and citizen health in Downtown
- Area : ~ 2 square kilometres
- Must be fully implemented by 2030

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Low Emission Zone

Eco depot for e-buses

In order to be in line with the Green & Healthy streets declaration, the city will have to replace its entire bus fleet with zero emission buses and provide bus depots that allow the buses to be charged with renewable energy.

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C40 CITIES FINANCE FACILITY

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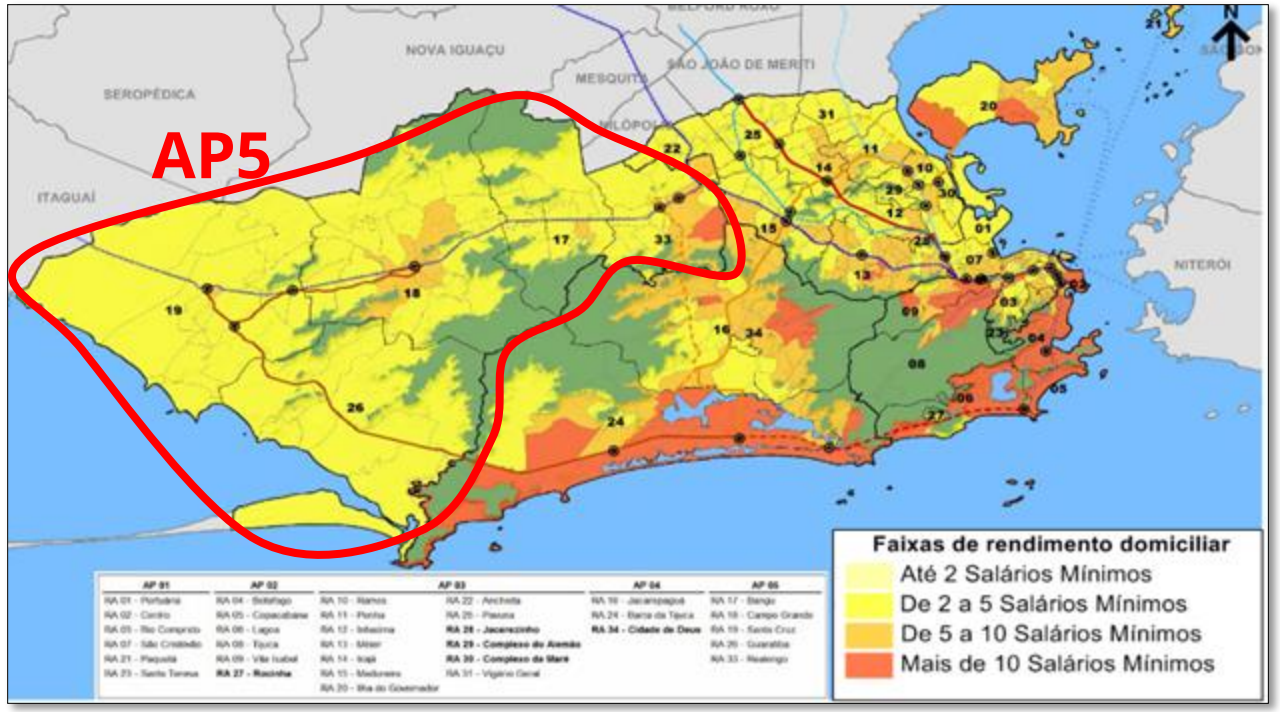
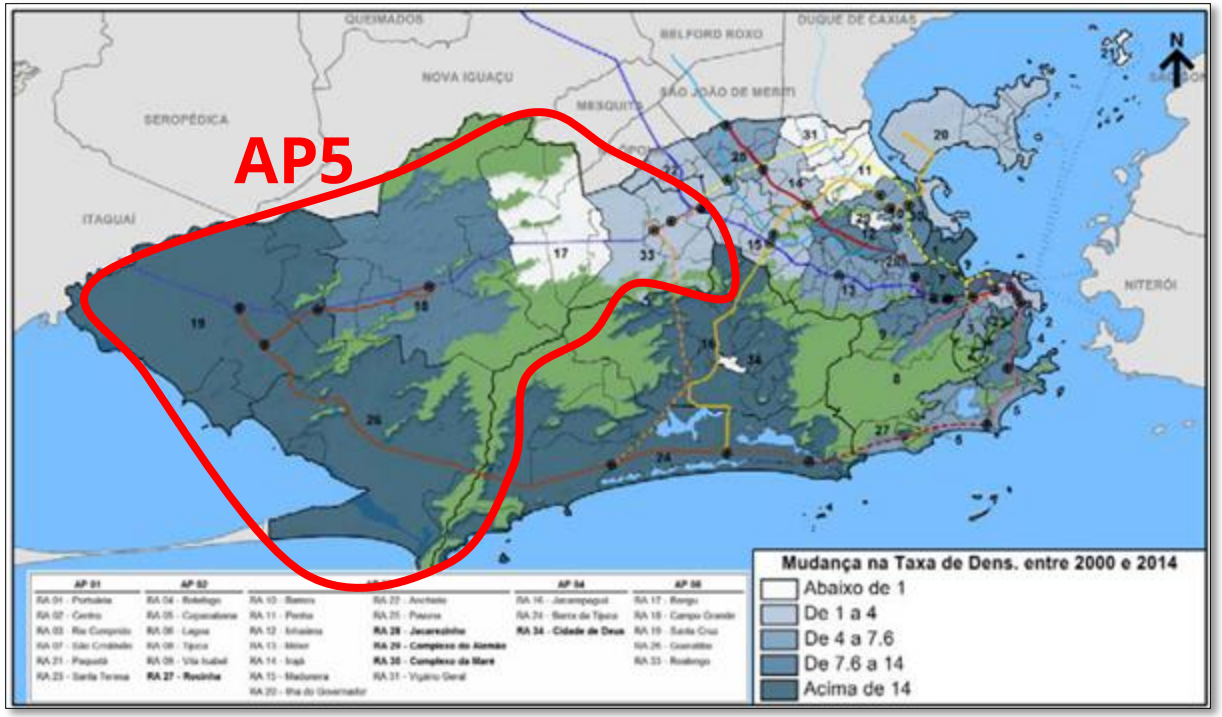
Eco depot for e-buses

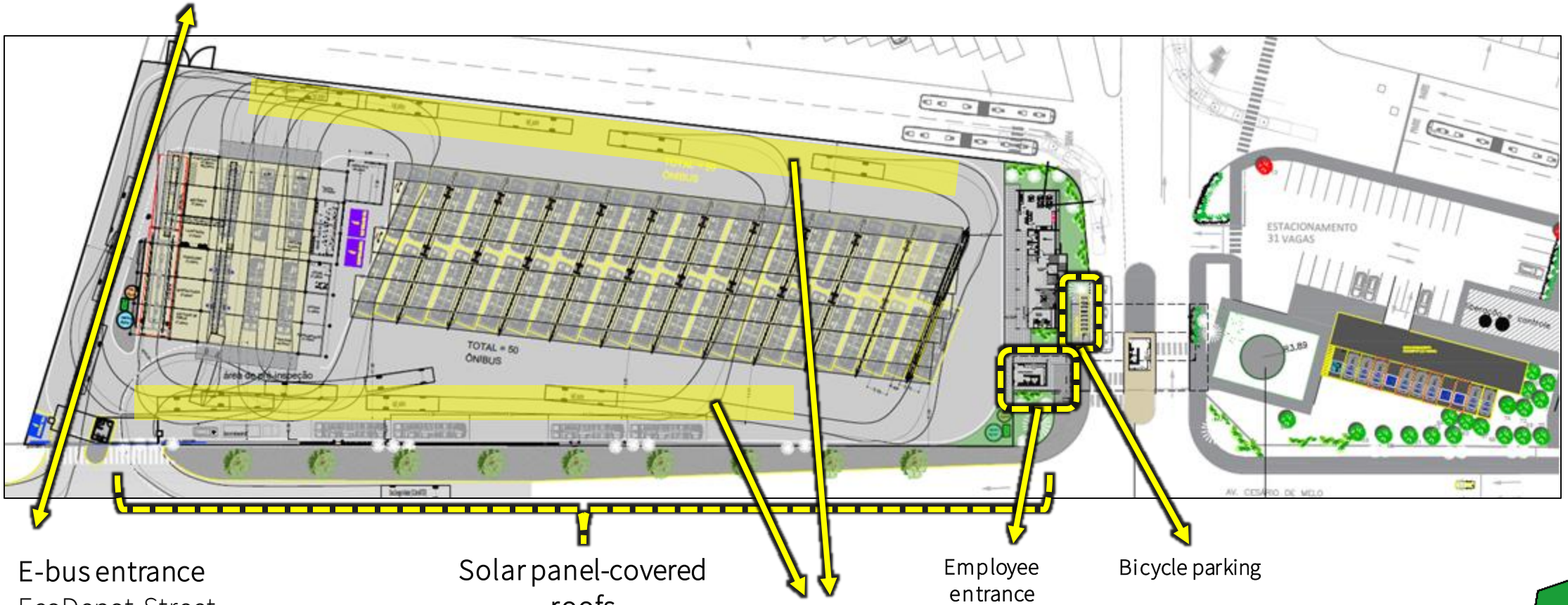




Region with high population growth in recent years presenting one of the lowest average income rates in the city of Rio de Janeiro *

* The city of Rio de Janeiro has an administrative structure divided into 05 Planning Areas (PA).

Eco depot for e-buses



E-bus entrance
EcoDepot-Street

Solar panel-covered roofs

Employee entrance

Bicycle parking

Areas for inspection and internal queue absorption
(expandable during critical periods)

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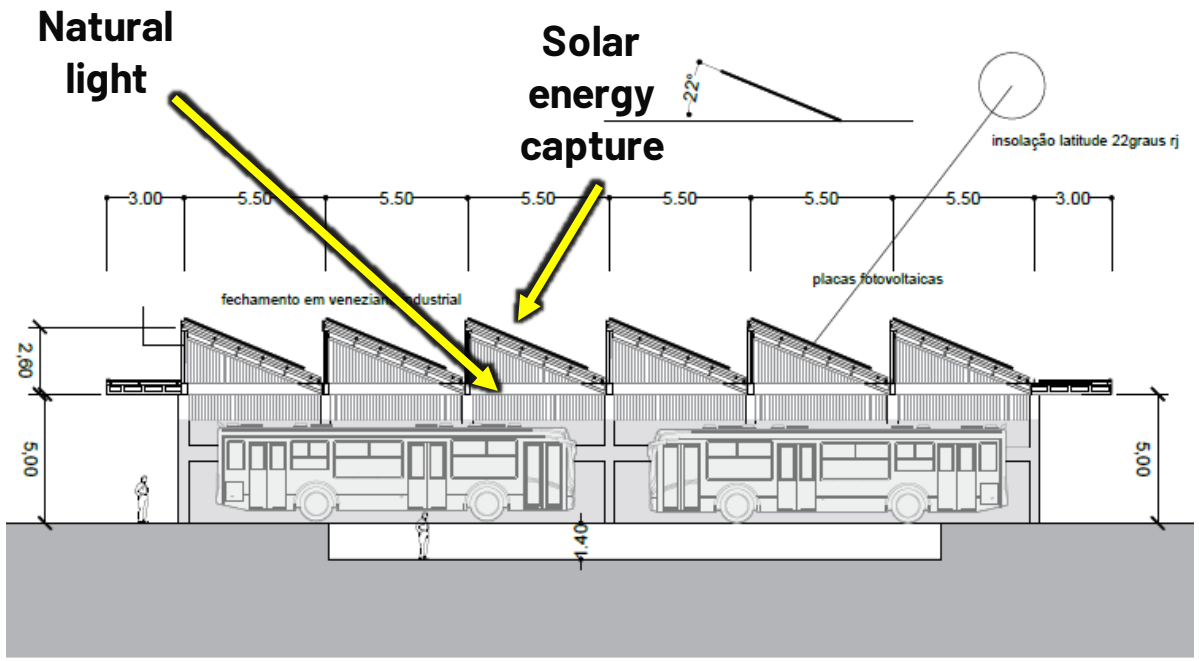
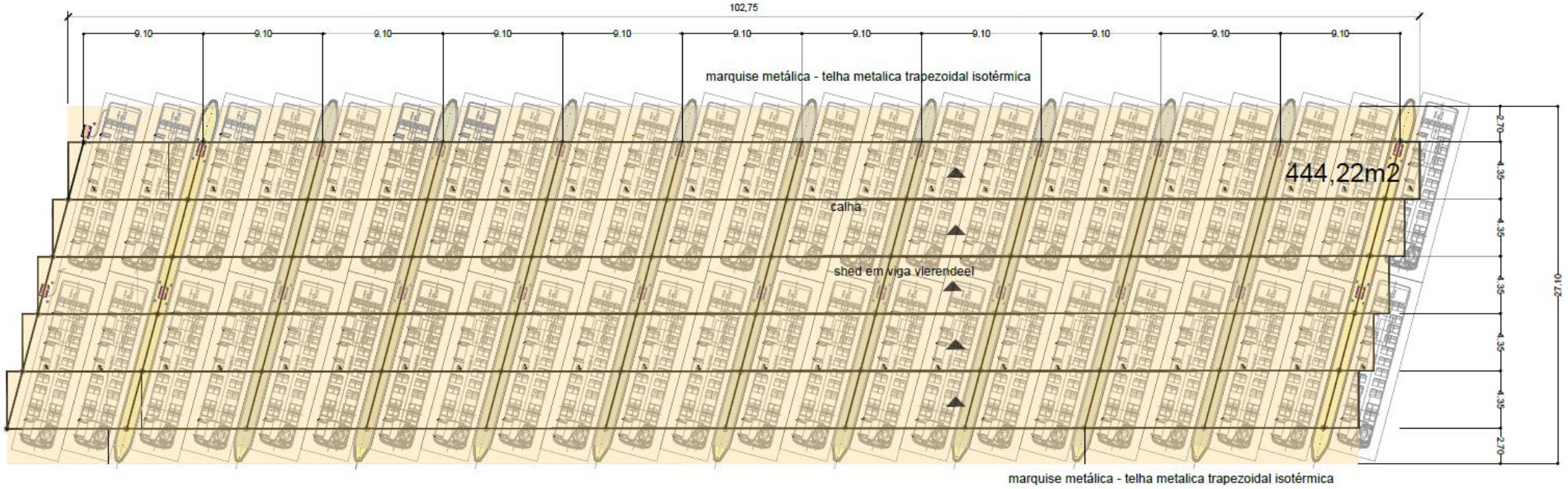
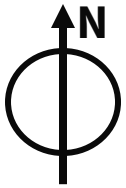
All buildings and parking/charging spaces will be covered with solar panels to maximize the capture area







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Reducing emissions and air pollution

- The city's road transport sector is the second greatest contributor to greenhouse gas (GHG) emissions, accounting for 35.4% of Rio's total GHG emissions.
- Brazil is highly dependent on hydro-electric power (70%), however to ensure a sustainable growth of e-mobility, the city needs to build bus depots and stations that have charging infrastructure powered by renewable energy.

Eco depot for e-buses

The electrification of 50 buses, powered by 721 kW of installed capacity solar depot could*:

Produce 1,065 MWh per year

The solar PV installed should produce 9,200 MWh to cover 50 buses running at 320 km a day.

With a facility with 721 kW of solar panels, this would cover 1,065 MWh per year (12% of the bus needs).

Save 1,270 t CO2 per year

Switching to ebuses and using a solar bus depot could save **1,270 tonnes of CO2 per year.** This represents 0.02% of the city transport emissions in 2019.[1]

Over **25 years, this could save 32,000 tons of CO2.**

Reduce 18 t NOx emissions per year

As the city switches part of the fleet to e-buses, the project would reduce in 0.27 tonnes of $PM_{2.5}$ and 18 tonnes of NOx emissions per year in the city. **This represents 1% of the $PM_{2.5}$ and 2% of the NOx emissions** from the formal public transport sector.

* This shows the preliminary impacts, based on the data available in April and September 2023.

Implementing agencies

Funding partners

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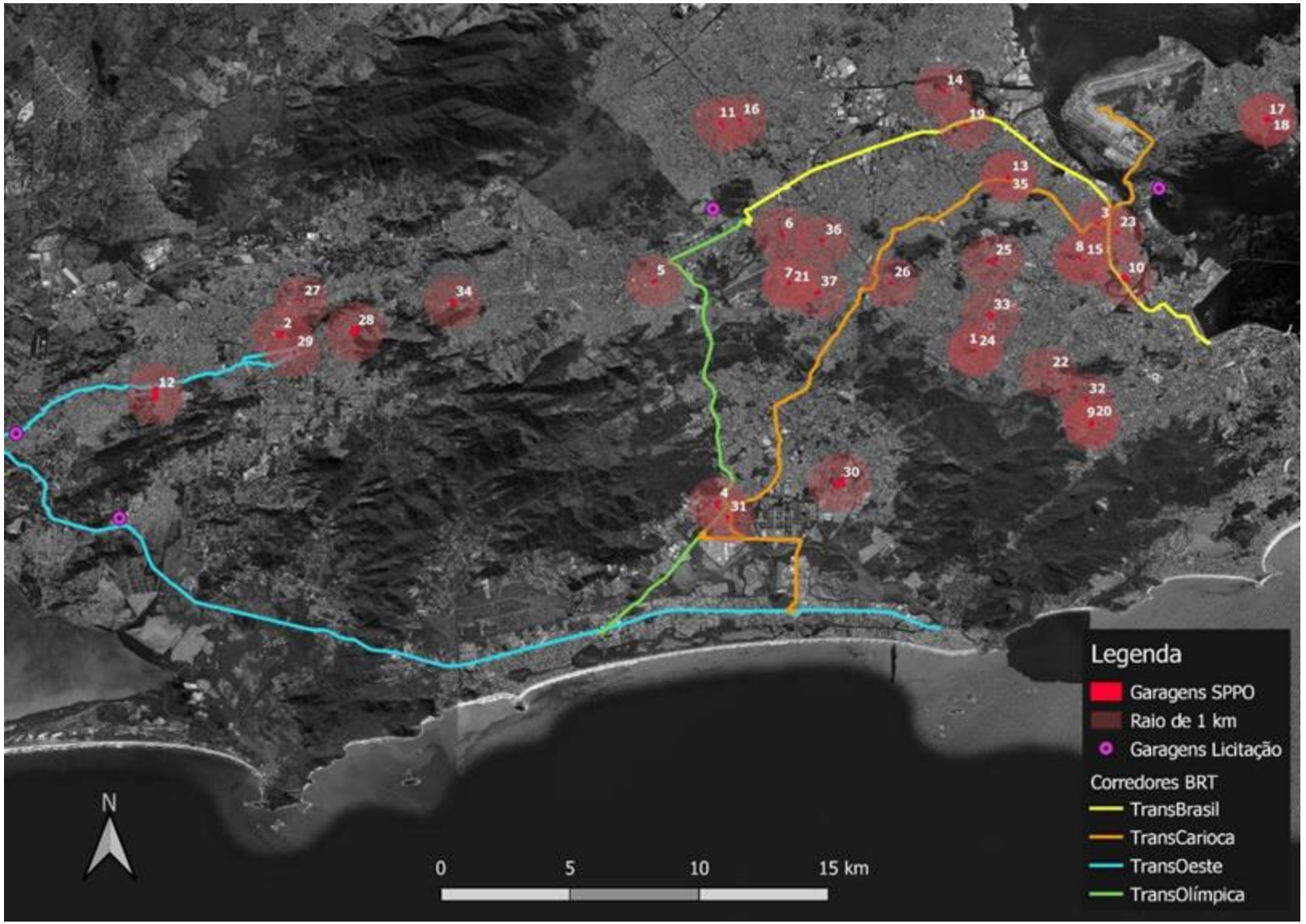
Eco depot for e-buses

This project is being developed with focus in its potential of replication and scalability:

- 35 bus depots in the city
- 3700 bus fleet in SPPO (feeder lines)



Fußnote

Active Mobility

Rio was the first city in Latin America to have sharing bicycle system starting in 2009. Nowadays the city has 3600 bicycles in this system.

In 2022, **Tembici** was the first company to sell carbon credits at an auction at Bolsa Verde Rio. The world's first carbon credit auction focused on micro mobility. In 2021, the company saved 7,000 tons of co_2 by offering the service to users - who stop using vehicles with fossil fuels.

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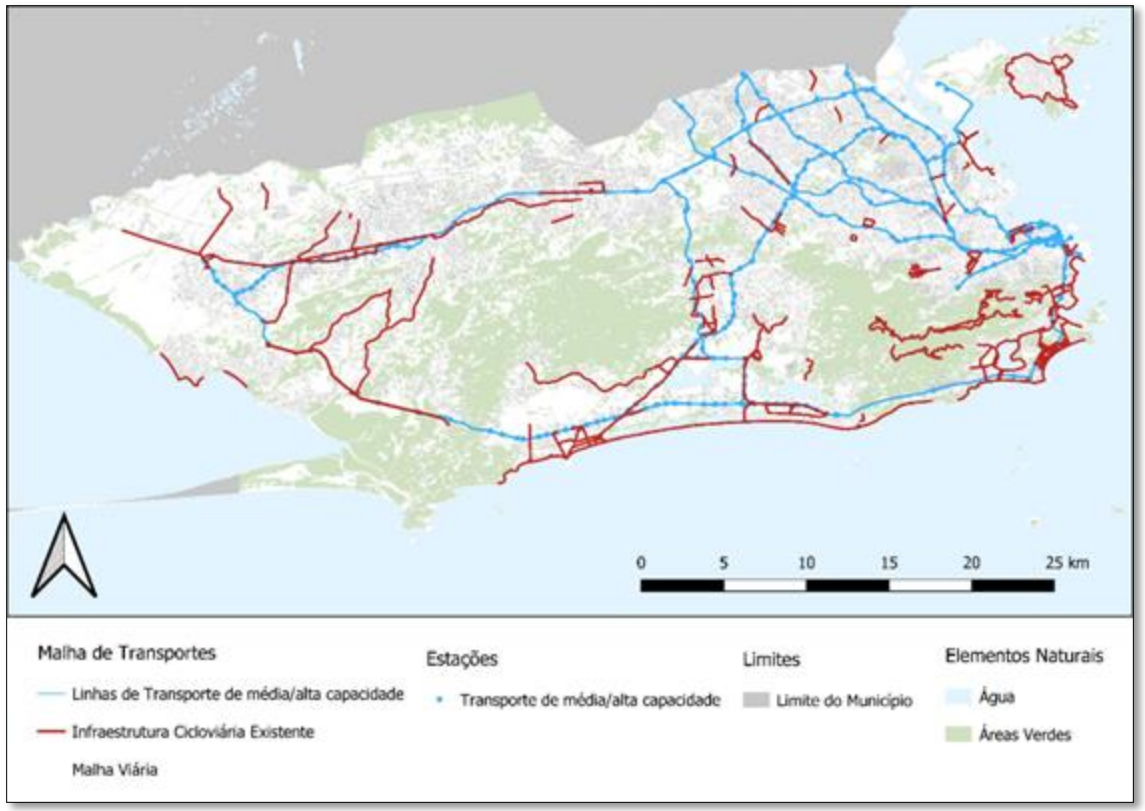
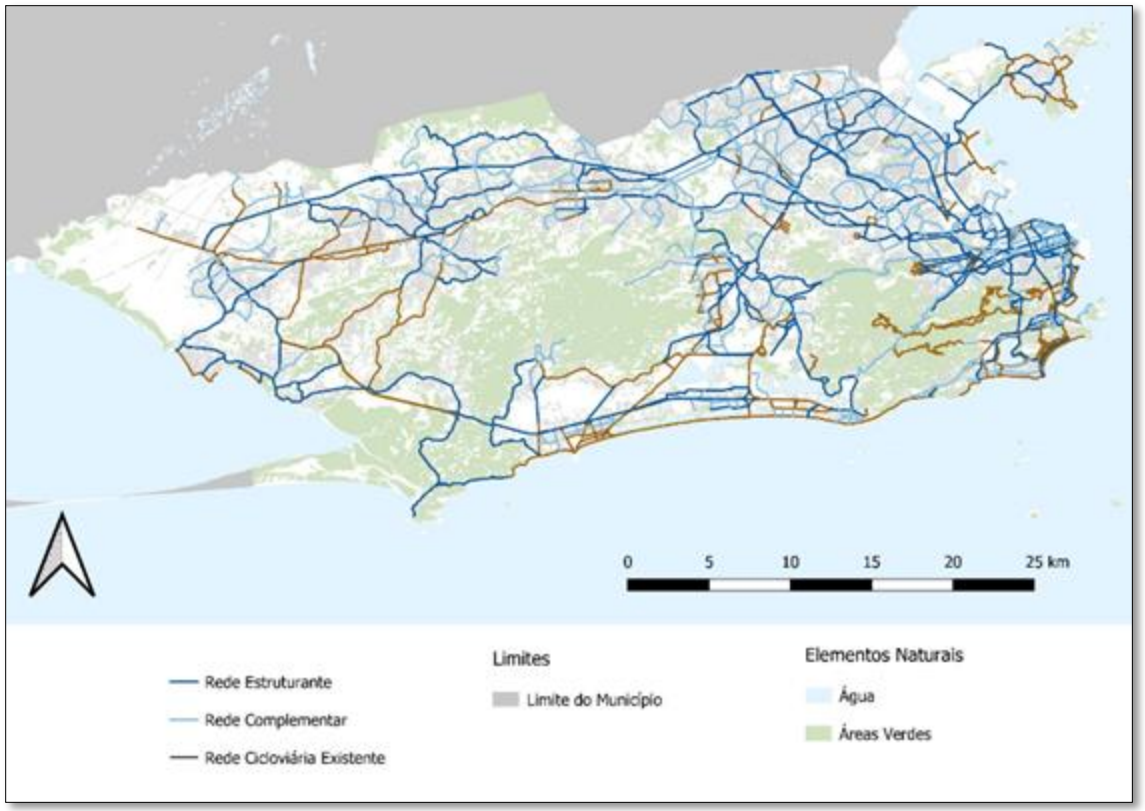
Actual bicycle lanes network: 447 km



Planned bicycle lanes network: 1.073 km



Thank you!

Interactive discussion

Financing instruments and mechanisms

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- What policy strategy your city or country developed for sustainable urban mobility projects?

Join at **menti.com** use code **4925 8529**

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