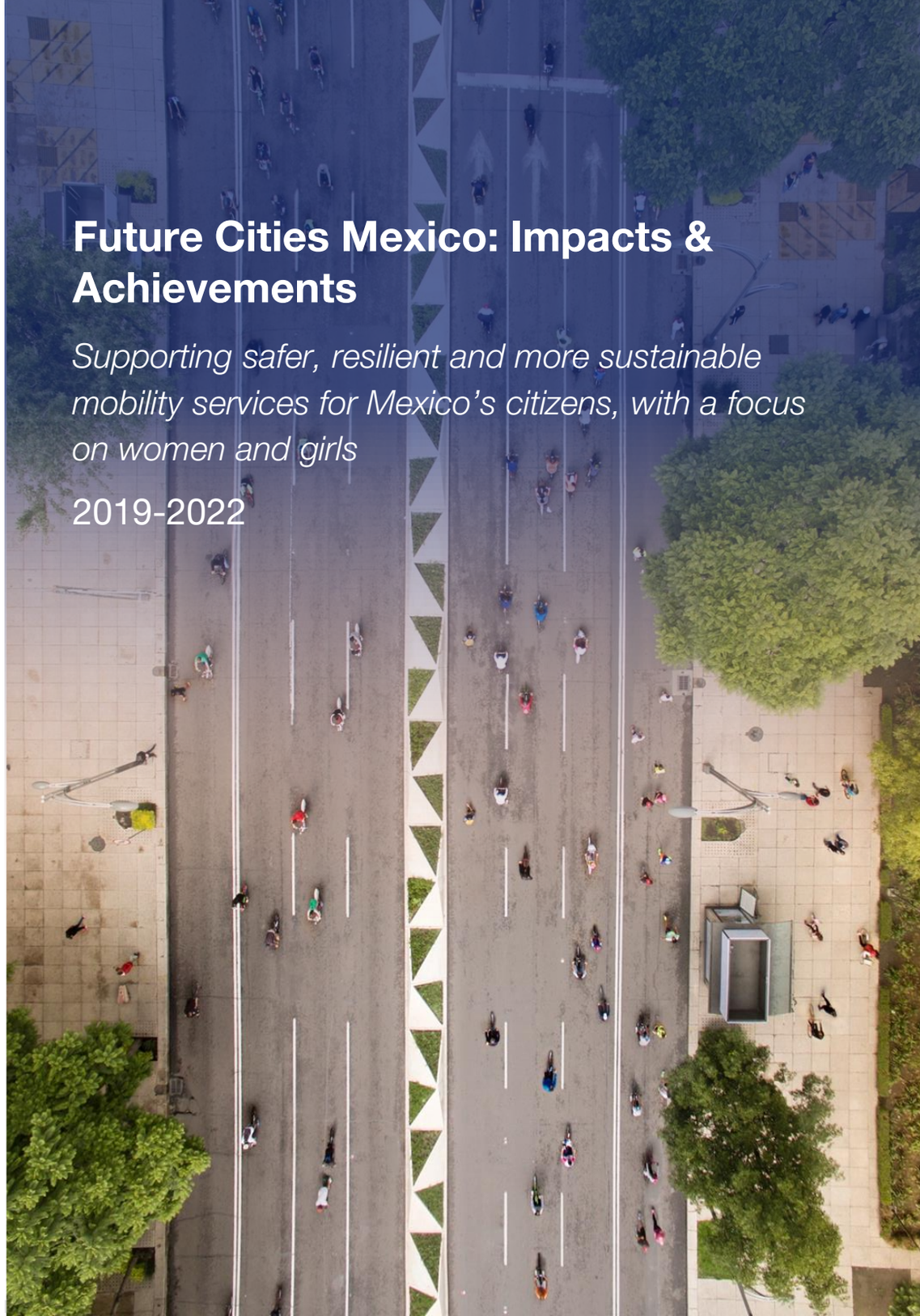
CIUDADES del FUTURO

Future Cities Mexico: Impacts & Achievements

Supporting safer, resilient and more sustainable mobility services for Mexico's citizens, with a focus on women and girls

2019-2022



Un programa de:

Embajada Británica en México

MEXICO UK PACT

Con el apoyo de:

pwc steer C230 WRI MÉXICO ROSS CENTER ITDP

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Foreword

It has been a privilege to lead the Future Cities Mexico Programme, and to work with the UK Government to help advance its goal of supporting inclusive economic growth and access to opportunity for some of the most vulnerable people in Mexico.

Over the three years 2019-2022, the programme has supported 5 cities with policy and practical solutions that are already starting to deliver safer, better and more sustainable mobility in Mexico's metropolitan areas. Importantly, our approach has been shaped by gender and inclusivity considerations, and has placed a strong focus on future-proof lower-carbon travel.

We are delighted that within a short period of time, our programme fostered collaboration between organisations in Mexico and the UK to provide over 40,000 people in Mexico with access to more affordable transport, and over 30,000 people with access to lower carbon transport solutions. We have also developed 11 actionable solutions that will have a climate benefit. We look forward to seeing these impacts grow as our recommendations are adopted and implemented, and how this experience can catalyse positive changes in cities in Mexico and beyond.

It has also been a privilege to work with such strong and passionate alliance organisations and Embassy team. I would like to thank them for their commitment to the programme and to the outcomes that we set out to achieve together. Finally, I would like to thank the UK Government for placing their trust in us and the alliance to deliver the Future Cities Mexico programme, and for focussing its prosperity programming on this important initiative.

Emma Cox

Programme Partner,
PwC Global Climate Lead

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Introduction

I am delighted to have the opportunity to introduce this summary of the work undertaken by the Implementing Alliance for the Future Cities Programme in Mexico over the three years 2019-2022.

This Alliance, led by PwC and including Steer, C230 Consultores, WRI and ITDP, has developed and implemented a programme of technical assistance specifically focused on supporting urban development in Mexico's cities that results in safer, resilient and more sustainable mobility services for citizens, particularly for women and girls.

Funded by the UK Government through prosperity programming, the team has developed and implemented a range of projects focused across the five themes of enhancing the attraction of **micromobility** options particularly for women, developing proposals for financing the **electrification of bus fleets, integrated transport systems**, new thinking for the **governance of urban areas** to support transport integration, and **infrastructure** for public transport. All projects have championed gender and inclusion and considered climate change throughout their development.

I am very proud to have had the chance to work with such diverse and talented teams within the Implementing Alliance, from the British Embassy in Mexico, and from our host teams from the five participating cities and national agencies. We have drawn on experiences from across Mexico, the UK and elsewhere to ensure that our work leaves a strong legacy. Furthermore, the team has adapted and responded to the challenges of the COVID-19 pandemic both with immediate tactical support across our five cities, but also with new methodologies and guidance for working with disadvantaged and frequently hard to reach groups in times where social distancing and lockdowns made traditional methods unworkable.

In closing, I would like to thank the UK Government for their foresight in designing a programme which has been ambitious, flexible, focused on driving results and impact and which is already making a difference to the lives of many of the most disadvantaged people in Mexico. We are committed to ensuring that in the future the legacy of our programme as a set of tools, experiences, learnings and guidance can be adapted, replicated and expanded across all of Mexico's cities.

Luke Miller
Programme Director, Steer UK

About this brochure

This brochure aims to share and celebrate the work and results of the Future Cities Mexico programme. It showcases the projects under 5 overarching themes:

- **Micromobility**
- **Electromobility**
- **Integrated Transport Systems**
- **Metropolitan Governance**
- **Infrastructure**

For each theme we highlight the challenges that the programme aimed to address, the projects we delivered in support of this aim, the results achieved to date, and the anticipated future impact.

We provide the lead organisation(s) for each project to enable continued knowledge sharing and networking. C230 Consultores led on gender and inclusion across all programme activities.

Cyclists in the street by the Independence Monument in Mexico City

The programme at a glance

The **Future Cities Mexico Programme** was part of the UK Foreign Commonwealth & Development Office's (FCDO) prosperity programming. Delivered over three years (Feb 2019 - March 2022), it aimed to support **inclusive economic growth** in Mexican cities through the development of policy, recommendations, and practical solutions **for safer, resilient, and more sustainable metropolitan mobility,** that results in **increased access to economic opportunities** for citizens, **particularly vulnerable groups, including women and girls.**

The programme was **led by PwC (UK)** and implemented alongside an Alliance including **Steer, C230 Consultores, the World Resources Institute (WRI), and the Institute for Transportation and Development Policy (ITDP).**

Over its lifetime, the Programme supported 5 cities: **Guadalajara, Hermosillo, Mexico City, Monterrey and Querétaro**. These cities were selected based on their submitted proposals in two broad areas of technical assistance:

- Better governance, planning, data and integration in metropolitan mobility
- Strategic, practical, scalable and sustainable mobility projects

The programme also provided technical assistance to 2 national agencies: The Secretariat for Agrarian, Land and Urban Development **(SEDATU)**, and the National Public Works and Services Bank **(Banobras)**.

The success of the Programme was possible thanks to the participation and collaboration of multiple transport users, authorities at the national, state and municipal level, civil society organisations, academics and industry experts.

187
experts from across the programme team provided technical support

5
cities supported - Mexico City, Querétaro, Guadalajara, Hermosillo and Monterrey

2
National agencies supported (SEDATU & Banobras)

5,900+
beneficiaries consulted

14
projects

£8.3m
budget

10
knowledge-exchange activities between UK organisations and Mexican authorities

February 2019
Programme kick off - Inception phase

April 2019
Programme launch event in Mexico City

May 2019
Evaluation panel assessed city applications and selected projects

September 2019
Start of Implementation phase

March 2020
Programme activities went fully online to comply with confinement/distancing measures and reduce risks for programme staff and beneficiaries.

August 2020
Launch event of the COVID-19 response project "Keeping Mexico Moving " to help meet mobility needs for the return to the "new normal" in the 5 participating cities.

April 2021
Finalised implementation of the first wave of projects (governance, planning and data integration)

August 2021
Launch of final wave of projects

March 2022
Programme Closed

The problems we wanted to help to solve

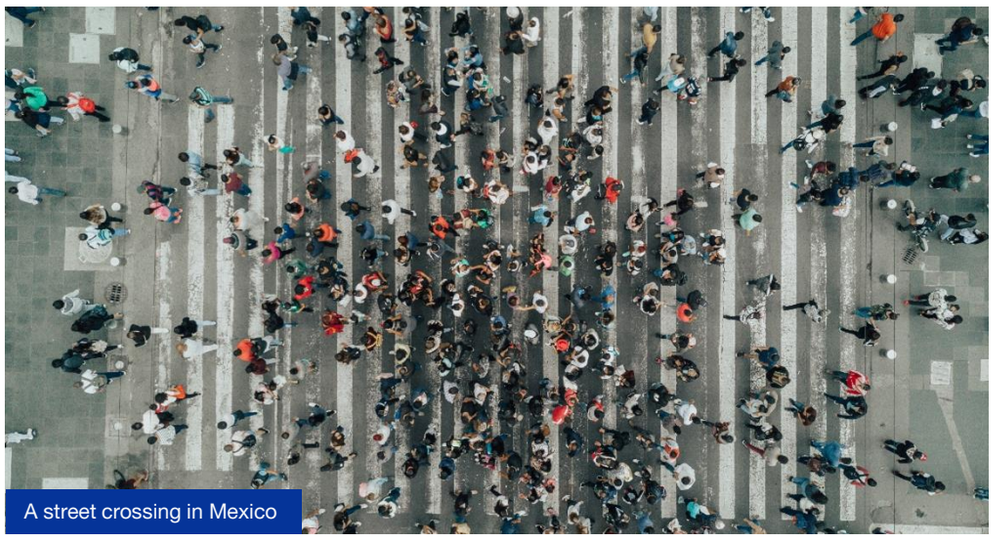
While the situation differs by city and region, the programme aimed to tackle the following common problems:

In Mexico, **19% of household spending is typically dedicated to transportation** (an average of 67 GBP per month). This reduces disposable income, and **can be up to 25% for those living in areas far from urban centres**, to which they have to commute daily for work or studies.[1]

Transport accounts for around **47% of Mexico's energy consumption** (65% petrol, 26% from diesel), and contributes **26% of Mexico's CO_2 emissions**.[2]

Public transport infrastructure is in disrepair across many cities, which makes it unattractive for users who perceive it as slow, uncomfortable, and unsafe. Most women (74%) aged 18+ **feel unsafe aboard public transportation**.[3]

Inefficient mobility policies and data systems cause a **daily loss of 3.3 million person-hours in Mexico**.[4]



A street crossing in Mexico

[1] Mexican Institute for Competitiveness (2019). *Urban Mobility Index.*
[2] Alliance for electromobility in Mexico. (2019) *2019-2022 Strategic Plan.*
[3] National Institute of Statistics and Geography (2021). *National Survey of Victimization and Perception of Public Safety.*
[4] UN Habitat (2016). *2014-2015 National Report on Urban Mobility in Mexico.*

Some of the key impacts to date

After three years of implementation, the programme's work and recommendations have begun delivering important results:

41,732	Beneficiaries with improved access to affordable transport
31,495	Beneficiaries with improved access to low carbon transport
237	Engaged participants in knowledge exchange activities between UK organisations and Mexican authorities
68	Authorities, organisations, or institutions participating together in mobility planning processes in Mexican cities
11	Mobility or infrastructure solutions developed which have an intended climate benefit
3	Mobility or infrastructure solutions launched for testing in cities
2	Policies or protocols have been shaped by the programme's support: Mi Pasaje – Support for women, and the Technical Standard for bus stops.

- Programme recommendations informed the **launch of the *Mi Pasaje* programme** in January 2021, which aimed to **benefit low-income women** in the outskirts of the Guadalajara Metropolitan Area through the provision of free public transport and public bicycle cards. By the end of 2021, *Mi Pasaje* had **11,732 beneficiaries.**
- In March 2021, Mexico City's Mayor **announced that a 28.5km pop-up bike lane introduced during the COVID-19 pandemic would be made permanent.** Data and recommendations provided by the programme were used to inform this decision. In April 2021 over 30,000 trips per day were made using the pop-up bike lane, representing a 275% increase in cyclists' use of this stretch of road since November 2020.
- In 2022, authorities from the Metropolitan Area of Guadalajara started to **implement the programme's design recommendations for bus stops on the *MiMacro* bus corridor in Guadalajara.** This Bus Rapid Transit (BRT) corridor will have over 40 stations with two transfer stations (one on each side for people to transfer between urban buses and the BRT system). It is expected that the corridor will serve over 170,000 people daily.
- In 2021, the Secretariat of Agrarian, Land, and Urban Development (SEDATU) **began applying the methodology designed by the programme** to evaluate territorial impact of infrastructure projects. SEDATU is **using this methodology for priority projects, such as the new airport, the Mayan Train and the Dos Bocas refinery**.

The Metro Transport System in Mexico City

Micromobility

Micromobility refers to flexible and lightweight vehicles, such as bicycles and scooters, including those that are electrically powered, which can be used on a temporary basis as part of a self-service borrow scheme. These low-carbon transport options can increase access to employment and education, particularly for women and girls.

Future Cities projects related to micromobility:

Project Name	Location	Duration	Led by
Women in micromobility[5]	Guadalajara and Mexico City	June 2021- March 2022	ITDP
Neighbourhood mobility	Mexico City, Tláhuac municipality	November 2020 - February 2021	steer
Diagnosis for the design of a social transport fare policy	Guadalajara	June 2020 - September 2020	ITDP
Technical assistance to Mexican Cities for COVID-19 Recovery: Keeping Mexico Moving	Guadalajara, Querétaro, Mexico City, and Monterrey	May 2020 - August 2020	All

"One of the most important contributions of the programme was the elaboration of an in-depth diagnosis of the intervention area and the interviews/ surveys with the local population and civil society organisations"

Director of Mobility, Tláhuac Municipal Government, Mexico City

"Receiving the MiBici subscription represented an opportunity to increase my physical activity and also to access a better alternative to buses, where many people don't wear a mask even though we are in a pandemic. MiBici is easier and faster, and riding alone allows me to avoid contact with large crowds."

Beneficiary of Mi Pasaje

[5] This project has been funded by UK PACT (Partnering for Accelerated Climate Transitions). UK PACT is a £60m flagship programme under the International Climate Finance (ICF) portfolio. It is part of the UK's £5.8bn commitment to International Climate Finance by 2021 to tackle climate change, funded by the Department for Business, Energy and Industrial Strategy (BEIS). UK PACT's mission is to support partner countries to increase their ambition to tackle climate change and accelerate their own clean growth transitions; to increase the capacity and capability of partner countries to meet those raised ambitions and reduce their emissions; and to help countries to reduce harmful carbon emissions and alleviate poverty, unlocking opportunities in the global net zero economy.

Image of an Ecobici station in Mexico City
Source: Future Cities Mexico

What thematic barriers were identified?

Unequal access for women and vulnerable groups, such as people from lower socioeconomic backgrounds, older adults and people with disabilities.

Micromobility initiatives are concentrated in wealthier, central areas, neglecting outskirts where access to jobs and services is limited.

Women's travel patterns and needs are not often considered in micromobility planning.

Poor road infrastructure and a high risk of collisions with larger, faster motorised vehicles deter people from using micromobility solutions, particularly women who tend to be more risk-averse than men.

Some cities **have ineffective incentives**, such as subsidies, that fail to increase women's use of micromobility initiatives.

Only **27%** of *Ecobici*[6] and **30%** of *MiBici* users are women.

Only **12%** of *Mi Pasaje*[7] beneficiaries requested membership to the *MiBici* scheme.

How did the programme tackle climate and resilience issues in micromobility?

1. **Included an '*Avoid-Shift-Improve*' approach,** which aimed to reduce greenhouse gas emissions by encouraging a modal shift towards sustainable mobility solutions in Mexican cities.

2. **Studied the institutional framework in target cities to support micromobility policies. The** programme identified targets established by Climate Action Plans and Programmes, that allow the proposed solutions to be framed in local climate action policies.

[6] *Ecobici* is Mexico City's public bike-sharing scheme. *MiBici* is Guadalajara's public bike-sharing scheme.
[7] Mi Pasaje - Support for Women is a subsidy policy provided by the Jalisco state government, which targets women between 25-65 years old, who live in marginalised neighbourhoods in the Guadalajara Metropolitan Area, and have a monthly income below 388 GBP. Beneficiaries receive two daily public transport tickets and a may opt to receive a free subscription to MiBici.

How has the programme addressed these barriers?

Programme activity included analysis of women's mobility patterns, strengthening gender perspectives in micromobility schemes, and proposing intervention areas and solutions to improve access to, and use of, micromobility solutions.

Guadalajara Metropolitan Area - *Mi Pasaje & MiBici*

- **Designed criteria** to select beneficiaries for a transport subsidy programme
- Once the subsidy programme was implemented, we worked with the UK based **Behavioural Insights Ltd Team (BIT) to apply behavioural science approaches** to simplify the registration process and better communicate benefits, to **encourage more women and girls to access the free MiBici subscription.**

Tlahuac municipality in Mexico City:

- **Analysed barriers to women's mobility** using drone aerial photography and interviews with women living in the area, to identify ways to improve safety and accessibility.
- Proposed a **priority intervention area and solutions for physical improvements** in Tláhuac, based on experiences such as the *Mini-Hollands*[8] in London, UK.

Mexico City - *Ecobici* bike-sharing system*:*

- Recommended how authorities can **strengthen gender perspectives in cycling training**, as part of *Ecobici's* expansion of the scheme.
- Designed and analysed a survey, to enable Mexico City's Mobility Secretariat (SEMOVI) to **better understand barriers faced by female users** of their *Ecobici* service

How did the programme tackle gender and social inclusion issues in micromobility?

1. **Identified socioeconomic, cultural, and institutional barriers to the wider use of micromobility among female users.** These include economic inequalities (e.g. lack of access to bank accounts), gender-based violence, inability to use types of micromobility, poor road safety, and lack of infrastructure to support travelling with children, carrying shopping bags, or people with reduced mobility.

2. **Consulted women through interviews and focus groups in target cities.** The purpose of these were to inform the design of solutions that effectively improve the conditions and spaces that women use when travelling.

[8] 'Mini-Hollands' was a 2014 competition, among outer London boroughs, for a £100-million fund to build Dutch-style cycling infrastructure, such as traffic calming, segregated bike lanes and safety measures at junctions It aimed to encourage modal shift from car to bike usage for short journeys.

What impacts has the programme had already?

Key achievements: Increasing registrations for MiBici, the use of pop-up cycle lanes and the installation of permanent bike lanes.

As a result of the programme's contributions to the design of the transport subsidy programme for low-income women, the government of **Jalisco launched *Mi Pasaje - Support for Women* in January 2021.** As of February 2022, the scheme has **benefitted 11,700 women in the Guadalajara Metropolitan Area.**

~1,500 *Mi Pasaje* beneficiaries have accepted a free *MiBici* subscription. In order to increase the number of beneficiaries who use *MiBici*, state authorities began implementing the programme's recommendations during the 2022 registration to *Mi Pasaje*.

The Programme's recommendations to increase the use of MiBici among the beneficiaries of Mi Pasaje - Support for women focus on i**mproving information for women interested in the subsidy**.

As a response to the COVID-19 pandemic, Mexico City authorities created two pop-up bike lanes on some of the city's most important avenues (*Insurgentes Ave.* and *Eje 4 Sur*). The programme evaluated the usefulness and safety of the bike lanes for users and provided this feedback to city government.

Image of a bike lane in Mexico
Source: Future Cities Mexico

Data provided by the programme was used to support the decision to transform one of the pop-up bike lanes (*Avda. Insurgentes*) into a permanent one. Works to install permanent infrastructure began in May 2021. In April 2021, the pop-up bike lane had 30,000 daily users**.** The programme calculated that **over 909,000 daily trips made in Mexico City could now be easily made using bike lanes which have been made permanent after COVID-19.**[9]

[9] Calculation made based on INEGI's Origin-Destination Survey, considering trips of 8 km or less in the districts crossed by the bike lane.

Key programme tools

The following are available at www.ciudadesdelfuturo.mx

- Toolkit for data collection and analysis with a gender and inclusion perspective
- Analysis of case studies for the improvement of mobility at a neighbourhood scale
- Methodology for the assessment of urban environments
- Infographic on the barriers women face in the use of micromobility alternatives

^275%

In the number of cyclists per day using the pop-up bike lane on Avenida Insurgentes during their commutes between Nov 2020 & April 2021

Recommendations

The following recommendations are based on the work of the programme and can be applied more generally:

- **Improve infrastructure and operating conditions for the establishment of new bike lanes, and make temporary bike lanes permanent.** Authorities should focus in particular on connections with other bike lanes to provide complete routes, protection for bike lanes to be kept separate from motorised transport, signage, lane width, and parking needs, among others.
- **Accompany physical improvement measures with participatory programmes or strategies** that motivate a change in behaviour in the communities to encourage a wider use of micromobility alternatives for daily activities.
- **Design information materials** and communication campaigns describing the way to use micromobility alternatives (like bike-sharing systems) and their attributes in a clear and attractive way, applying behavioural insights principles to encourage modal shifts towards sustainable transport modes.
- Ensure that **ways to register for the use of micromobility alternatives are available and accessible** digitally, in person and by telephone, to ensure people who are interested can choose the option that works best for them.
- **Organise cycling classes exclusively for women and girls** in areas beyond city centres, emphasising road safety and routes to reach key destinations (e.g. metro stations, markets, schools, etc.).
- **Identify role models to encourage micromobility amongst women and girls**, highlighting stories in photos or videos of females who use a bike in their daily lives.

Cyclists in the street in Mexico City

Electromobility

Electromobility (or e-mobility) refers to modes of transport that are fully or partly powered by electricity, such as e-buses, e-bikes and e-scooters. These low carbon travel options can help to improve the sustainability and resilience of transport in Mexican cities, and increase access to employment and education, particularly for women and girls.

Future Cities projects related to electromobility:

Project name	Location	Duration	Led by
Financing e-buses through Banobras[10,11]	National	June 2021 - March 2022	steer
Strengthening the financial scheme and the fare structure of Mexico City's public transport system	Mexico City	October 2019 - November 2020	steer

"The programme helped identify that there are no financial products in the Federal Support Program for Urban Public Transportation (PROTRAM) that are 100% adequate for e-bus projects. As a result, we now have the task to create new financing products in collaboration with other development banking institutions, with the support of commercial banking".

"Thanks to the programme, FONADIN had the opportunity to understand the investment needs in public transport projects in two cities in Mexico, and the main challenges in the implementation of electric rolling stock, which can help understand the general context".

Transportation Projects Manager and Transportation Projects Lead, Banobras

[10] This project has been funded by UK PACT (Partnering for Accelerated Climate Transitions). UK PACT is a £60m flagship programme under the International Climate Finance (ICF) portfolio. It is part of the UK's £5.8bn commitment to International Climate Finance by 2021 to tackle climate change, funded by the Department for Business, Energy and Industrial Strategy (BEIS). UK PACT's mission is to support partner countries to increase their ambition to tackle climate change and accelerate their own clean growth transitions; to increase the capacity and capability of partner countries to meet those raised ambitions and reduce their emissions; and to help countries to reduce harmful carbon emissions and alleviate poverty, unlocking opportunities in the global net zero economy.

[11] The National Infrastructure Fund (FONADIN) is a trust established within the National Bank of Public Works and Services (Banobras), a state owned development bank in Mexico. FONADIN supports the planning, design, construction and transfer of infrastructure projects with social impact or economic profitability, in which the public and private sectors participate.

[12] PROTRAM is Mexico's Federal Support Program for Urban Public Transportation, one of FONADIN's instruments to support the financing of investment projects in urban transport, as well as to promote the institutional strengthening of planning, regulation and administration of urban public transport systems.

Image of an electric bus as part of the pilot project in Metrobús line 3. Source: Future Cities Mexico

What thematic barriers were identified?

Local governments have been **unable to structure or finance a significant number of electric transport projects (particularly e-buses), due to the high initial cost,** and technological and infrastructure challenges.

The high initial cost of e-buses **prevents smaller cities in Mexico from transitioning to electric fleets,** as they have lower financial strength and already operate smaller and cheaper bus fleets.

Mexico still lacks **instruments to unlock the shift to electromobility and effective ways to coordinate and support** the development of projects for bus fleet renewal.

E-buses are estimated to be **2 - 2.5 times more expensive** than diesel buses.

x2

The cost of upgrading fleets to e-buses can be **up to 53% higher** than using diesel engine vehicles

53 %

How did the programme tackle climate and resilience issues in electromobility?

1. Aimed to **support emissions reductions** in Mexican cities by unlocking barriers to investment in e-buses.
2. Developed a **detailed characterisation of the regulatory framework to mitigate climate change** (i.e. adaptation strategies and laws) available in Mexican cities, with enabling conditions to implement e-bus projects.
3. **Reviewed green financing alternatives,** such as green bonds and climate funds, and provided green funding and financing case studies to demonstrate how these mechanisms have worked in practice.
4. **Created indicators** to recognise performance and cost differences based on type of fuel and emission standards.

How has the programme addressed these barriers?

Activity included advising how to increase resources to fund new e-bus projects, analysing investment opportunities in public e-mobility and identifying how to accelerate investment in e-buses.

- Helped Banobras identify opportunities and processes to i**ncrease the flow of resources** from FONADIN and PROTRAM[12], to f**und new electric bus projects.**
- Selected a **short list of cities in Mexico with enabling conditions to implement electric bus projects** in the short and medium term (≈3 to 5 years).
- Analysed the **differing needs for investment in electric public transport in 4 citi**es: Mexico City, Monterrey, Guaymas and Mérida.
- Identified **factors that could accelerate investment in e-buses**, to optimise FONADIN's financial instruments.

Image of concessional buses in Mexico
Source: Future Cities Mexico

How did the programme tackle gender and social inclusion issues in electromobility?

1. Studied **how cities in Mexico are incorporating a gender and inclusion perspective into their transport plans**, as investment for fleet renovation with e-buses can be a great opportunity to mainstream this perspective in transport projects.
2. Proposed that **when evaluating e-bus projects, criteria should also include a wider consideration of gender perspectives.**
3. Analysed potential **winners and losers from the proposed funding alternatives** to mitigate negative impacts on women and other vulnerable groups.

What impacts has the programme had already?

Key achievements: Identifying cities with enabling factors for the implementation of e-bus projects in Mexico, estimating the broad financing needs for replacing public transport fleets in four cities, understanding challenges for implementing e-buses and evaluating a range of potential financial instruments that FONADIN can use to overcome barriers in the market.

Implementing e-buses on certain routes in Monterrey and Mexico City alone **has the potential to save a total 3,650 tonnes of CO_2 per year** (6.6% of the emissions reduction that Mexico wants to deliver by 2030 from the transport sector as part of its Nationally Determined Contributions).

With the analysis developed by the programme, **FONADIN has a better understanding of the financial instruments they could use to implement e-bus projects** and the role they could play in the market. In this regard, FONADIN can facilitate early support to project sponsors and break the inertia within the public sector.

The programme provided a **road map with concrete next steps to adapt FONADIN's approach to the e-bus market**. This will help increase access for both the public and private sectors to their financial support for electric transport projects.

As part of the high-level business cases for Metrobús Line 4 in Mexico City and TransMetro Guadalupe in Monterrey, **the programme estimated the overall environmental and economic benefits of implementing e-buses**. In that context, Monterrey can save over 250 tonnes of CO_2e annually, while Mexico City can save over 3,600 tonnes of CO_2e each year, considering Line 4 has a larger bus fleet.

Trolleybus in Mexico
Source: Future Cities Mexico

Mexico City could **reduce CO2e emissions** by **3600 tonnes** annually

CO_2e ↓

3600
Tonnes CO2e

Monterrey could **reduce CO2e emissions** by **250 tonnes** annually

CO_2e ↓

250
Tonnes CO2e

Key programme tools

The following are available at www.ciudadesdelfuturo.mx:

- General analysis of investment requirements for the purchase of e-buses in 4 Mexican cities

Recommendations

The following recommendations are based on the work of the programme and can be applied more generally:

- National infrastructure funds should h**ave a more involved role in the early stages of project development**, particularly in those projects where risks cannot be allocated to the public transport operator or a third party, to ensure improved electromobility in the future.
- National infrastructure funds should **consider using qualified and independent external advisors to support public project sponsors** (e.g. in state or municipal governments) in project definition. Advisors could also help project developers identify whether available funding schemes are suitable for the project.
- National infrastructure funds should **raise awareness of the available public financing instruments to encourage early participation in e-bus projects**, for example:
    - Define a **single contact** for electrification initiatives
    - **Clearly define and present** financial instruments in an accessible way for the target market, and describe their intended application to support the development of a project pipeline, and establish operational guidelines for public financing institutions
    - **Engage** in the e-bus market
- National infrastructure funds should pr**omote collaboration, consultation and independent advice** with project sponsors.
- National infrastructure funds should periodically review and adapt their strategies, to **ensure the fund's resources are applied correctly** and only to those projects that need it.
- Public project sponsors (e.g. state or municipal governments) should **consider a wider spectrum of financing alternatives** beyond national, metropolitan and local development funds, such as M**ultilateral Development Banks and International Climate Funds, Public-Private Partnerships, Green Bonds or officially supported export credits**.

Image of Hermosillo
Source: Future Cities Mexico

Integrated Transport Systems

Transport system integration is about linking different transport services or systems together to make it more efficient, easier and more cost-effective for users, thereby encouraging intermodality and discouraging the use of private motor vehicles. Integration can include payment mechanisms, service operations and governance.

Future Cities projects related to integrating transport systems:

Project name	Location	Duration	Led by
Strengthening the Integrated Mobility System's governance structure	Mexico City	October 2019 - April 2021	WRI MÉXICO ROSS CENTER
Strengthening the financial scheme and fare structure of Mexico City's public transport system	Mexico City	October 2019 - November 2020	steer
Feasibility study of the suburban public transport system in the Metropolitan Area of Hermosillo	Hermosillo	October 2020 - September 2021	WRI MÉXICO ROSS CENTER

"The work carried out by the Future Cities program has been essential for the orderly and effective implementation of the necessary steps to achieve mobility integration in Mexico City".

"The mechanism provided by the programme to distribute the revenue from top-ups to Integrated Mobility (IM) cards between the transport agencies that make up the Integrated Public Transport System (SITP) was institutionalised. We've been able to carry out monthly compensation between SITP agencies since February 2020. This has also helped lay the foundations to incorporate concessional buses to the use of the IM card, since we now have a tool that allows the calculation and transparent compensation of resources between transport agencies".

SEMOVI's Undersecretary of Planning, Policies and Regulation

Image of an Integrated Mobility card in use on the Metro in Mexico City
Source: Future Cities Mexico

What thematic barriers were identified?

Public transport policies are disconnected from territorial planning and land management policies, resulting in high operational inefficiencies, greater travel distances and costs for users, a saturation of public transport systems and an increase in the use of private, motorised transport.

Fragmentation between transport systems exacerbates existing inequalities, with the poorest families spending almost 20% of their income commuting for work and study.

There is no single transport system branding that allows users to identify all the modes of transport that exist in a city and how they are connected to each other.

The lack of a single payment method that can be used in different transport systems is inconvenient and more expensive for users who must pay for several separate journeys. It also limits the financial control that authorities have over transport service providers.

The lack of integrated transport results in transport that operates without formal planning or adequate fleets. This mainly affects lower income populations, who are a large share of the public transport users in Mexican cities.

How did the programme tackle climate and resilience issues around transport system integration?

1. In Mexico City, having a standardised method to collect and manage fare revenues will create increased budget allocations for fleet and infrastructure maintenance, which will improve the quality of service. This will **make public transport a more attractive travel option** for citizens, and encourage its use over privately owned vehicles, thereby **reducing congestion and carbon emissions.**

2. **Adoption of the proposed short-term measures in Hermosillo could result in an estimated 8% increase in demand for suburban transport.** Assuming that new users are currently traveling by private vehicle, a 10% decrease in their carbon footprint could be achieved by a modal shift from the car.

How has the programme addressed these barriers?

Programme activity included designing tools to support the integration of public transport services, developing a technical study to integrate the use of Integrated Mobility cards[13] (IM cards) for *microbuses*[14], and providing a best practice benchmark of fare structure.

- Designed and delivered various tools to support Mexico City's authorities **in achieving their goal of integrating the city's public transport services**, such as:
  - **Income and expenses registration and control tool** for the agencies that provide public transport services in the city.
  - **Income Compensation Mechanism tool** between transport agencies, as a unified mode of payment in most of Mexico City's transport services.
- **Developed a technical and legal study for initial integration of the use of IM cards in *microbuses***. Since *microbuses* are the mode of transport with most users in the city, introducing the use of IM cards was a key step in bringing forward a more integrated system, facilitating greater control and accountability, which in turn is expected to bring a better quality of service to the public.
- Provided Mexico City's authorities **with a diagnosis and an international best practice benchmark of fare structure and fare products**.
- **Provided a proposal to redefine suburban transport routes** for their physical and operational integration with Hermosillo's Integrated Transport System (UNE).

How did the programme tackle gender and social inclusion issues around transport system integration?

1. **Registered the needs and views from public transport users** in Mexico City and Hermosillo (women, men, people with disabilities and their caregivers) through interviews, surveys and focus groups, to inform recommendations.

2. **Conducted a co-design exercise with transport users and operators in Hermosillo** to workshop and receive feedback on proposed solutions.

3. **Conducted an online survey to capture disaggregated data** (by sex, age, income, disability, ethnicity, and educational level) to provide recommendations regarding the coverage and accessibility of the planned IM card top-up network.

4. **Developed a short business case** on the potential benefits of **women's participation in the labour force in the public transport sector**, particularly in operative roles.

[13] The IM card is a contactless payment method for public transportation in Mexico City, based on the Calypso international standard. It offers interoperability with the *Metro*, *Metrobus*, *Ecobici*, *Cablebús*, *Tren Ligero*, *RTP* and *Trolebus* systems.
[14] Concessional buses (also known as *microbuses*, *colectivos*, *peseros*, among others) are privately owned vehicles run by independent operators under individual or organisational government concessions. In Mexico City, this mode of transportation accounts for 60% of all transit in the city, with about 14 million daily riders on 29,000 buses that run more than 1,500 routes. The challenge is that microbuses run on flexible routes and timetables, making them an unpredictable way to get around.

What impacts has the programme had already?

Key achievements: Transformation of Mexico City's Transport Regulatory Body into a decentralised body, the installation of IM card validators in 390 new buses, the formal adoption of the Income Compensation Mechanism, and actions to integrate suburban transport to Hermosillo's transport network.

In August 2021, **Mexico City formally adopted the programme's recommendation to transform the city's Transport Regulatory Body (ORT) to a decentralised body**, to manage the incorporation of microbuses to the Integrated Mobility System.

This change will allow ORT to operate a top-up network (outside of Metro and Metrobús stations). For the first time, users in Mexico City will be able to top-up their IM cards in local businesses or through a mobile app, which represents an **increase in the coverage of the physical top-up points from 437 to 1,153 (164% increase) and a 20% saving in time spent to top-up IM cards.**

Image of the Integrated Mobility Card in use on a bus in Mexico City
Source: Future Cities Mexico

As of February 2022, IM card validators have been installed in 390 new buses that service 5 routes in Mexico City. These buses now belong to the Integrated Mobility System, meaning that authorities will have better control of fare revenues.

Users now have a unified mode of payment they can use in the different transport modes in Mexico city, and **bus drivers' earnings will no longer depend on the number passengers they transport**, but will rather receive a fixed salary. **Concessional companies** in charge of operating the bus routes **will have greater control over their operation and the quality of the service provided**.

The Income Compensation Mechanism between Transport Agencies was formally adopted by Mexico City's Integrated Transport System Committee in October 2020. Since then, this tool has:

- Supported the incorporation of the ORT as the fifth transport agency participating in the Integrated Mobility System's income compensation process.
- Been successfully used to carry out distributions of revenue derived from the top-up of IM cards, and to produce balance reports, increasing transparency and accountability. This may translate into a better service to the public.

The use of the IM card as the only means of payment in the different modes of transport in Mexico City will allow SEMOVI to have the necessary tools for the analysis of the needs of users and fare integration (free or discounted transfers). This will make it possible to benefit vulnerable groups, such as people living in the city outskirts and women, who make the largest number of chained trips.

Following the programme's recommendations, authorities in Hermosillo are trying to secure funding to purchase card validators for suburban buses as a first step to integrate them to the use of Tarjeta UNE, the electronic payment method used in Hermosillo's Integrated Transport. This will also allow Hermosillo's authorities to provide specific subsidies for users and bus operators.

Key programme tools

The following are available at www.ciudadesdelfuturo.mx

- International case studies of integrated travel cards and payment systems
- Report on laws that support fare policy in Mexico City
- Analysis of types of fare subsidies
- Guidance on budget building in mobility from a gender perspective
- International case studies of income and expenditure frameworks in public transport
- Report on socio-demographic context of suburban transport in HMO
- Report on suburban public transport conditions in HMO
- Transport demand and data from suburban areas in HMO

Recommendations

As a result of projects related to the integration of transport systems, Mexico City now holds a **roadmap to implement short and long term changes to stimulate positive and direct impact on the system's financial sustainability and to generate better information about system performance and user behaviour**. The system collects around £3.3m daily.

The following recommendations are based on the work of the programme and can be applied more generally:

- Establish a tool to distribute revenues collected through the use of pre-paid cards between the different public transport agencies.
- Ensure there is a transport agency with the right administrative and functional structure to manage the operation of public transport concessions (e.g. microbuses).
- Establish regulatory guidelines for the use of pre-paid cards.
- Improve processes to monitor operating costs of the transport system centrally.
- Implement a model to monitor operational costs.
- Review different options to update the public transport fare structure, for example, the establishment of discounted transfers.

Monterrey, Mexico

Metropolitan Governance

Metropolitan governance is the process by which government bodies (at all levels) and non-governmental actors (such as civil society, business associations, unions, etc.) collaborate to deliver services and formulate public policy for an entire metropolitan area. It determines how services are delivered and coordinated across local government boundaries and how costs are shared throughout the metropolitan area.

Future Cities projects related to metropolitan governance:

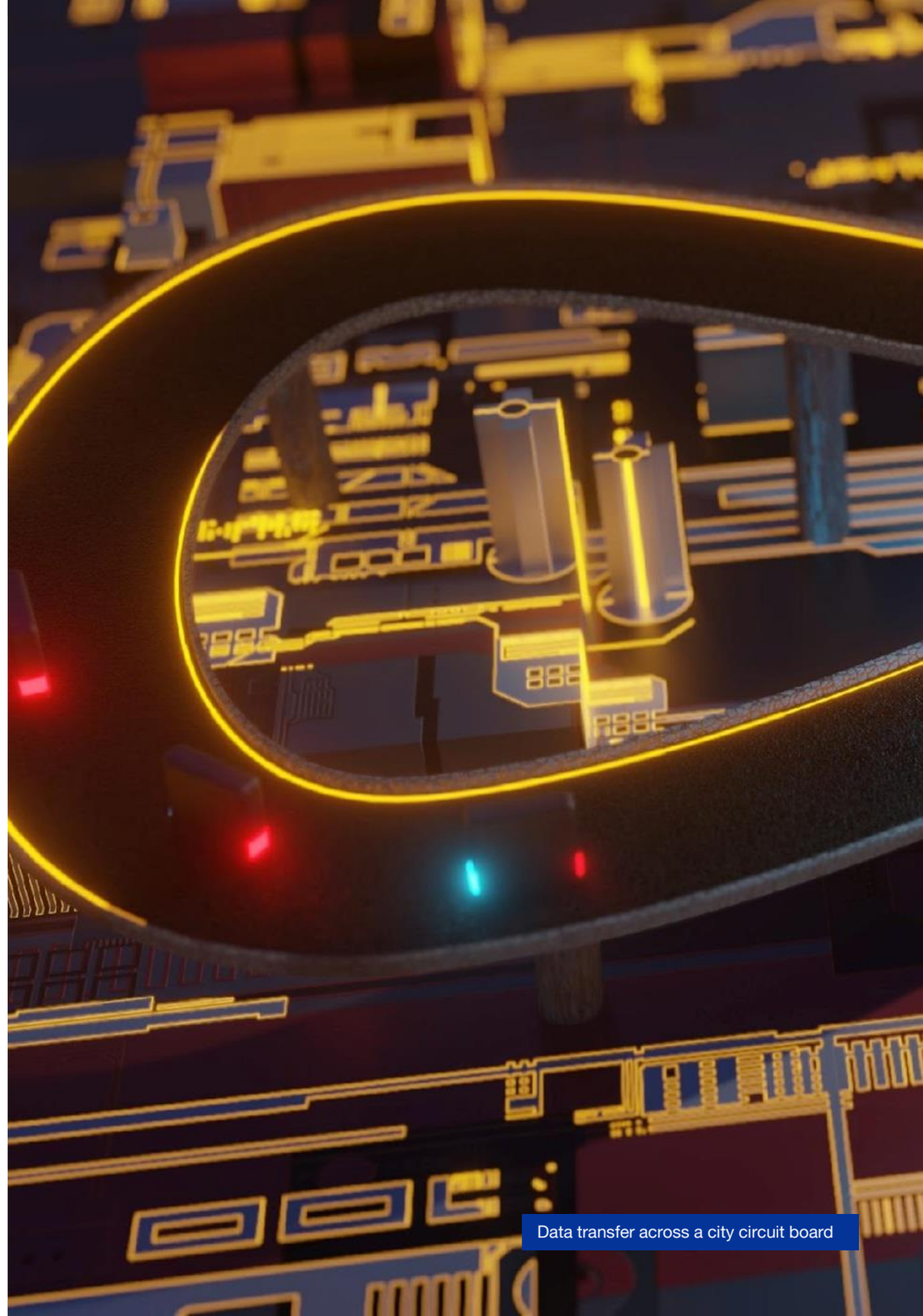
Project name	Location	Duration	Led by
Mobility Management Centre of the Monterrey Metropolitan Area	Monterrey	October 2019 - April 2021	steer
Metropolitan governance model for mobility and accessibility in the Metropolitan Area of Querétaro	Querétaro	February 2020 - April 2021	ITDP

"One of the immediate impacts of the project was a better understanding of the concept of metropolitan governance, as well as a commitment to the gender perspective in the design of public policy on transportation. In addition, the participation of the State Women's Institute and other specialists in gender perspectives positioned these actors in the metropolitan governance scheme".

Managing Director, Director of Citizen Outreach, and Technical Director of the Transport Institute of Querétaro (IQT)

"The project helped us understand the need to have metropolitan coordination in an urban area such as the Monterrey Metropolitan Area for the success of city-focused policies."

Director of Urban Engineering of the Ministry of Sustainable Development of the State of Nuevo León



Data transfer across a city circuit board

What thematic barriers were identified?

The low-density, **dispersed urban model established in Mexico presents serious environmental and socioeconomic problems**, such as the urbanisation of agricultural land, higher pollution levels, increased water stress, increased socio-spatial segregation and unequal access to urban goods.

There is a **dissociation between transport planning and active mobility, rehabilitation of public spaces, and transport demand management**. This generates inequalities in the provision of infrastructure and mobility programmes in metropolitan areas.

Formal mechanisms (based on a legal framework) **of inter-institutional and metropolitan coordination** on metropolitan issues **are scarce**, which causes **silos and isolated action**. The informal mechanisms for coordination developed by some institutions are fragile and unreliable.

Urban fragmentation has led to private cars being a main mode of transport and increases in the cost of providing full public transportation coverage to the peripheral areas of the city. This reduces access to employment and services for those in the outskirts.

Most cities in Mexico **lack reliable, up-to-date, and accurate information to support mobility and urban development planning** and policy-making at a metropolitan scale.

How did the programme tackle climate and resilience issues in metropolitan governance?

1. The programme's work in Monterrey and Querétaro made it possible for different **authorities to collaborate to set common environmental goals** and coordinate actions to achieve them.
2. The MMC's modules were **designed to collect and provide reliable emissions data** to support the design of their environmental policy, contribute to the reduction and management of emissions related to transport operations and mobile sources, and support emergency response protocols in the event of a natural disaster or a severe hazard to the transport network.

How has the programme addressed these barriers?

Activity included developing a new metropolitan governance model, improving coordination on urban development, mobility and environmental policies, and supporting the design of a Mobility Management Centre.

- **Developed a metropolitan governance model** to enable municipal and state governments to coordinate on urban development, inclusive mobility and environmental policies for the Querétaro Metropolitan Area.
- **Proposed the creation of four institutions for metropolitan coordination** in Querétaro to deal with political, management, and technical matters. Additionally, delivered draft legal reform initiatives and a draft interinstitutional agreement to lay the foundation for the establishment of the proposed metropolitan governance model.
- Supported the Nuevo León state government in **designing the governance, functional and operational structure of a Mobility Management Centre (MMC)**, to improve access to mobility data and facilitate inter-institutional coordination to develop mobility policies that contribute to effective planning and operation of transport in the Monterrey Metropolitan Area.

Image of Integrated Mobility Maps in a station on Line 7 of the Metrobús system in Mexico City
Source: Future Cities Mexico

How did the programme tackle gender and social inclusion issues in metropolitan governance?

1. In Monterrey and Querétaro, the programme facilitated **close collaboration between transport agencies, operators and wider public institutions which are not traditionally involved in mobility planning** (e.g. women's institutes) to address issues like gender-based violence and harassment against women in transport.
2. The MMC's vision statement incorporated gender and inclusion elements to **support evidence-based public policy design through disaggregated data that recognises different users and needs**, and therefore aims to improve spatial equality and equal access to opportunities in Monterrey.

What impacts has the programme had already?

Key achievements: Provisions for the MMC being added to Nuevo León's new Mobility Law and it being incorporated into the Mobility and Accessibility Institute.

Following the programme's recommendations, **Nuevo León's Sustainable Development Secretariat (SEDESU) included provisions in the new Mobility Law** and other key regulations for the establishment of the MMC, including its mission, vision, purpose and guiding principles.

The state's Mobility and Accessibility Institute (IMA) also accepted the proposed structure for the MMC (with some minor adjustments). In December 2020, the first MMC Director was appointed to oversee the implementation activities, and **the MMC has been formally incorporated to IMA's structure**.

The state government now holds a set of short, medium and long term strategies to guide the implementation of the MMC **and improve decision and policy-making In the Monterrey Metropolitan Area**.

The programme facilitated a **knowledge exchange between Greater Manchester Combined Authority and metropolitan stakeholders in Querétaro**. Manchester was identified as an exemplary case study of metropolitan planning and transport operation with an urban accessibility perspective from which the QMA authorities could learn from.

Over 110 local stakeholders collaborated with the programme in metropolitan governance projects, creating inter-institutional links with government agencies and other relevant institutions that had not previously been involved in mobility policy-making in the past, such as public Women's Institutes, municipal officials, academia, civil society, the private sector, and environmental agencies. Sustained collaboration among these actors is necessary to generate a multidisciplinary and comprehensive approach in developing solutions to transportation and urban development issues.

"The approach with the Manchester model showed us the key points to consider to advance in a model of metropolitan planning for mobility. But above all, having achieved this relationship with the British authorities was a positive impact for our institutions."

Managing Director, Director of Citizen Outreach, and Technical Director of the Transport Institute of Querétaro (IQT)

Key programme tools

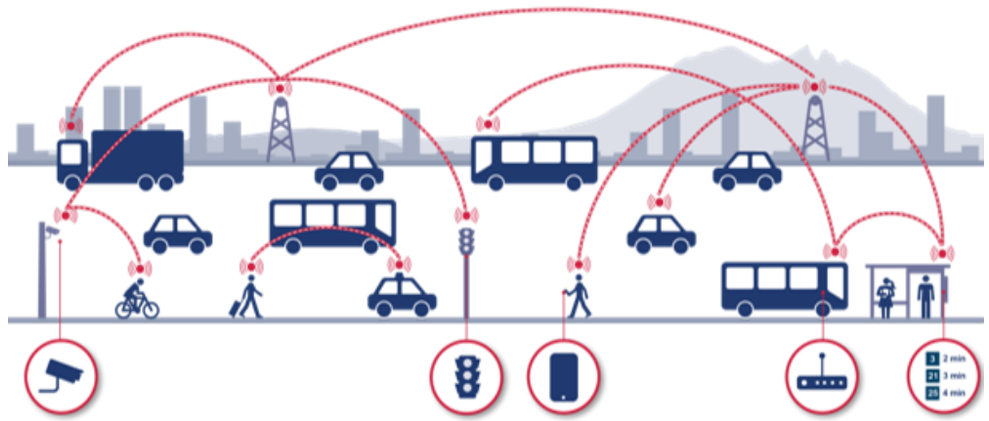
The following are available at www.ciudadesdelfuturo.mx

- International case studies around metropolitan governance systems
- Territory and mobility in Querétaro

Recommendations

The following recommendations are based on the work of the programme and can be applied more generally:

- **Establish formal channels (e.g. formal agreements)** to increase collaboration between state and municipal officials to standardise and improve data collection on mobility, agree on data sharing requirements, and on metropolitan decision-making protocols.
- Consider the **creation of metropolitan governance agencies to streamline the regulation and operation** of mobility and public transport at the metropolitan level.
- Recommended agencies include institutions for metropolitan coordination to deal with issues that are **political** (e.g. Metropolitan Ordinance Commission), **management** (e.g. metropolitan planning subcommittees), **participatory** (e.g. Metropolitan Development Advisory Council), and **technical** (e.g. Metropolitan Planning Institute).



Graphic produced to accompany recommendations shared with Monterrey
Source: Future Cities Mexico

Los Arcos aqueduct, Querétaro, Mexico

Infrastructure

Infrastructure for public transport refers to the structures and facilities which connect people and places, such as bus stops, bus routes, cycle lanes, pedestrian walkways and crossings, and signage.

Future Cities projects related to infrastructure:

Project name	Location	Duration	Led by
Technical assistance to Mexican cities for COVID-19 Recovery: *Keeping Mexico Moving*	Guadalajara, Querétaro, Mexico City, and Monterrey	May 2020 - Aug 2020	**All**
Socio-economic evaluation of projects: Territories of peace and well-being through the evaluation of investment projects	National	August 2020 - Jan 2021	ITDP
Neighbourhood mobility	Mexico City	Nov 2020 - Feb 2021	steer
Bus stops, data and urban design for inclusion ('Safe bus stops')	Guadalajara	March 2020 - Nov 2021	ITDP
Green bus stops competition	National	June 2021 - March 2022	ITDP
Financing e-buses through FONADIN[15]	National	June 2021 - March 2022	steer
Feasibility study of the suburban public transport system in the Metropolitan Area of Hermosillo	Hermosillo	March 2020 - August 2021	WRI MÉXICO ROSS CENTER

"We have accepted the project's recommendations and we will keep working with the municipalities to be able to implement them in the different bus lines of the AMG. The purpose is that the actions do not remain as an effort in one or two bus lines, but rather implementing them in all of the bus lines."

Director of Management and Monitoring of the General Strategic Coordination of Territory Management of the Government of Jalisco.

"Thanks to the project, we recognised that the provision of the public service of suburban transport in Hermosillo has been presenting important and serious operational, administrative and economic deficiencies, to the detriment of users. We want to guarantee that the suburban passenger transport service is available to the entire population, without discrimination based on gender, age, ability or condition."

Director of Operations of the General Directorate of Transportation of Sonora

[15] This project has been funded by UK PACT (Partnering for Accelerated Climate Transitions). UK PACT is a £60m flagship programme under the International Climate Finance (ICF) portfolio. It is part of the UK's £5.8bn commitment to International Climate Finance by 2021 to tackle climate change, funded by the Department for Business, Energy and Industrial Strategy (BEIS). UK PACT's mission is to support partner countries to increase their ambition to tackle climate change and accelerate their own clean growth transitions; to increase the capacity and capability of partner countries to meet those raised ambitions and reduce their emissions; and to help countries to reduce harmful carbon emissions and alleviate poverty, unlocking opportunities in the global net zero economy.

Image of the winning concept of the Green Bus Stops competition, Econectar by RPS Sociedad Creativa. This design incorporates recycled materials, solar panels and locally occurring plants to enhance temperature control, attract biodiversity, manage stormwater runoff and celebrate the local culture. Source: RPS Sociedad Creativa

What thematic barriers were identified?

There is a **lack of coordination in planning and operation of transport agencies, poor infrastructure for public transport** that does not connect city centres to peripheral areas, and **inefficient policy and data systems**. This causes a daily loss of 3.3 million person-hours in Mexican cities.

Poor bus stop infrastructure in Mexican cities, paired with **lack of information regarding schedules and routes** make it difficult for users to plan their trips and reduce the amount of time they are exposed to uncomfortable or unsafe environments.

The **geographic coverage of suburban transport routes in Mexican cities is often insufficient**. This generates more complex and expensive trips for people who live far from bus stops, that directly impacts on living costs and access to services, education and employment.

Infrastructure for public transport in Mexican cities **needs better signage, information on routes and schedules, and improved management of intersections** with other modes of transport, for example bicycle lanes.

How did the programme tackle climate and resilience issues in infrastructure?

1. The programme developed **solutions to collect, analyse and systematise data regarding the energy efficiency and fuel consumption of buses**. This will help identify driving practices (such as speeding or abrupt driving) that are more fuel-intensive, so that steps can be take to minimise them and the associated emissions.

2. Proposed replicable design principles to **ensure climate adaptability of bus stops in a local context**, and making public transport more attractive for users, potentially reducing emissions if it results in users shifting from private vehicles to public transport.

3. **Encouraged the design of proposals and ideas that promote the experience and use of urban bus stops integrating green infrastructure components.** The programme received 39 proposals and selected 5 finalists which were showcased in a public event.

How has the programme addressed these barriers?

Activity included developing design guidelines and recommendations to improve safety and sustainability of bus stops, proposing the redesign of suburban bus routes, and implementing technical solutions to improve travel planning and monitoring.

- Developed **design guidelines for bus stops** in the Guadalajara Metropolitan Area (AMG), which are applicable in cities across the country, and provided recommendations to **inform the development of the state of Jalisco's Technical Standard for bus stops**.
- Designed solutions to **improve infrastructure of bus stops and surrounding areas**, as well as **technology solutions to improve travel planning and monitoring**, including real time data on bus locations.
- **Identified infrastructure requirements** needed to improve the **quality, safety and reliability** of suburban transport services connecting the eastern Hermosillo Metropolitan Area (HMA) to the city centre.
- Proposed the **redesign of two suburban bus routes** to extend geographic coverage in Hermosillo, to benefit neighbourhoods with poor connections to the city centre.
- Conducted a d**etailed assessment of available infrastructure for public transport** (eg. walkways, cycle lanes and crossings) in the Tlahúac municipality in Mexico City using drone aerial photography to document the physical characteristics of the streets.
- Ran a nation-wide **design competition**, inviting concepts to improve urban bus stops by integrating **green infrastructure** components with clear environmental and social benefits. The programme received 39 valid entries from teams across the country, which included elements such as sustainable materials, energy efficiency, and climate-smart designs. The programme team engaged with relevant stakeholders (i.e. private sector representatives and local authorities) to encourage the implementation of the winning design.

How did the programme tackle gender and social inclusion issues in infrastructure?

1. Proposed technological solutions to help enhance travel planning options to **allow women and other users to minimise the amount of time they spend at bus stops, which they often perceive as unsafe**.

2. Recommended **physical and environmental improvements to infrastructure for public transport** that can improve the perception of bus stop safety, such as clear signage, lighting, urban art and technology.

3. Promoted **design principles to increase the use of transport by vulnerable groups and universal accessibility**, such as podo-tactile guides and wider spaces.

4. Provided **training sessions focused on the importance of recognising the needs of all users to design inclusive infrastructure**, including a masterclass titled "Magic bus stops" by Nick Tyler[16] and a training session on the bus stop design guidelines developed by the programme.

[16] Director of University College London's Centre for Transport Studies, and Chadwick Professor of Civil Engineering.

What impacts has the programme had already?

Key achievements: Recommendations have informed the development of the Technical Standard for Bus Stops, which is now being implemented in the Guadalajara's Macrobus System, with plans to scale-up to the rest of the city.

Authorities in the Guadalajara Metropolitan Area (AMG) used our infrastructure recommendations to inform the development of a Technical Standard for Bus Stops. This official instrument establishes the minimum requirements that all the new bus stops in the Guadalajara metropolitan area must now comply with.

The technical bus stop design guidelines developed by **the project have impacted the design of bus stops beyond the project's original target location ('18 de Marzo' bus corridor), as they were used in a new infrastructure project in the city: Line 3 of the Macrobus System** (a public BRT service). Additionally, the guidelines were used to inform the selection criteria for the 'Green bus stops' design competition and shared with relevant stakeholders for their replication in contexts beyond the city of Guadalajara.

As a result of the Green Bus Stops design competition, five finalist bus stop designs were shortlisted **with innovative ideas to improve safety and comfort for bus users, leading to social and environmental benefits**. All the proposals have innovative components that could be taken up in the development of infrastructure in Mexican cities. One of the largest bus stop operators in Mexico expressed interest in using the knowledge developed by the programme to improve their designs.

Image of the ConectaBus concept submitted to the Green Bus stops competition
Source: ConectaBus

Key programme tools

The following are available at www.ciudadesdelfuturo.mx:

- Infrastructure requirements in public transport (bus stops) projects
- Analysis of case studies for the improvement of mobility at a neighbourhood scale
- Methodology for the assessment of urban environments

Image of the MITBus concept submitted to the Green Bus Stops competition
Source: Movilidad Integral de Transporte

Recommendations

Recommendations made to ensure improved infrastructure in the future, include:

- **Establishing processes, criteria, indicators, and evaluation methodologies to assess the geographic impact of investment projects** (e.g. transport infrastructure, industrial parks, energy infrastructure or housing). These measures would strengthen the evaluation tools of current projects and provide mechanisms that allow for a more inclusive, safe, resilient, sustainable and equitable use of resources.
- Bus stop designs should include, safety, accessibility, legibility, adaptability, and social inclusion elements to improve user experience.
- State and municipal authorities should consider a wider spectrum of financing alternatives beyond national, metropolitan and local development funds, such as multilateral Development Banks and International Climate Funds, Public-Private Partnerships, Green Bonds or officially supported export credits.
- Scaling up the measures established during the pandemic related to mobility, including the creation of sustainable mobility corridors (for walking, cycling or public transport), improvements to bicycle lanes, adjustments to transport demand management policies and their operation to improve the flow of passengers, and the implementation of user information platform systems.
- Designing and implementing evaluation and monitoring plans to assess the results and areas of opportunity in infrastructure projects such a new design for bus stops, considering user experience. The resulting data can inform decision-making in terms of scaling up an intervention or replicating it in other cities or contexts.
- Socialising designs for transport infrastructure (e.g. bus stops) that consider climate and inclusion benefits across different city governments and other relevant stakeholders, such as the private sector, so they can apply lessons learned in future projects.

Guadalajara, Mexico

Keeping Mexico Moving through the COVID-19 pandemic

During the COVID-19 pandemic the Future Cities programme provided vital technical support to enable people to efficiently and safely resume economic activity and travel in Mexican cities.

What did the programme do to help address mobility problems created by COVID-19?

During the first year of implementation, **the programme had to quickly adapt to the challenges posed by the COVID-19 pandemic**. This situation meant adjusting work plans, ways of working and activities that were envisioned in different circumstances. Additionally, it became an opportunity to put forward the programme's expertise to support local authorities' response efforts by providing the necessary technical support to efficiently and safely resume economic activity and travel. Through the **COVID-19 recovery support package, known as 'Keeping Mexico Moving'**, the programme provided assistance to Guadalajara, Hermosillo, Mexico City, Monterrey and Querétaro to adapt their transport systems in response to the restrictions. Furthermore, the programme developed guides to remotely engage beneficiaries and stakeholders, and a preliminary analysis on the impacts of the pandemic on people's mobility, particularly women and vulnerable groups.

What impacts did the programme have?

In Mexico City, the programme developed and implemented a monitoring and evaluation framework to assess three temporary measures established by the government to facilitate mobility during the pandemic: temporary bicycle lanes, travel demand management plans, and temporary pedestrian flow control for Metrobús stations.

The programme provided recommendations to improve the three measures, including the creation of a sustainable mobility corridor, and physical improvements to bike lanes.

Methodologies to implement Transport Demand Management (TDM) plans were delivered to the authorities **in Guadalajara, Monterrey, and Querétaro**, along with recommendations on potential funding and financing opportunities to help alleviate financial pressures derived from COVID-19.

In Hermosillo, the project provided recommendations for the development of a communication strategy to inform users of changes made to keep them safe while getting around the city during the pandemic, as well as recommendations on funding and financing opportunities to implement these improvements.

Image of a bus passenger during the COVID-19 pandemic
Source: Future Cities Mexico

In March 2021, Mexico City's Mayor announced that the pop-up bike lane over Insurgentes Ave. would become permanent. The data and recommendations provided by the programme were used as an input and technical evidence during discussions around the decision, and were also considered in the development of the executive project to install the necessary infrastructure for the conversion of the pop-up bike lane into a permanent one.
In October 2020, Nuevo León's Secretary of Sustainable Development and the Mayor of Apodaca, agreed to carry out the necessary steps for the operation of a pop-up bicycle lane and an emergent express transport, both recommended by the programme.

Key programme tools

The following are available at www.ciudadesdelfuturo.mx

- Briefing paper on the impacts of COVID-19 on the mobility of women and other vulnerable population

How did the programme tackle climate and resilience issues in a COVID-19 context?

1. Ensuring climate and resilience criteria were **considered within the monitoring and evaluation framework** proposed for the temporary measures implemented by Mexico City (pop-up bike lane, travel demand management, and pedestrian flow control). **Two specific indicators were proposed**: Emissions of particulate matter and Concentration of NO_2.
2. Provided **input for the design of a survey** to assess environmental impacts of the proposed interventions in all five cities; and **reviewed responses** to ensure that climate and resilience was adequately articulated and incorporated within the final recommendations to the city.

How did the programme tackle gender and social inclusion issues in a COVID-19 context?

1. Developed **a briefing paper on the impacts of COVID-19 on the mobility of women and vulnerable groups**.
2. Engaged with external stakeholders, including city counterparts, through **five online workshops**, which informed participants about the specific **impacts of COVID-19 on the mobility of women and other vulnerable groups**.
3. **Convened non-profit and academic experts** who, alongside city stakeholders, **provided first-hand information** about the needs and challenges facing the target populations

Closing remarks

The Future Cities Mexico Programme started after years of preparation by the UK government and a bidding process in which the Future Cities Alliance was awarded the contract to develop this multi-year programme, under a theory of change oriented towards enabling better access to jobs and opportunities, particularly for women and girls.

Three years after initiating activities, this brochure reflects the impact of the work and commitment of more than 180 team members. The legacy of the interventions includes insightful diagnostics, instruments, public policy and governance recommendations, amongst other outputs outlined in this document.

The programme also implemented pilot projects in a relatively short time frame accompanied by evaluation frameworks. This was made possible thanks to the continuous work and commitment from all the authorities involved in the programme. Partnerships remained productive and committed even throughout the most difficult times of responding and adapting to the COVID-19 emergency.

The actions outlined herein will only achieve the long term objectives set out in the Theory of Change if they are considered as an initial seed that requires nurturing, care and continuation of the effort.

Our call to action to all Future Cities stakeholders and city authorities in Mexico and around the world: The time is now to build on what this Programme started, not just to implement, but to learn, amplify and replicate.

Liliana Pereira

Liliana Pereira
Programme Technical Team Leader, Steer

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- Secretariat of Mobility, Mexico City government
- Integrated Transport System Committee (Metro, Metrobús, Red de Transporte de Pasajeros, Transportes Eléctricos), Mexico City
- Transport Regulatory Body, Mexico City
- Secretariat of Sustainable Development, Nuevo León state government
- Querétaro's Transport Institute, Querétaro state government
- Secretariat of Urban Infrastructure and Development, Sonora state government
- Metropolitan Planning Institute, Guadalajara Metropolitan Area
- Metropolitan Agency for Infrastructure for Mobility, Guadalajara Metropolitan Area
- Land Management Strategic General Coordination, Jalisco state government
- Planning and Institutional Development Unit, National Secretariat for Agrarian, Land and Urban Development

We would also like to thank members of our Programme governance board:

- World Bank
- Inter-American Development Bank
- UN Women
- National Works and Public Services Bank (Banobras)
- UN Habitat
- Secretariat of Agrarian, Land, and Urban Development (SEDATU)
- Senate of the Republic
- Mario Molina Centre

Further information and contacts

Further information about the programme and downloadable materials can be found at www.ciudadesdelfuturo.mx

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