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Leveraging SCOPE & Data Tools for Transport Planning

Mexico's Experience

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Content

1. BRT SCOPE for new corridors in Mexico

2. BRT SCOPE for Guadalajara's Sustainable urban mobility plan (PIMUS)

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BRT SCOPE for new corridors in Mexico

Net Zero Cities 2022-2024 – Objective 2

Strengthen mobility and urban development to move towards more sustainable and equitable models through projects and capacity building.

Task:

Assesmet for CO2-eq avoided

How much CO2-eq is avoided for every project transport in construction within NZC project?

Corridors

1. **BRT: MiMacro: Periférico (Guadalajara)**
2. **BRT: IE-TRAM Calle 50 (Merida)**
3. **Light Rail: MiTren L4 (Guadalajara)**
4. **Monorrail: Metrorrey L5 (Monterrey)**

Project (corridor)	Length (Km)	Available Data:	Option used in SCOPE	Results (Ridership in 2050)	Results (Emissions in 2050)
BRT MiMacro Periférico	**41.5**	• Annual Urban Population Growth Rate • Citywide Modal Split • **Current BRT Frequency**	Option 1: Average Population Density	• 62 million total riders • 42,900 cars off the road	• Cumulative reduction of **57,680 tons of CO2** • Cumulative reduction of 721 tons of PM 2.5
BRT IE-Tram Calle 50 Projection 1	**14.1**	• Annual Urban Population Growth Rate • Citywide Modal Split • **Future BRT Frequency**	**Option 1: Average Population Density**	• 18 million total riders • 4,500 cars off the road	• Cumulative reduction of **5,521 tons** of CO2 • Cumulative reduction of 66 tons of PM 2.5
BRT IE-Tram Calle 50 Projection 2	**14.1**	• Annual Urban Population Growth Rate • Citywide Modal Split • Future BRT Frequency	**Option 2: Data on Current Corridor**	• 18 million total riders • 1,000 cars off the road	• Cumulative reduction of **1,341 tons** of CO2 • Cumulative reduction of 18 tons of PM 2.5
Light Train Tlajomulco	**21.1**	• Annual Urban Population Growth Rate • Citywide Modal Split • Adjustment: 12 Light trains = 24 Buses	Option 1: Average Population Density	• 37 million total riders • 13,300 cars off the road	• Cumulative reduction of **14,630 tons** of CO2 • Cumulative reduction of 190 tons of PM 2.5
Monorrail Aeropuerto – H.Ginecología	**25.4**	• Annual Urban Population Growth Rate • Citywide Modal Split • Adjustment: 10 Light trains = 40 Buses	Option 1: Average Population Density	• 62 million total riders • 26,200 cars off the road	• Cumulative reduction of **31,580 tons** of CO2 • Cumulative reduction of 374 tons of PM 2.5

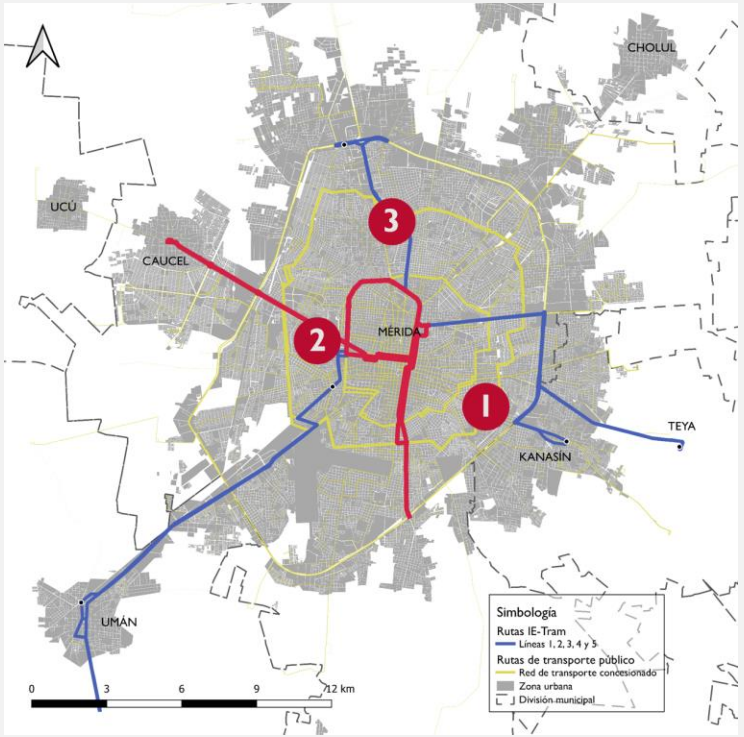
Selection of a new corridor for IE-Tram

The IE-Tram project, emerged as the first electric route in the region, seeking to implement 5 lines and deploy a fleet of 32 electric buses, revolutionizing public transportation in Merida.

Next step:

Comparison for new corridor selection (Line 6)

Which corridor was the best option to expand the system?



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Selection of a new corridor for IE-Tram

Impacts and emissions (2030)				
Indicator		**Corridor**		
Name	**Units**	**A**	**B**	**C**
Corridor density	people/Ha	83.83	67.33	67.20
Corridor ridership	Passengers	15,658,480	13,338,471	14,554,329
Cumulative reduction of CO2eq	Thousand tons	72	58	73
Car trips avoided	Cars	3,300	2,600	3,300
CO	Tons	972	780	984
NO2eq	Tons	212	170	215
PM2.5	Tons	2.25	1.81	2.29
VOC	Tons	0	0	0

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Key points

Flexibility and applicability	**Based on available data makes a prediction**
Easy to use	**User-friendly with prediction in minutes**
Minimal data	**For planning and early phases**
Sevaral customized inputs	**Poweful high quality data and custom factors**

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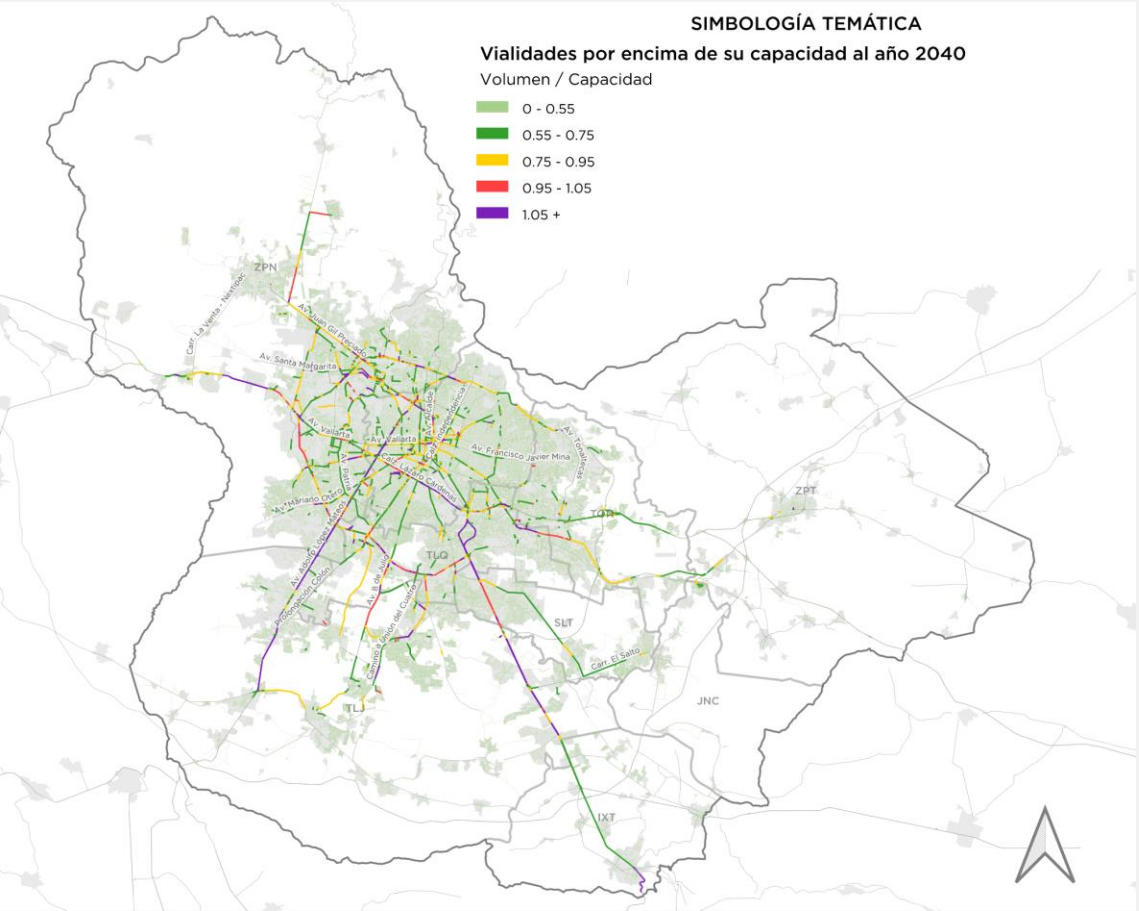
BRT SCOPE for Guadalajara's Sustainable urban mobility plan (PIMUS)



Currently, 112 km of the primary road network experience vehicle volumes during peak hours that exceed their capacity. If no action is taken*, this figure would increase to 148 km — a 31% rise.

- *To maintain the current situation: reduce the percentage of daily trips made by private vehicles from 28.1% to 25.8%.*

- ***To not have overcapacity roads: reduce it to 11.6%, representing a 60% decrease compared to the current modal split.***

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5 objectives	18 goals	8 strategic pillars	56 measures
Mobility: • Inclusive • Safe • Efficient • Healthy • Resilient	Reduce the modal share of private transportation by 60% Increase the modal share of public transportation by 43% Increase the modal share of cycling by 374% Reduce the kilometers of overcapacity roadways by 95% Reduce the number of people killed in traffic crashes	Pedestrian mobility and public space Non-motorized vehicle mobility Integrated public transport system Private vehicle mobility management Urban logistics Peripheral, rural, and regional mobility Urban planning and sustainability Road safety culture and social inclusion	**27 primary measures** 29 secondary measures

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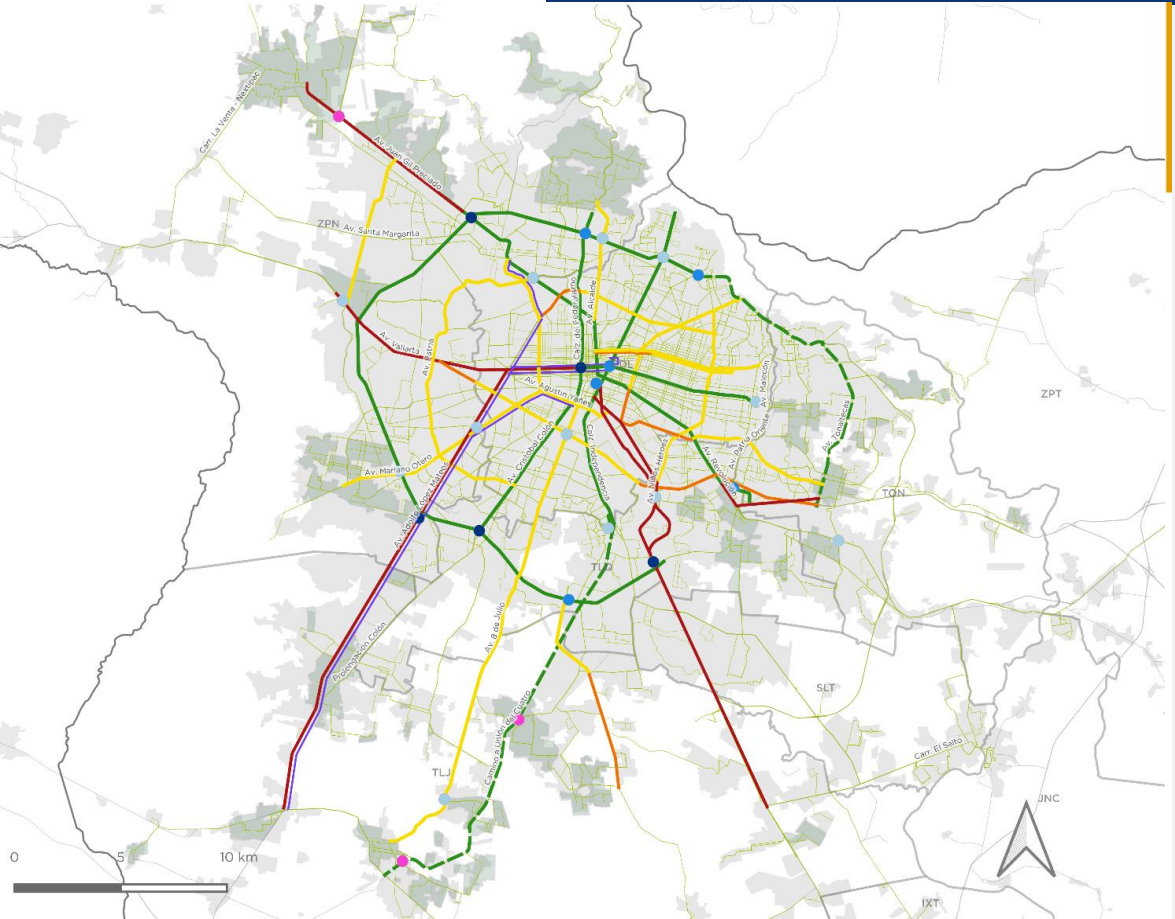

Develop actions to prioritize the movement of collective public transport along strategic corridors.

291 km of BRT projected:

- 9 Bronze
- 2 Silver
- 3 Gold

Increase to 27.3% Public Transport Modal Share

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Travel Mode Group	Current Modal Share	Current Trips	Target Modal Share	Future Trips	% Change in Modal Share
Walking	43.2%	5,093,170	43.2%	5,741,198	0%
Private transport	28.1%	3,316,516	11.2%	1,489,297	−60%
Public transport	21.6%	2,544,369	30.9%	4,108,864	+43%
Community transport	0.8%	97,275	0.8%	109,652	0%
Special transport	2.4%	277,346	2.9%	385,622	+23%
Bicycle	1.9%	221,569	8.9%	1,183,459	+374%
Taxi	2.1%	246,141	2.1%	277,459	0%
Total	**100.0%**	**11,796,386**	**100.0%**	**13,297,295**	–

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Thank you!

¡Gracias!