



Mobility and Transport Connectivity Series



# The Path Less Travelled

Scaling Up Active Mobility to Capture Economic and Climate Benefits



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# The Path Less Travelled

## Scaling Up Active Mobility to Capture Economic and Climate Benefits

By enabling more walking, cycling and public transport use, large-scale interventions to scale up active mobility can deliver significant, quantifiable benefits that dwarf the upfront costs



### Challenges

- Rising vehicle ownership and motorized transport dominance
- Allocation of more road space to motorized transport
- Increased funding for road maintenance, shifting away from low-carbon travel options



### Opportunities for Low and Middle Income Countries

- Unique advantage in lower levels of motorization
- Higher starting point for sustainable mobility options
- Opportunity to capitalize on 'low-hanging fruit' market segments

## Active Mobility Modes



### Walking

Primary mode in many LMICs, lacks necessary infrastructure



### Cycling

Convenient for short trips, hindered by the lack of safe infrastructure



### Use of Public Transport

Expanded public transport catchment areas increase ridership and revenue

### Goals for scaling up

- Maintain low levels of motorization
- Unlock walking, biking, and public transport segments
- Emphasize impact of enhanced active mobility infrastructure in LMICs

### Benefits

- Quick to pilot, adjust, and implement
- Expanded ridership and revenue from increased access to public transportation
- High return on investment in the near term
- Health care savings from improved air quality and road safety
- One of the most cost-effective ways to reduce greenhouse gas emissions from urban transport

### Challenges

- Unclear which agency or level of government is responsible for planning and implementation
- Transport investments prioritize larger-scale interventions like BRT and metro
- Limited awareness of available financing mechanisms
- Rare and inconsistently funded national-level cycle infrastructure plans

#### Tianjin, China

34,281 tCO2e

#### Lima, Peru

USD 2.6 million

#### Addis Ababa, Ethiopia

10 tCO2e

#### Dar es Salaam, Tanzania

N/A

#### Buenos Aires, Argentina

ARS 5.6 million

## To Do Checklist to scale up active mobility investments

### Project Preparation

- Integrate Active Mobility with Public Transport
- Align with Urban Development, Public space, and Related agendas
- Position Active Mobility to Advance Broader Transport Goals
- Incorporate Supportive Elements beyond Infrastructure

### Project Financing

- Build Coalitions for Financing
- Seek Financing beyond Transportation Departments
- Leverage Innovative Financing

### Project Implementation

- Set Active Mobility Targets
- Track Key Project Indicators

### Institutional Framework

- Build Internal Capacity
- Develop a Standardized CBA Methodology
- For Active Mobility





# 1

Introduction

**With increased urbanization and economic growth, cities across the world must find ways to meet urban mobility demands while ensuring transportation is affordable and emissions that contribute to climate change are limited.**

As cities rapidly urbanize and people's incomes rise, vehicle ownership is growing and more road space is being allocated to motorized transport, and thus more funding is required to maintain roads and vehicle infrastructure. This implicit subsidy of vehicle use leads to fewer low-carbon, low-cost trips by foot, bicycle, and public transport - the opposite of what is needed to reduce harmful emissions and achieve more equitable, livable cities for people. A 2021 analysis by UC-Davis and ITDP estimates that current trends will lead to 40% less urban travel by walking, cycling, and public transport by 2050. This in turn will lead to a 33% increase in greenhouse gas (GHG) emissions above current levels<sup>1</sup>.

In seeking ways to decarbonize while developing, many cities in low-and-middle income countries (LMICs) have a unique advantage. They can capitalize on lower levels of motorization and a higher share of trips already made by active mobility.

### Box 1. Definition of Active Mobility

#### What is active mobility?

Active mobility is human-powered mobility, such as cycling, walking, or rolling (using mobility-assistance devices). When safe, direct infrastructure is provided, active mobility can directly replace vehicle kilometers traveled, making these modes effective at reducing vehicle emissions, bridging the first- and last-mile gap, and improving individual and public health.

Source: Adapted from US Department of Energy [https://afdc.energy.gov/conservation/active\\_transportation.html](https://afdc.energy.gov/conservation/active_transportation.html).

**Scaling up active mobility infrastructure provides cities in LMICs a key opportunity to maintain low levels of motorization, and maximize investments in public transportation. It also allows them to unlock the 'low-hanging fruit' market segments for walking, cycling, and public transport. While all three are equally important, this paper will focus on the impact of enhanced cycle and pedestrian infrastructure in such cities.**

In many cities in LMICs, walking is the primary mode of travel. However, they often lack the necessary infrastructure to support walking, rendering it unsafe or unattractive and used by necessity rather than by choice<sup>2</sup>. Many of these cities benefit from relatively short trip distances<sup>3</sup> that support cycling as a convenient and primary mode of travel. For this distance, the most convenient means of travel for more than half of the population<sup>4</sup> is a bicycle. However, when safe, convenient routes for cycling are not available, the demand does not materialize. Governments then find it difficult to justify or plan for future cycle infrastructure,

<sup>1</sup> The Compact City Scenario - Electrified.

<sup>2</sup> Pojani and Stead 2015

<sup>3</sup> About 40% of all trips in many LMICs cities are 2-5 km long.

<sup>4</sup> Between 50-60% of people report being willing to use a bicycle only if high-quality cycle infrastructure is available. See: [Understanding the "Four Types of Cyclists"](#).





leaving climate and other benefits on the table. For longer trips, a network of cycle lanes that connects to public transport significantly expands the number of people who can feasibly access public transport and makes low-carbon multimodal trips more viable and convenient<sup>5</sup>.

**By enabling more walking, cycling and public transport use, large-scale interventions to scale up active mobility can deliver significant, quantifiable benefits that dwarf the upfront costs (see Section 3).**

Because active mobility infrastructure is relatively faster to build and relatively low-cost to implement compared to other transport infrastructure, payback periods are also shorter. Cycling infrastructure generates climate, health, and economic benefits in the near term, often paying for itself over periods as low as two years. These investments have also been shown to be a cost-effective way to reduce mortality and bring in health co-benefits of climate action<sup>6</sup>.

Active mobility networks can also help build urban resilience and address climate challenges especially when designed alongside stormwater management and other green infrastructure. “Greening” streetscapes has also been shown to improve the attractiveness of cycling<sup>7</sup>. In times of crisis, cycle infrastructure and bicycles can support efficient movement of people and goods when communications and power networks go down, as was seen in Mexico after the 2017 earthquake, and in many cities during the COVID-19 pandemic<sup>8</sup>.

**Still, there are very few cities outside of Northern Europe that have a complete network of protected bicycle lanes and walking infrastructure, or the sustained funding needed to develop and maintain active mobility infrastructure at scale.**

The transformation of street networks to support active mobility is often hindered by

- A lack of clarity around which agency or level of government is responsible for these interventions
- A lack of priority for such investments
- A lack of awareness of the investment mechanisms that are available to finance them

National-level cycle infrastructure plans are rare and inconsistently funded. Walking and cycling have not been institutionalized in most government transportation departments. It has proven difficult for many cities to fund cycle and pedestrian infrastructure directly, and other avenues for financing (traditional loans, blended financing) have been pursued inconsistently.

Many cities also struggle to communicate the benefits of active mobility for everyday trips, which can lead to a lack of public acceptance, especially from drivers, for active mobility infrastructure projects and increased spending on these modes. This can limit efforts to implement networks at scale.

<sup>5</sup> [Maximizing Micromobility: Unlocking Opportunities to Integrate Micromobility and Public Transportation.](#)

<sup>6</sup> <https://link.springer.com/article/10.1007/s11524-020-00510-1>.

<sup>7</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0169204618313732>

<sup>8</sup> <https://www.bloomberg.com/news/articles/2017-09-28/parks-and-bicycles-were-lifelines-after-mexico-city-s-earthquake>; <https://www.reuters.com/world/asia-pacific/bicycle-riding-volunteers-deliver-medicines-indonesias-semarang-2021-07-30/>



**The purpose of this paper is to make the case for scaling up financing for active mobility, leveraging lessons learned, and identifying and replicating successful investment mechanisms from case studies from LMICs.**

The distinct context and experiences in the five cities reviewed illustrate the ability, affordability, and benefits of scaling up active mobility investments – especially cycling – in such cities.

The paper also highlights key financial players in active mobility and provides a call for action for key stakeholders. These include

- (1) *City and national governments* – who are primarily responsible for planning, designing, and implementing active mobility infrastructure at scale
- (2) *Development partners* – development banks and financial institutions who play an important role in supporting national and city governments as they plan, design, and implement active mobility infrastructure. This could involve activities such as advancing financing and technical assistance for these projects. Development partners also include institutions with a broader focus than urban mobility, i.e., urban development, public health, road safety and others.
- (3) *Philanthropy and civil society organizations* – which can provide technical assistance, funding, and coordination support to governments as they work to design and implement active mobility infrastructure.

The remainder of the paper is structured as follows:

**Section 2:** Background to underscore why investment in active mobility is urgently needed

**Section 3:** Key climate, health, and other economic benefits of active mobility

**Section 4:** Case studies featuring five cities with dedicated cycling infrastructure

**Section 5:** Key takeaways from the case studies

**Section 6:** Path forward for international financing of active mobility infrastructure

**Appendix:** Detailed discussion of the five case studies that informed this discussion paper





# 2

Why Investment  
in Active Mobility  
is Needed

**Urban transportation policies, investments, and infrastructure have historically prioritized the movement of vehicles without considering broader economic, environmental, and social impacts.**

As a growing number of cities experience rapid urbanization, decision makers are increasingly recognizing that in well-functioning cities not everyone can own a vehicle and use it for the majority of their trips. There is simply not enough space to move and store that many vehicles. The impacts on the climate, human health, and economic inclusion would be catastrophic.

In spite of this knowledge, the car-based planning paradigm continues, with dire consequences. Indeed, a 2021 analysis by UC-Davis and ITDP estimates that current trends will lead to 40% less urban travel by walking, cycling, and public transport by 2050. This in turn will lead to a 33% *increase* in greenhouse gas (GHG) emissions above current levels<sup>9</sup>.

However, to meet the Paris Climate Agreement, GHG emissions in the sector will need to *decrease* by two-thirds. **According to the same study, the cost of a car-centric transport system is enormous, requiring 50% more transport spending from governments and individuals than a system based on walking, cycling, and public transport**<sup>10</sup>. This figure does not include savings on indirect costs such as reduced healthcare expenses and greater economic productivity. These will likely lead to greater savings. Governments in particular will save as much as 20% on transport budgets, though the specific number varies by country<sup>11</sup>.

**If this trend continues, increased urbanization and economic growth will squander the real benefits provided by high levels of walking and cycling in LMICs.** While sometimes overlooked, active mobility can be a critical part of public transportation trips, as users can walk or cycle to transit stations. However, as cities rapidly urbanize and incomes rise, vehicle ownership replaces low-carbon, low-cost trips by foot and bicycle. This has been observed in India, Indonesia, and Brazil, among other middle-income countries<sup>12</sup>.

Figure 1 shows the increase in greenhouse gas emissions anticipated in 2030 and 2050 if no action is taken to shift demand away from polluting transport modes (business as usual or BAU). There is a significant decrease in emissions associated with a “high shift” scenario, where more and better public transport, cycling, and pedestrian infrastructure, sustainable land-use policies, and traffic reduction strategies are prioritized<sup>13</sup>.

<sup>9</sup> [The Compact City Scenario – Electrified.](#)

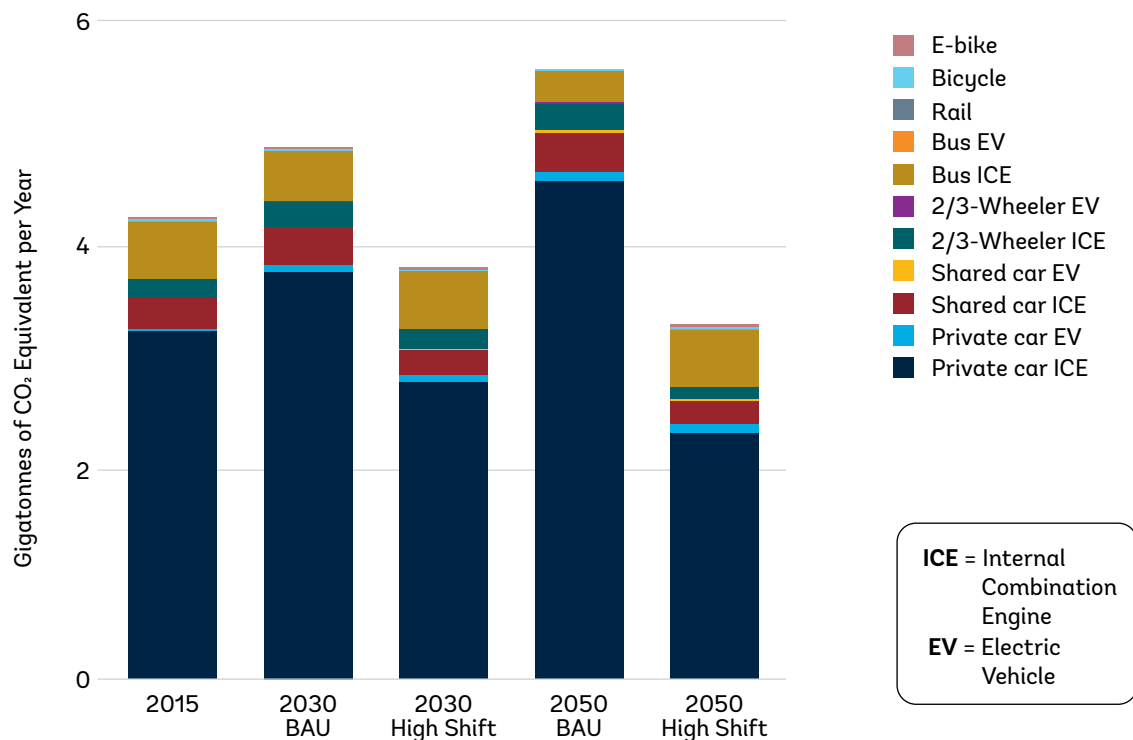
<sup>10</sup> [The Compact City Scenario – Electrified.](#)

<sup>11</sup> Compact Cities Electrified: Countries series, forthcoming.

<sup>12</sup> [Impact of public transport and non-motorized transport infrastructure on travel mode shares, energy, emissions and safety: Case of Indian cities; Private car ownership in Indonesia: Affecting factors and policy strategies; Built Environment and Physical Activity for Transportation in Adults from Curitiba, Brazil](#)

<sup>13</sup> [The Compact City Scenario – Electrified.](#)



**Figure 1. Greenhouse Gas Emissions from Urban Passenger Transport (By Mode)**

Source: The Compact City Scenario – Electrified (<https://www.itdp.org/publication/the-compact-city-scenario-electrified/>).

**While public transport has been more seriously prioritized and financed in recent decades due to its economic and climate benefits, active mobility has been largely overlooked<sup>14</sup>.**

In many cases, key decision makers view cycling as recreational, not as a means of transportation. However, major international sustainable development frameworks like the New Urban Agenda and the UN Sustainable Development Goals identify urban cycling infrastructure as critical to safe, economically inclusive streets and public spaces<sup>15</sup>.

Investment in cycle lane networks — and supportive infrastructure like bikeshare systems, cycle parking facilities, in particular for transit intermodal transfer stations/terminals, and complementary education and training programs — supports access to jobs and essential services, especially when integrated with public transport networks<sup>16</sup>. Cycling is also a quick-to-implement strategy with much shorter implementation timelines compared to metro or even BRT projects. Notably, walking has also been under-prioritized in transport plans and budgets. While this report focuses on barriers, financing opportunities, and economic returns specific to cycling infrastructure due to the data available, a similar effort should be undertaken focusing on pedestrian infrastructure.

<sup>14</sup> Investing for Momentum in Active Mobility.

<sup>15</sup> The New Urban Agenda - Habitat III; Sustainable Development Goals & Cycling.

<sup>16</sup> Potential impacts of bike-and-ride on job accessibility and spatial equity in São Paulo, Brazil; All Possible Commutes: How Micromobility and Realistic Car Travel Times Impact Accessibility Analyses.



**Active mobility is increasingly recognized as a decarbonization tool by governments and an attractive transport option by the public.**

Momentum around cycling as a viable transport mode in cities gathered serious attention during the COVID-19 pandemic. Frontline workers and the public sought out bicycles as a way to move around with limited exposure to others. Cities and national governments responded by making space on streets for cycling, providing free access to bikeshare systems, and allocating budget to bicycle purchase incentives<sup>17</sup>.

In the years since, several national governments have gone further, allocating funding directly to active mobility infrastructure improvements. In 2021, Ireland increased its national active mobility budget from 2% to 20% of the country's transport budget, an estimated EUR360 million per year. The country aims to reduce its GHG emissions by 7% per year through 2030. It has identified "an unprecedented modal shift [supported by] a reorientation of investment to walking, cycling and public transport" as a critical strategy to achieve that goal<sup>18</sup>.

In 2023, in line with its Plan Velo, France committed to spend EUR250 million per year through 2027 on bicycle infrastructure. This would encourage a shift away from car use, promote cycling as a health solution, and drive economic development around the bicycle industry<sup>19</sup>.

Non-governmental organizations have launched campaigns to support and communicate the work cities are doing to build cycle infrastructure. They also aim to shift the perception of cycling from a recreation or sport to an everyday transport mode<sup>20</sup>.

**While many other countries have also committed to accelerate active mobility, car-centric policies continue to dominate agendas. This approach deters further investment and foregoes tangible benefits.**

Capturing the wide economic benefits of active mobility, and cycling in particular, is an important step towards a paradigm shift at the government level. It will make a case to tilt focus, finance, and physical resources towards active mobility.

<sup>17</sup> COVID-19 Cycling Measures Tracker; COVID Mobility Works.

<sup>18</sup> Programme for Government: Our Shared Future.

<sup>19</sup> France to spend 2 billion euros to boost bicycle usage; Le Plan vélo et marche 2023-2027 est lancé.

<sup>20</sup> ITDP's Cycling Cities campaign; GDCI's Bloomberg Initiative for Cycling Infrastructure.





# 3

Tangible Benefits  
of Active Mobility  
Infrastructure

The return on investment for bicycle infrastructure is high on multiple fronts. The economic, climate, and health benefits generated from investments in cycle infrastructure are detailed below, however we also see benefits from the network effect of cycle infrastructure supporting access to other sustainable transport investments, such as metro or BRT.

### Economic benefits

Investments in high-quality cycle infrastructure supports people cycling more frequently and yields economic benefits for individuals and for society.

Cycling on protected bicycle lanes saves users time and money on every trip, making it a cost-effective transport mode. This is especially important for people with low incomes, whose spending on transportation accounts for a larger share of household income compared to people with higher incomes. The protected cycle lane network in Bogotá saves cyclists USD0.62 per trip, totaling USD80 million per year in cost savings for individual travelers. Guangzhou's protected cycle lane network saves users USD0.10 per trip, for a total of USD30 million per year in transportation cost savings<sup>21</sup>.

At the city level, more people cycling and walking means fewer cars on the road, and fewer construction and maintenance costs for car-specific infrastructure. When it is not necessary to build and maintain new roads, car parking, and other vehicle-supportive infrastructure, money budgeted for those services can be allocated to other uses. Furthermore, value for all property types – residential or business – is found to be higher if they are close to areas with dense cycle infrastructure<sup>22</sup>.

### Image 1. Pita Deliveryman & Bike, Cairo Egypt



Source: <https://www.flickr.com/photos/adamcohn/52674974297/in/album-72177720305848975/>.

<sup>21</sup> Protected Bicycle Lanes Protect the Climate.

<sup>22</sup> Liu & Shi, Impact of bike facilities on residential property prices; Karadeniz, Exploring active transportation investments and associated benefits for municipal budgets: a scoping review; Racca & Dhanju, Property Value/Desirability Effects of Bike Paths Adjacent to Residential Areas.





## Climate benefits

Investments in cycle lane networks have proven to be extremely cost-effective in terms of GHG emissions reductions per dollar invested, even compared to investments in BRT and metro (Table 1).

**Table 1. Cost-Effectiveness of Sustainable Transport Investments**

City	Project	GHG reduction (tons/yr)	Total cost (USD, 2022)	Cost-effectiveness (tons of GHG emissions/million USD invested)
Guangzhou	Protected bicycle lane network	16,000	69 million	4,630
	BRT	40,000	234 million	3,423
Mexico City	BRT (Metrobus — Insurgentes)	26,000	152 million	3,412
Bogota	Protected bicycle lane network	22,000	132 million	3,333
	BRT phase II (2012)	80,000	989 million	1,618
Rio de Janeiro	BRT (Trans Carioca)	65,000	743 million	1,750
	Metro Line 4	55,000	7.7 billion	142
Beijing	Metro (Lines 6, 9, 10, 15)	529,000	39.8 billion	266

Source: \*Adapted from [ITDP's Protected Bicycle Lanes Protect the Climate](#).

When enabling infrastructure is provided, cycling is a low-carbon, energy-efficient form of transportation that yields climate benefits for cities.

The Intergovernmental Panel on Climate Change's Sixth Assessment Report states that the world cannot meet the emissions reduction goals set out in the Paris Agreement without a significant shift away from fossil fuel vehicles<sup>23</sup>. Cycling is a viable alternative for most short vehicle trips, but only when vehicle speeds are limited and high-quality infrastructure — protected bicycle lanes, safe intersections, secure parking — is available and accessible. Promoting a safe system approach<sup>24</sup> where vehicle speeds are managed for the safety of all road users is essential to promote cycling and walking as a safe, comfortable alternative.

## Health benefits

The health benefits as a result of more people cycling and walking are clear. The World Health Organization recommends expanding cycling and walking networks as a key strategy to reducing air pollution and improving public health.

<sup>23</sup> IPCC Sixth Assessment Report

<sup>24</sup> <https://www.roadsafetyfacility.org/publications/safe-system-approach-action>



Noncommunicable diseases associated with lack of exercise are increasingly prevalent in modern society. It is well documented that cycling provides the moderate daily physical activity needed to reduce premature mortality among the cycling population. A systematic review of 17 studies showed that commuting by walking or cycling decreased all-cause mortality by 9% and cardiovascular mortality by 15%<sup>25</sup>.

Investments in cycle lane networks also lead to fewer premature deaths from polluted air. Fossil fuel vehicles emit smog and soot that is harmful to human health. Shifting away from these vehicles reduces pollution levels and the associated burden of disease. Traffic crashes also contribute to premature mortality and disability. Segregated cycle lanes and intersections that separate cyclists from vehicles help to reduce serious crashes and make streets safer for all road users, even as cycling makes up a larger share of trips. For example, Bogotá, Colombia saw a significant increase in bicycle use from 0.2% to 7% thanks to the city's cycle lane network. In addition, they also saw a 34% decrease in bicycle-related deaths and 8% decrease in injuries<sup>26</sup>.

Lower healthcare costs and increased workforce productivity and efficiency from a reduced burden of disease, less polluted air, and fewer traffic crashes contribute indirect economic benefits to society.

### Image 2. Woman on a Bicycle in Hanoi, Vietnam



Source: <https://www.flickr.com/photos/adamcohn/52523032523/in/album-72177720303971417/>.

<sup>25</sup> Protective Effect on Mortality of Active Commuting to Work: A Systematic Review and Meta-analysis.

<sup>26</sup> Cyclist safety: an information resource for decision-makers and practitioners.





# 4

How Five Cities  
Scaled Their  
Active Mobility  
Infrastructure

To make the case for how and why to invest in active mobility infrastructure at scale, this paper draws insights from five case study projects:

- Tianjin, China
- Lima, Peru
- Dar es Salaam, Tanzania
- Addis Ababa, Ethiopia
- Buenos Aires, Argentina

The authors selected these case studies because they include large-scale investment in active mobility infrastructure. These examples demonstrate different approaches to integrating and financing active mobility infrastructure as part of larger urban transport projects. Some case studies include a larger focus on cycling only (e.g., Buenos Aires, Lima) while others include both cycling and walking (e.g., Tianjin). Table 2 provides a summary of each case study in terms of

- The motivations for investment in active mobility infrastructure
- A description of said infrastructure
- The key funding and financing sources

**Table 2. Case Studies Overviews**

Location	Motivation for investment	Active mobility infrastructure included as part of case study project	Funding/financing source(s)
<b>Tianjin, China</b>	Expand use of public transport, especially metro	126 km of cycle lanes (added or widened)  Also included investment in Complete Streets, public squares, streetlights, and traffic signals.	Government of China World Bank – IBRD
<b>Lima, Peru</b>	Improve traffic management and road safety	298 km of cycle lanes 98km (in development through 2025) 50km (planned starting 2025) 150km (planned starting 2028)	KfW World Bank – IBRD Mobility and Logistics Multi-Donor Trust Fund (for planning studies)



Location	Motivation for investment	Active mobility infrastructure included as part of case study project	Funding/financing source(s)
<b>Addis Ababa, Ethiopia</b>	Align with national and city-level Non-Motorized Transport (NMT) Strategies	60 km of cycle lanes  Also includes pedestrian infrastructure such as walkways.	<ul style="list-style-type: none"> <li>• Addis Ababa City Road Authority</li> <li>• Ethiopia Ministry of Transport and Logistics</li> <li>• Bloomberg Philanthropies</li> </ul>
<b>Dar es Salaam, Tanzania</b>	Support access to and ridership of BRT	19.3 km of cycle lanes (along BRT corridor)  Also included pedestrian infrastructure along the BRT corridor.	<ul style="list-style-type: none"> <li>• African Development Bank</li> <li>• Government of Tanzania</li> <li>• World Bank – IDA</li> <li>• Nordic Development Fund (for planning studies)</li> </ul>
<b>Buenos Aires, Argentina</b>	Align with city-level Sustainable Mobility and Climate Action Plans	307 km of cycle lanes  Bikeshare program improvements	<ul style="list-style-type: none"> <li>• Buenos Aires city government</li> <li>• World Bank – IFC</li> <li>• Mobility and Logistics Multi-Donor Trust Fund (for post-project evaluation)</li> <li>• Itaú</li> </ul>

Source: Original table produced for this publication based on data from case studies.

**The cities covered in this paper are at different stages in the process of scaling up active mobility. Some have laid out plans critical to unlocking financing and investments, while others are farther along and have succeeded in scaling up active mobility.**

The Buenos Aires and Tianjin projects successfully delivered active mobility infrastructure at scale. The Buenos Aires cycle lane network was mostly funded by the city, with some development bank financing of cycle lanes and bikeshare system upgrades as part of a larger BRT development project. The active mobility network in Tianjin was largely financed through development bank investment, a model that could be replicated in other places.

There are also ongoing projects with the potential to deliver scaled active mobility networks. In Lima, delivery of nearly 300 km of cycle infrastructure (supplementing the city's existing 300 km) financed by KfW and the World Bank, is planned, but not yet fully implemented.



Ethiopia's NMT strategy lays the groundwork for city-wide active mobility networks not only in the capital Addis Ababa, but in all secondary cities. However, it is not fully funded. If these cities follow the trajectory of Tianjin and Buenos Aires, having such plans in place is an important step to facilitate investment from development partners<sup>27</sup> to support implementation.

**While implementation scales and investment mechanisms differ, the case studies demonstrate that active mobility investments are not only possible, but bring climate and economic benefits for cities that outweigh the costs.** They also help development banks reach internal commitments (such as alignment with the Paris Agreement). The economic, climate and societal benefits resulting from the investments covered in the case studies are summarized in table 3 below.

**Table 3. Benefits of Case Study Project Investments**

Project	Economic evaluation	GHG emissions reductions	Health (air quality)	Health (road safety)	Time savings
<b>Tianjin, China</b> <sup>^</sup> Urban Transport Improvement Project	53.5% IRR <i>ex-post</i>	34,281 tCO <sub>2</sub> e	N/A	8% fewer crashes involving cyclists or pedestrians	15 min (per metro trip) 2-4 min (per bus trip)
<b>Lima, Peru</b> <sup>^</sup> Traffic management and cycle lane implementation	145.3% IRR (Phase 1) <i>ex-ante</i>	Valued at USD2.6 million	Valued at USD104 million	Valued at USD997 million	Valued at USD2.6 billion
<b>Addis Ababa, Ethiopia</b> Ethiopia NMT strategy	N/A	10 tCO <sub>2</sub> e (projected)	WHO ambient air quality norms met 95% of days/year (projected)	80% fewer pedestrian and cyclist fatalities (projected)	N/A
<b>Dar es Salaam, Tanzania</b> <sup>^</sup> Multi-phase BRT with cycle lanes	31.6% IRR (Phase 2) <i>ex-ante</i>	N/A	N/A	N/A	N/A
<b>Buenos Aires, Argentina</b> Protected cycle lanes on Av. Corrientes and Av. Cordoba	113% IRR <i>ex-post</i>	Valued at 5.6 million ARS (USD16,000)	Valued at 115 million ARS (USD328,500)	Valued at 17.7 million ARS (USD50,500)	Valued at 54 million ARS (USD154,000)

<sup>^</sup>Benefits calculated for the entire project which includes infrastructure and activities beyond cycling.

Source: Original table produced for this publication based on data from case studies.

<sup>27</sup> Development partners include development banks and other financial institutions.



Notably, the evaluations and quantification of benefits for each case study project were conducted using different methodologies and cannot be directly compared to one another. This presents a challenge for assuming an active mobility project of a similar scale in another location might yield similar results. A comprehensive methodology for evaluating the costs and benefits of any active mobility project would be a useful tool to reduce risk and build confidence among investors. This was noted in the completion report for Tianjin's transport improvement project<sup>28</sup>.

The case study projects also informed key takeaways from project preparation to implementation for

- a) International financial institutions (IFIs) to improve their ability to invest in and deliver truly scaled active mobility infrastructure projects;
- b) city and national governments to pursue and design integrated, financeable active mobility infrastructure projects and plans; and
- c) philanthropy and civil society organizations to support governments as they pursue active mobility funding and financing.

These are discussed in the next section. A larger description of the case studies is included in the Appendix.

<sup>28</sup> From Implementation Completion and Results Report for Tianjin: "Future economic analyses of active mobility infrastructure investments done by Tianjin or World Bank should conduct a more holistic economic analysis informed by best practice and not just use the motor vehicle-centric benefit and cost flows."





# 5

Key Takeaways  
and Call for Action



## Key Takeaways

The case study analysis generated several key takeaways that provide a foundation for action by different stakeholders to better support active mobility infrastructure project development. These takeaways apply to development partners and city and national governments as they seek to implement cycle and pedestrian infrastructure networks.

### Box 2. Key Takeaways for Scaling Up Active Mobility Investments

#### Institutional Framework

- Build internal capacity to institutionalize active mobility and scale up investments
- Develop a standardized cost-benefit analysis framework to comprehensively evaluate planned active mobility projects

#### Project Preparation

- Consider active mobility as a core component of an integrated urban mobility system and land use development
- Recognize the interdependency between transport planning, urban planning, public health, and the public space agenda
- Use active mobility as a pathway to advance broader urban mobility goals (e.g., increasing access to public transport and public transport ridership, road safety, etc.)
- For cycling, include components beyond cycle lanes, including bikeshare programs, bicycle parking and capacity building

#### Project Financing

- Development partners should work together and build coalitions that encourage blended financing for active mobility infrastructure projects
- Consider pooling sources of finance from parties motivated by related interests including public health, climate, and urban development
- Leverage existing project preparation facilities, or create new ones, to help prepare investment-ready active mobility projects
- Multiple financing instruments should be considered, including innovative climate financing mechanisms

#### Project Implementation

- Set targets for active mobility infrastructure delivery and impacts, and track as key project indicators



## Institutional Framework Takeaways

**With the support of development partners, cities need to build internal capacity to successfully champion and implement active mobility investments.** Largely, there is an institutional vacuum of responsibilities regarding active mobility development and management in many cities in LMICs. However, the case studies reviewed offer encouraging examples in terms of

- Creating active mobility-specific departments
- Financing institutional capacity-building
- Building internal capacity by engaging institutes for technical support for agencies responsible for planning active mobility improvements

For example, both the national government and Addis Ababa city government have formed non-motorized transport (NMT) departments<sup>29</sup> to oversee the implementation of NMT initiatives. This institutionalization of cycling as a transport mode also laid the foundation for Addis Ababa to be one of 10 cities selected to receive philanthropic funding for cycle infrastructure implementation through the Bloomberg Initiative for Cycling Infrastructure (BICI)<sup>30</sup>.

In Tianjin, institutional adjustments and building internal capacity and understanding of the value of active mobility helped the project move forward. A Project Management Office (PMO)<sup>31</sup>, along with other municipal agencies, defined the scope and ultimately coordinated and implemented the project. The PMO also engaged several design institutions and universities to provide technical support to overcome limited knowledge in planning and implementation.

To support scaled investment in active mobility infrastructure, development banks, philanthropy, and civil society organizations should collaborate to develop a standardized cost-benefit analysis (CBA) framework to comprehensively evaluate planned active mobility projects. This would help investors better understand potential returns on investment, and reduce risks. It would also minimize the need to conduct an expensive, time-consuming one-off CBA at the early stages of project development, reducing costs and timelines.

## Project Preparation Takeaways

**Development partners<sup>32</sup> must take a holistic view of active mobility as a key component of urban transport and urban development projects to ensure it is delivered at scale.**

Individual cycle lanes designed as add-ons to an already planned road or public transport project will not yield the mode shift needed to deliver significant health, air quality, or livability benefits. Instead, development partners must consider how the cycle lanes connect

<sup>29</sup> At the national level, this unit operates under the Ministry of Transport and Logistics, while at the city level, it operates under the Addis Ababa Transport Bureau.

<sup>30</sup> [Addis Ababa named winner of the Bloomberg Initiative for Cycling Infrastructure.](#)

<sup>31</sup> Which had been set up in the 1990s to oversee the first World Bank project financed in Tianjin

<sup>32</sup> Development partners include development banks and other financial institutions.



to a network of other lanes, greenways, and cycle-supportive streets, as well as how they connect to public transport to serve first- and last-mile trips.

Furthermore, projects need to recognize and consider the interdependency between transport planning, urban planning, public health, and the public space agenda. Land-use planning in particular may determine distances that people have to travel between work and home, how continuous transport networks are, and the attractiveness and useability of public space that supports active mobility options. Development partners should also work with cities to pursue Complete Street designs<sup>33</sup>, where cycle lanes, pedestrian infrastructure, public spaces, utilities, drainage, and green infrastructure are designed and delivered as a package.

The case studies reviewed illustrate good approaches in that regard. The TRANSIP project in Addis Ababa is designed to deliver five corridors using a Complete Street approach with dedicated sidewalks and bicycle lanes. In Dar es Salam, in addition to cycling infrastructure, the project included pedestrian infrastructure along the BRT corridor in phase 2. The Dar es Salam Metropolitan Development project supported upgrades in low-income communities including some footpaths. In Lima, Phase 1 funding of the Lima Traffic Management and Sustainable Transport MPA project is supporting the implementation of safe streets and intersections which include cycle and pedestrian infrastructure. Tianjin's urban transport improvement project included public space enhancements such as new and rehabilitated parks and public squares.

The Tianjin case study in particular illustrates the important impact investments in public space can have on walking, cycling, transport and the economy. It shows that all street improvements contributed to increased walking, cycling and metro trips. The project resulted in 261,144 additional daily trips by walking and cycling. In particular, the walk share jumped from 24% to 34% on weekdays and from 22% to 36% on weekends. The project and streetscapes also contributed to making transport roads safer in Tianjin and were associated with significant increases in the number, density, quality, popularity, and average sales of stores. During the project implementation, government staff learned from the experience of the project and reflected some suggestions to the 2021 national code on NMT design.

### **Investment in cycle infrastructure is a means of supporting other goals.**

For Tianjin, the initial motivation for investment in active mobility was to increase metro use. In Lima, cycle infrastructure is aligned with improving traffic management and road safety. In Addis Ababa, the focus of TRANSIP was improving road safety, and in Dar es Salaam, cycle infrastructure supports BRT access. In short, investment in cycle infrastructure not only aims to grow cycling itself, but also to support the broader transport network, particularly public transport or road investments. The case study from Tianjin illustrates that if the delivery of bicycle lanes, Complete Streets and public squares had not happened, the investment the city made in its metro system would have not been maximized.

<sup>33</sup> Complete Streets are streets that are designed to cater to the needs of all users and activities, through equitable allocation of road space. Complete Streets provide safe and inclusive environments that support users of all age groups, genders, and abilities. They also guarantee efficient mobility by focusing on moving people, user safety, universal accessibility, vitality and liveability, sensitivity to local context, and environmental sustainability (ITDP 2019: [https://www.itdp.in/wp-content/uploads/2019/05/CS-Policy-Framework\\_Web-Version.pdf](https://www.itdp.in/wp-content/uploads/2019/05/CS-Policy-Framework_Web-Version.pdf))



**A holistic view of active mobility also requires governments, project planners, and other development partners to identify and finance initiatives that are complementary to cycle infrastructure. This includes cycle training and bikeshare programs for potential users, and capacity building for city staff to develop a stronger cycling culture.**

Evidence shows these are critical to the success of cycle infrastructure<sup>34</sup>. For example, in Buenos Aires, private sector and development bank financing was used to deliver improved bikeshare service and weekly learn to ride classes for children. Bikeshare, bicycle parking, and even bicycle manufacturing offer opportunities for private sector investment, however such investments are typically secondary to cycle infrastructure itself. In other words, private companies have not invested in cycle lanes, and are more likely to invest in services once demand for cycling, supported by safe infrastructure, is present. In Lima, financing for capacity building aims to strengthen the ability of city staff to deliver high-quality cycle infrastructure. Cities that already have a cycle network plan or broader active mobility plan that includes these complementary initiatives should consider seeking financing to spread the cost of implementation over the use period of the infrastructure. Cities that do not have such plans developed should consider pursuing funding (philanthropic grants, project preparation funds, etc.) to help create them and lay the foundation for future implementation financing.

### Project Financing Takeaways

**Financial institutions, governments, and civil society organizations seeking to increase investment in climate-friendly, active mobility projects must build coalitions and work together.**

Each of these stakeholders has a role to play in designing and building out a network of cycle infrastructure, from planning to providing technical assistance to financing to implementation. There are helpful examples of this type of collaboration in the case studies:

- The World Bank and KfW supported MML to plan and implement cycle lane infrastructure in Lima
- The city of Buenos Aires worked with Tembici and Itaú to provide a bikeshare system
- The World Bank, UN-Habitat, and ITDP supported Addis Ababa and other Ethiopian cities for car-free days and other active mobility awareness events.
- A community of practice focused on knowledge sharing around planning for and promoting cycling in Latin American cities, including Lima, was launched by the World Bank and funded by the South-South Facility<sup>35</sup>.

Stronger coalitions will be important to uncover and communicate knowledge and process gaps, needs for tools or analytical frameworks, opportunities to co-finance projects, and more.

<sup>34</sup> [Strengthening the Human Infrastructure of Cycling: Soft Strategies for Inclusive Uptake; High-Quality Bike Facilities Increase Ridership and Make Biking Safer.](#)

<sup>35</sup> [América Latina en bicicleta: conocimiento y progreso sobre dos ruedas.](#)



Coalitions should include organizations focused on transport (such as the Global Road Safety Fund supporting the development of a sidewalk design and maintenance guideline in Addis Ababa) and other cross-cutting disciplines such as public health, urban development, and public space design. These agencies or portfolios have motivations similar to transport and active mobility, such as improving access and livability, and reducing economic and health disparities, and could therefore act as funding sources for active mobility. Case studies included in this paper show the complementarity of urban development, public space, and active mobility investments. They also show important positive impacts for public health and safety.

**Though not utilized in the case studies we reviewed, another financing opportunity to consider is project preparation facilities (PPFs). PPFs exist across many sectors to support cities in their preparation of large-scale projects, and to ensure those projects are investment-ready. Cities should consider leveraging existing PPFs to support the scoping and design stages of active mobility infrastructure projects so that these projects minimize risk and maximize the potential for success. Working within a PPF also presents opportunities to consolidate interest and commitments from multiple investors, and can act as a pipeline to scaled investment<sup>36</sup>.**

**The case studies discussed in this paper show significant emission mitigation benefits. This should help cities unlock climate financing by aligning transportation and climate benefits.**

In particular, investment in city-wide active mobility projects can help development banks achieve internal commitments to align lending with the Paris Agreement. Several banks have set near-term targets for climate financing.

- The World Bank's Climate Action Plan 2021-2025 calls for 35% of financing to support climate actions.
- The European Investment Bank's Climate Roadmap 2021-2025 commits 50% of its lending to green finance.
- The Asian Development Bank is doubling transport lending to USD4 billion per year with an emphasis on sustainable transport.
- The Latin American Development Bank (CAF) established a Green Bond Program to deliver infrastructure and projects necessary to a low-carbon society<sup>37</sup>.

City-wide active mobility infrastructure projects, like in Tianjin, strongly contribute to these climate change and mitigation targets. In the future, cities can also work with development partners to leverage innovative climate financing mechanisms such as carbon markets and accessing bond market financing. Such approaches help distribute risk and increase the confidence of banks and other investors to provide long-term financing. Because they are designed to support projects that reduce climate emissions and yield other climate benefits, green bonds might be a particularly attractive mechanism for financing cycle infrastructure.

<sup>36</sup> [What is a Project Preparation Facility?](#)

<sup>37</sup> Investing for Momentum in Active Mobility.



## Project Implementation Takeaways

**To ensure the delivery of cycle infrastructure and associated benefits, the investment in infrastructure must be tracked and reported on as part of key project indicators.**

Cycle infrastructure in the Tianjin project and in the forthcoming phases of the Lima project was approached as a network. Targets for kilometers of cycle lanes, and related indicators such as reduced vulnerable road user injuries and fatalities, were set at the start of the project, tracked throughout, and reported on at the close of the project. Conversely, the Dar es Salaam and Addis Ababa TRANSIP projects do not position cycle infrastructure as a critical component of the project at the start by including targets or metrics related to cycle infrastructure delivery. While these projects would still be viewed as successful if the cycle infrastructure component were not delivered, it is now recognized that a more comprehensive approach is preferred.

## Call for Action

Beyond the insights generated from the case studies, there are key opportunities for action by development partners, city and national governments and other stakeholders to advance and scale active mobility infrastructure financing. These are summarized in Table 4 below.

**Table 4. Key Financial Players and Call for Action to Scale Up Active Mobility**

Key Financial Players	Key Actions for Scaling Up Investment in Active Mobility
<b>Development banks</b> Multilateral and bi-lateral banks	<ul style="list-style-type: none"> <li>• Improve project design requirements to include and track active mobility investments in urban transport projects</li> <li>• Adopt a standardized CBA methodology and toolkit for active mobility infrastructure</li> <li>• Increase funding towards a coordinated effort to help build knowledge and capacity within national and city governments to design and implement active mobility networks</li> </ul>
<b>Local governments</b>	<ul style="list-style-type: none"> <li>• Develop (or update) an active mobility network plan that demonstrates a clear vision for how active mobility aligns with urban development, public health, climate, and related goals</li> <li>• Consider seeking grant funding from development banks, philanthropy, and others to develop a cycle network plan and/or evaluate CBA</li> <li>• Communicate the benefits of active mobility with the public and other road users to build support<sup>38</sup></li> <li>• Design and fund (or seek financing for) programs that support cycling (i.e. Bikeshare, secure parking, car-free events)</li> </ul>

<sup>38</sup> A recent report by the World Bank suggests that a good approach is to build trust when presenting an integrated long-term strategic plan that involves everyone and shows the benefits of a more balanced policy package to multiple constituencies. Showing how improvements like bike lanes can help ease congestion for car users and improving sidewalks eases the burden on the senior population can help build buy-in from the public (<https://openknowledge.worldbank.org/entities/publication/006565c0-c51b-4614-a1a2-35c29ece447b>).



<b>Key Financial Players</b>	<b>Key Actions for Scaling Up Investment in Active Mobility</b>
<b>National governments</b>	<ul style="list-style-type: none"> <li>• Develop (or update) a national active mobility plan that delivers multimodal transportation options</li> <li>• Coordinate with transport and planning authorities to develop planning guidelines and design standards that incorporate active mobility</li> <li>• Seek financing from development partners for active mobility network plan implementation</li> <li>• Require roads projects to include cycle and pedestrian infrastructure to qualify for national funding</li> <li>• Tie eligibility of local authorities for national funding to active mobility budget targets</li> </ul>
<b>Philanthropy and civil society</b>	<ul style="list-style-type: none"> <li>• Contribute to CBA methodology standardization efforts and data collection to make the case for active mobility infrastructure investments</li> <li>• Provide technical assistance to city and national governments to develop and implement cycle and pedestrian network plans</li> <li>• Coordinate key stakeholders to identify and address knowledge, data, and financing gaps</li> </ul>

\* While the private sector has not historically invested in cycle lanes or pedestrian networks, the private sector can help to scale demand for active mobility by investing in manufacturing, bicycle parking, and bike sharing services

Source: Original table created for this publication.





# 6

Path Forward  
For International  
Financing Of Active  
Mobility



The urban transportation sector is at an inflection point. It is one where business-as-usual investment in fossil fuel vehicle systems is increasingly harder to justify, but the demand for these investments persists. Cities and countries, especially in the Global South, that are rapidly urbanizing, growing their GDP, and seeing incomes rise cannot follow the emissions-intensive, car-centric development model of the last century. This is perhaps the most expensive and inefficient way to move people and goods around a city. It leads to higher healthcare costs, higher road injuries and deaths, reduced job access, lower worker productivity, and environmental degradation.

**Image 3. Cycling in Latin America**



Source: <https://www.flickr.com/photos/luddista/41094938020/in/photolist-iYQxD9-25Bqim9-iYMSi6-iYLA1k-iYQrhb-iYMZxB-iYQAsq-iYQAg3-iYLHFR-iYLFU4-PUUrq4-28i85sU-aNxYCX-QfjYwC-dwzxP1-zodZao-QXoxwj-rXKXqF-PUUKqc-2dF4adR-PUUKrz-RxdSJS-rDSojn-RxaHwj-2aUryij-PUUm8-2j8UC2M-2j8UC3J>.

**The case studies in this report provide helpful entry points for development banks and international financial institutions to shift investment strategies towards clean, sustainable mobility and help grow momentum towards active mobility.**

These examples demonstrate a path forward to unlock and expand financing for active mobility infrastructure by leveraging existing financial flows. As was done in Tianjin and Dar es Salaam, rail, BRT, and roads projects financed through development banks' transport infrastructure portfolios can build cycle and pedestrian infrastructure into their designs. There are also other entry points for financing outside of transportation portfolios, such as urban development. Cycle and pedestrian infrastructure could be formally recognized as an element of Complete Streets, along with components such as utilities, and green infrastructure, and funded through such implementation projects. Emerging climate financing mechanisms including blended financing could also be tapped to support cycle infrastructure delivery.

To scale up active mobility investments, forthcoming work from the World Bank and ITDP will explore standardizing a methodology to conduct cost-benefit analyses for cycle infrastructure projects. Such a framework will ensure a comprehensive, consistent comparison of value across project locations and scales.

This report lays the foundation for that larger effort, identifying institutional barriers to implementing not only cycling, but pedestrian infrastructure projects, and ultimately developing data-driven tools to reduce risk and build stakeholder capacity to invest in active mobility networks.



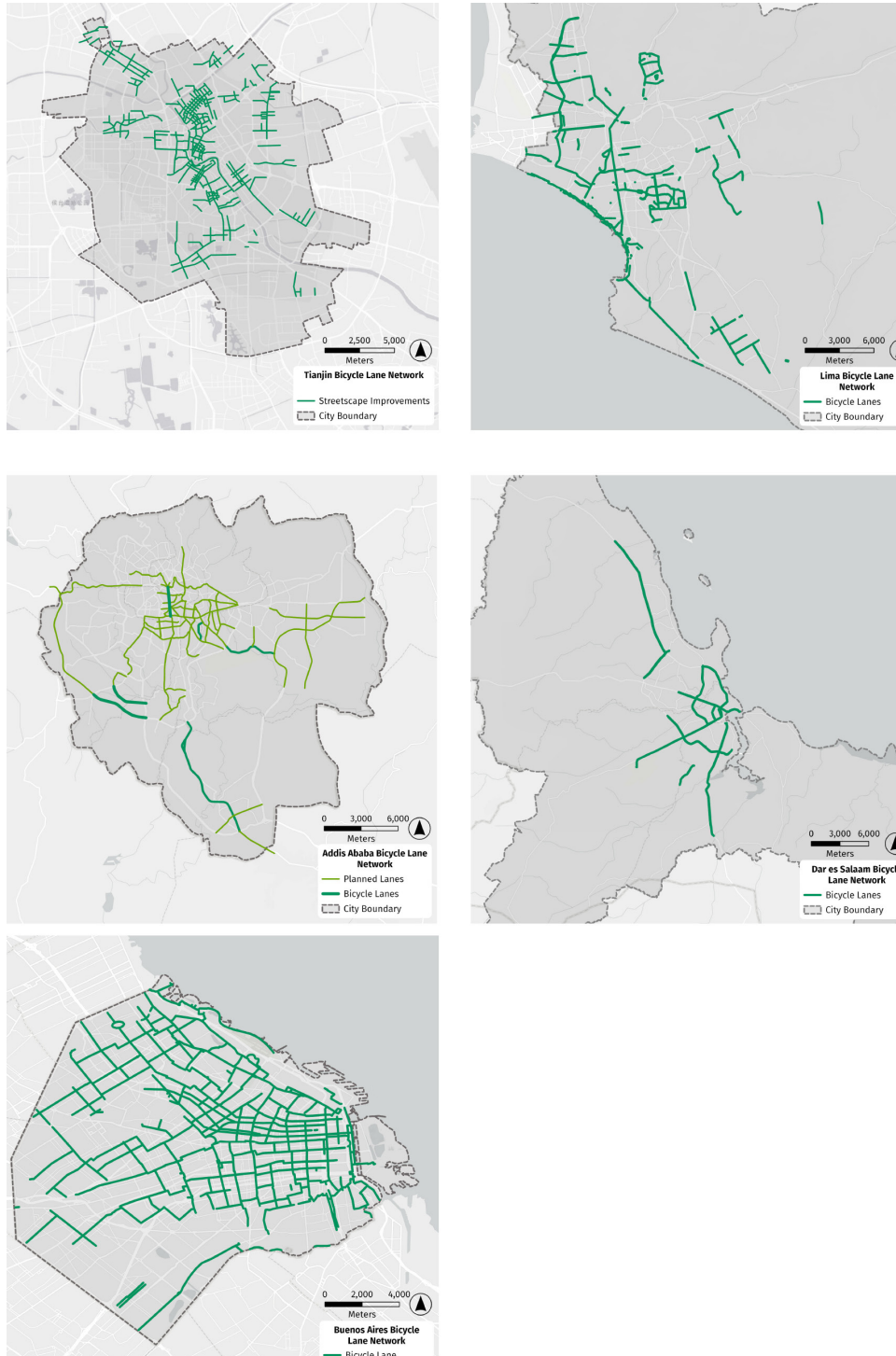


7

Appendix: Scalable  
Transformative  
Initiatives In Active  
Mobility

## Appendix: Scalable Transformative Initiatives in Active Mobility

Image 4. Map of Cycling Infrastructure in Selected Cities



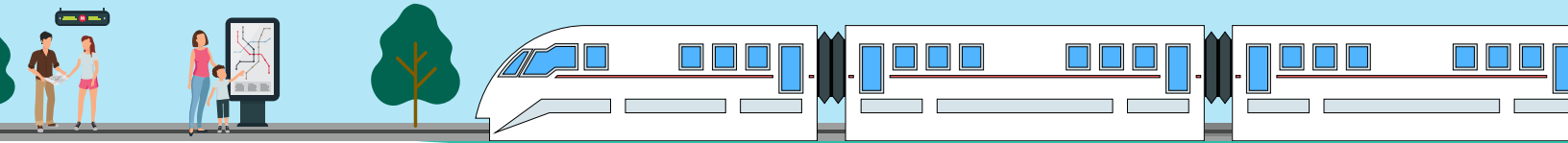
Source: Original map created for this publication.



# Tianjin, China

## A New Era of Investment in Active Mobility

Enhancing urban mobility in Tianjin to boost metro ridership and reduce emissions.



### Entry Point

The entry point for financing was to maximize the city's investment in its metro system. Streetscape and public space redevelopment were seen as a way to better connect people to the metro and thus was planned at scale and across the entire city. These interventions made up the core of the project



### Project Scope (2015-2022)



126 km of new cycle lanes



Streetscape improvements



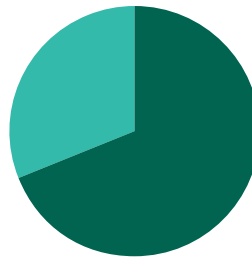
Redevelopment of 96 metro stations and 1 bus terminal



Upgraded new streetlights, traffic signals, and drainage systems

### Investment and Financing

Total cost: **USD144.7 million**



World Bank financing:  
**USD100 million**

Government of China contribution:  
**USD44.7 million**

### Impacts



**GHG Reduction:**  
34,281 tCO<sub>2</sub>e (same as to removing 7,600 cars annually).



Travel time savings, reduced vehicle operating costs, fewer crashes.



**Internal Rate of Return (IRR):** Initial 17.6% and Ex-post 53.5%.

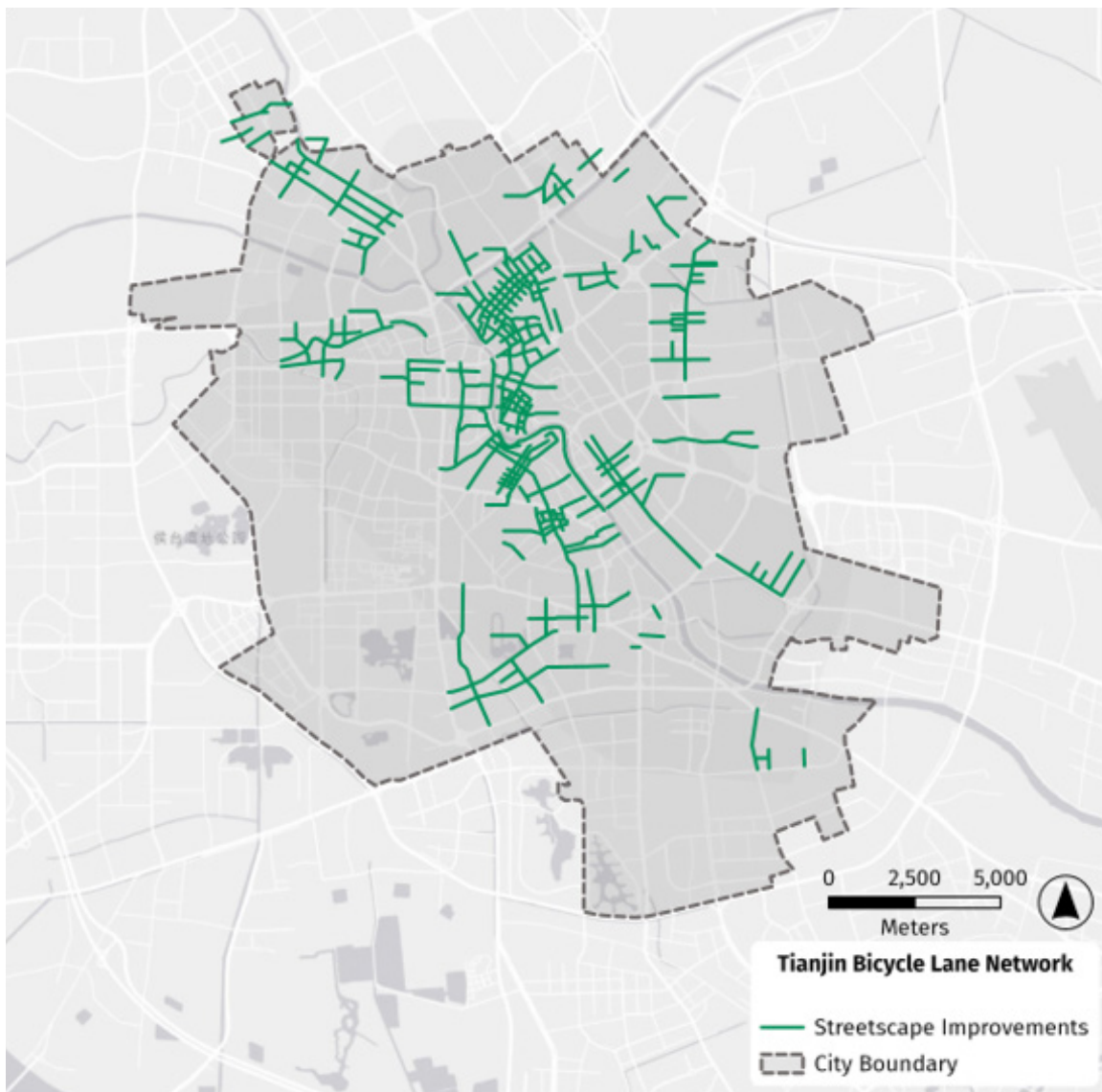
### Key Enablers To Success

- ✓ Streetscape and public space redevelopment
- ✓ Institutional adjustments and capacity building

## Tianjin, China: A New Era of Investment in Active Mobility

- **Motivation:** Expand use of public transport, especially metro
- **Infrastructure included as part of the project:** 126 km of cycle lanes. Also included investment in Complete Streets, public squares, streetlights, and traffic signals.
- **Result:** The full project including the streetscape and public space improvements, and bus terminal upgrades, reduced greenhouse gas emissions by 34,281 tCO<sub>2</sub>e<sup>39</sup>, the equivalent of taking 7,600 cars off the road every year<sup>40</sup>.

**Image 5. Streetscape Improvements in Tianjin**



Source: Original map created for this publication.

<sup>39</sup> Tianjin Implementation Completion Report.

<sup>40</sup> [Greenhouse Gas Equivalencies Calculator](#)



## Background

In the 1980s, many Chinese cities saw high usage of bicycles for commuting and other everyday trips because they were affordable and reliable. Bicycles were seen as essential household items, and bicycle lanes were prominent on major arterial roads<sup>41</sup>. The City of Tianjin was once known as “The Kingdom of Bicycles” because it was the location of the Flying Pigeon bicycle manufacturing factory. In 2003, 51% of trips in the city were made by bicycle<sup>42</sup>. However, as the country developed and automobile production expanded, car ownership rose sharply, driving down the use of bicycles<sup>43</sup>. Tianjin became the second most congested city in China, marked by high pollution and traffic deaths. By 2020, bicycle mode share had dropped to 34%.

At the national level, China’s Five-Year Plans have continually emphasized the need to prioritize clean transportation as part of urban development. Within this context, the Tianjin government approved a Congestion Mitigation Plan in 2013 which contained measures to shift vehicle trips to public transportation, cycling, and walking, and discourage the use of private cars.

The city invested heavily in a metro system, completing four lines totaling 135 km (of 13 planned lines) by 2013. However, ridership was lower than expected, at around 800,000 daily trips. Surveys showed that 76% of people walked and 5% cycled to the metro, but passengers were unsatisfied with their overall ability to access the metro, as well as bicycle parking availability<sup>44</sup>.

## Scaling up Active Mobility

Recognizing the city’s desire to boost metro ridership, the development bank-funded project in Tianjin was designed to expand access to the metro system by bus and active mobility modes. City officials were also interested in improving livability to attract young professionals and tourists who could support growing finance, research, and development industries<sup>45</sup>.

The project ran from 2015 to 2022, and included streetscape improvements, 126 km of new or expanded cycle lanes, new and rehabilitated parks and public squares, redevelopment of 96 metro stations and one bus terminal to improve access, more than 850 upgraded and new streetlights and traffic signals, and new street drainage systems. The project cost USD144.7 million, with USD100 million financed by the World Bank and USD44.7 million provided by the government of China.

<sup>41</sup> Lusk, 2012 “A History of Bicycle Environments in China: Comparisons with the US and the Netherlands

<sup>42</sup> J Pucher, ZR Peng, N Mittal, Y Zhu and N Korattyswaroopam, “Urban Transport Trends and Policies in China and India: Impacts of Rapid Economic Growth,” *Transport Reviews* 27.4 (2007): 379-410.

<sup>43</sup> Jun Zhuang, *A History of Bicycle Mobility in Urban China: Infrastructure, Economy, and Urban Planning*

<sup>44</sup> Tianjin Implementation Completion Report.

<sup>45</sup> Tianjin Implementation Completion Report.



## Impacts

An economic analysis of the project undertaken as part of the approval process identified cost savings as a result of

- Individual travel time savings
- Reduced vehicle operations costs
- Reduced bus operations and maintenance costs
- Reduced emissions
- Reduced vehicle crashes

Notably, the full project including the streetscape and public space improvements, and bus terminal upgrades, reduced GHG emissions by 34,281 tCO<sub>2</sub>e<sup>46</sup>, the equivalent of taking 7,600 cars off the road every year<sup>47</sup>.

An internal rate of return (IRR), a metric that estimates the annual rate of growth, over 25 years, was calculated at the start of the project at 17.6%<sup>48</sup>. The World Bank uses a 12% opportunity cost of capital (the rate of return that could be earned if the same investment was made in the best alternative project with similar risk and timeline), so the 17.6% IRR was favorable for the project to move forward.

An ex-post evaluation of the project after the infrastructure improvements were implemented estimated a much higher IRR of 53.5%. However, this likely underestimates the complete economic value of the project because the methodology did not quantify benefits from reduced air pollution, noise, or cost savings from fewer premature deaths and associated health benefits<sup>49</sup>.

## Discussion and Takeaways

The Tianjin project is the largest dedicated to active mobility that has ever been funded by the World Bank. The entry point for financing was to maximize the city's investment in its metro system. Streetscape and public space redevelopment were seen as a way to better connect people to the metro and thus was planned at scale and across the entire city. These interventions made up the core of the project. In other words, if the delivery of bicycle lanes, Complete Streets, and public squares had not happened, the project would not be considered successful.

Institutional adjustments and building internal capacity and understanding of the value of active mobility helped the project move forward. A Project Management Office (PMO), which had been set up in the 1990s to oversee the first World Bank project financed in Tianjin, along with other municipal agencies, defined the project scope and ultimately coordinated and implemented the project. The PMO engaged several design and university research institutes to provide technical support. The World Bank also provided targeted technical assistance to prioritize active mobility and integration with public transport.

<sup>46</sup> Tianjin Implementation Completion Report.

<sup>47</sup> Greenhouse Gas Equivalencies Calculator.

<sup>48</sup> <https://documents1.worldbank.org/curated/en/465901467991052298/pdf/PAD1145-PAD-P148129-R2015-0237-1-Box393264B-OUO-9.pdf>

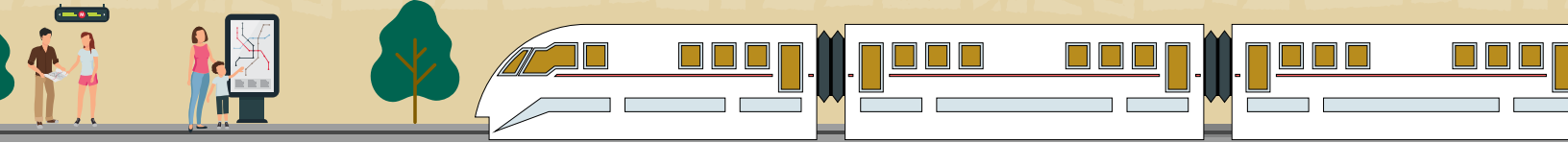
<sup>49</sup> Tianjin Implementation Completion Report.



# Lima, Peru

## Integrating Cycle Infrastructure with Traffic Management

Enhancing urban mobility in Lima to boost metro ridership and reduce emissions.



### Entry Point

Updating the Plan in 2020 with a relatively small grant ultimately catalyzed co-financing from KfW, as well as integration of cycling interventions into MML's eventual request for support for larger-scale improvements to traffic management and road safety.

### Project Scope

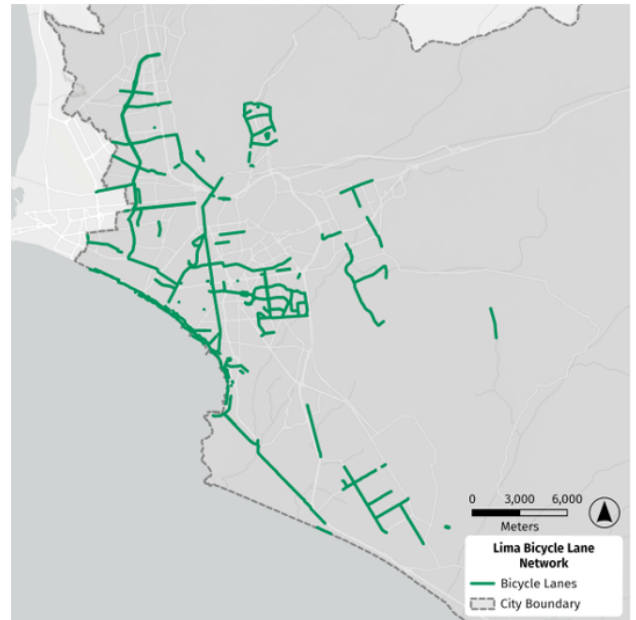


**298 km of cycle lanes**

**98 km** (in development through 2025),

**50 km** (planned from 2025),

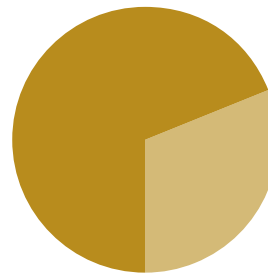
**150 km** (planned from 2028).



### Key Enablers to Success

- ✓ Long-Term Vision
- ✓ Successful Co-Financing
- ✓ Holistic Approach
- ✓ Capacity Building

### Investment and Financing



World Bank Support:

**USD300,000**

grant for updating Bicycle Infrastructure Plan.

German KfW:

**EUR20 million**

for implementing 98 km of cycle lanes (2021).

### Impacts



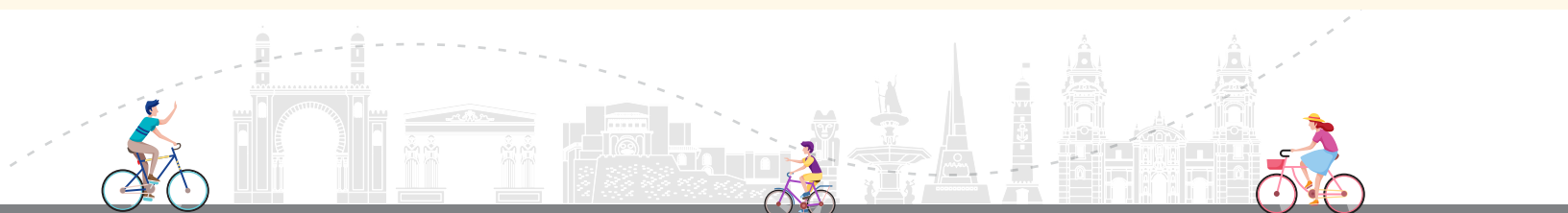
**GHG Reduction:**  
USD2.6 million



**Health improvement:**  
USD104 million



**Road safety improvements:**  
USD997 million

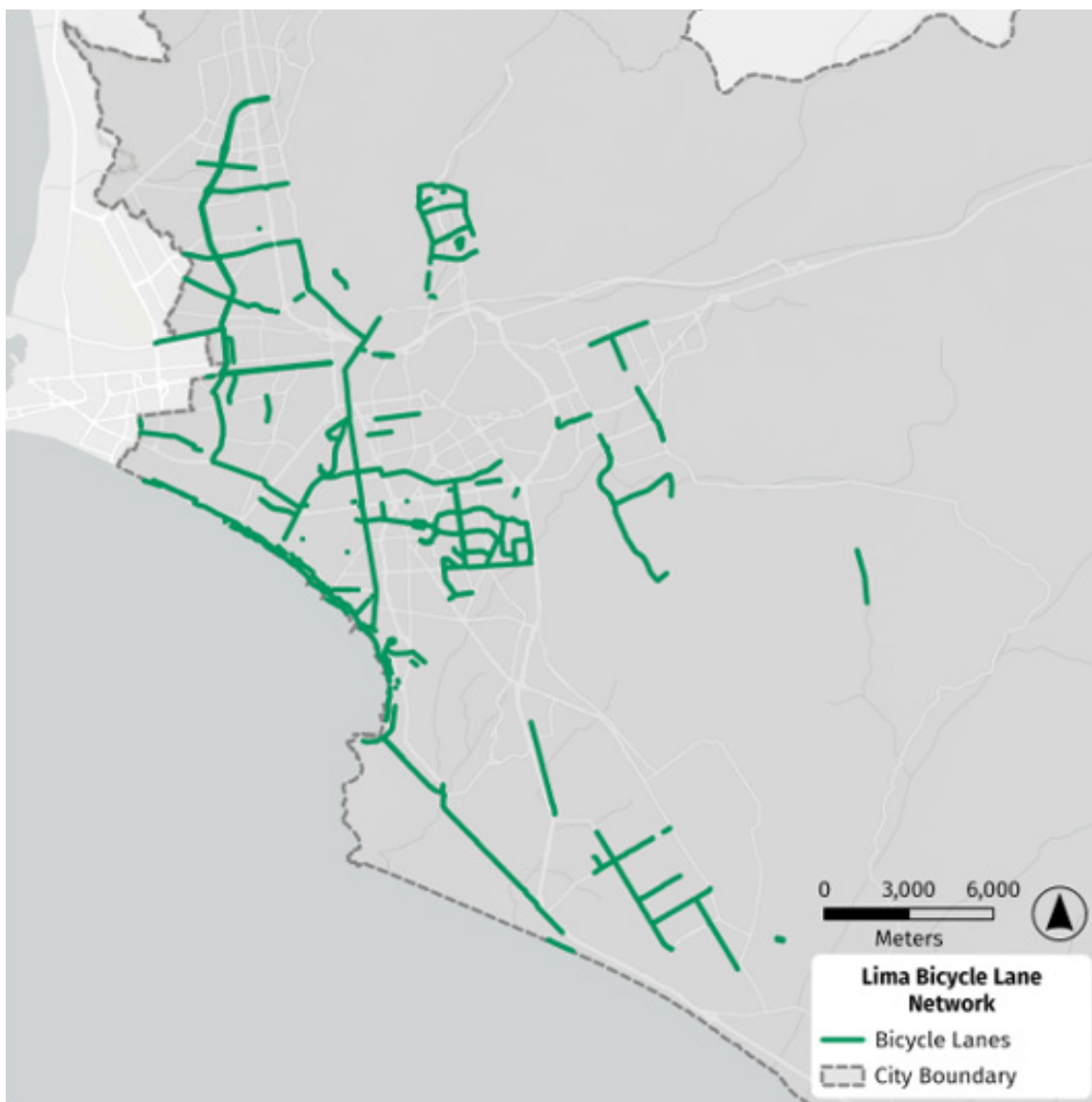




## Lima, Peru: Integrating Cycle Infrastructure with Traffic Management

- **Motivation:** Improve traffic management and road safety
- **Infrastructure included as part of the project:** 298 km of cycle lanes (98km (in development through 2025), 50km (planned starting 2025), 150km (planned starting 2028))
- **Result (for phase 1):** The GHG emission reduction is valued at USD2.6 million, health improvement at USD104 million and road safety improvements at USD997 million

Image 6. Cycling Infrastructure in Lima



Source: Original map created for this publication.



## Background

Peru has been experiencing a higher than average growth in greenhouse gas emissions since 1990 (79% between 1990 and 2018, compared to 13% in the Latin America region), with road transport contributing 92% of transport-related GHG emissions. More than half of Peru's vehicle fleet is concentrated in the Lima Metropolitan Area<sup>50</sup>.

Bicycle infrastructure in Lima has been expanding in recent years (around 300 km of lanes in 2022, up from 200 km in 2019). However, the quality of these lanes is poor and they tend to be disconnected from each other and from public transport. Few cycle lanes serve public transport stations and bicycle parking is not well integrated with public transport, especially with BRT stations. Unsafe intersections are also a barrier to cyclists feeling safe on the street. Bicycle mode share in 2020 was estimated at 0.9% of daily trips.

However, bicycle use nearly doubled during the pandemic, and the Metropolitan Municipality of Lima (MML) responded by implementing 100 km of temporary cycle lanes over the course of two years.

## Scaling Up Active Mobility

From 2003-2011, the World Bank supported the MML to develop a Bicycle Infrastructure Plan and rehabilitate and construct 32 km of bicycle lanes with grant funding from the Global Environment Facility (GEF)<sup>51</sup>. This was part of a larger, USD261.9 million project to deliver a BRT system in Lima.

In 2019, MML sought support to update the Bicycle Infrastructure Plan and design a 1,300 km bicycle network that would be implemented through 2040. This phase was financed with a USD300,000 grant, half of which came from the Mobility and Logistics multi-donor trust fund (MOLO), and the other half from the World Bank.

In 2021, the German KfW development bank provided EUR20 million to support the implementation of 98 km of bicycle lanes through 2025 in line with the Bicycle Infrastructure Plan. Meanwhile, the World Bank is supporting the design of an additional 50 km of bicycle lanes to be implemented during Phase 1 of its Lima Traffic Management and Sustainable Transport project, as well as 150 km of bicycle lanes to be delivered as part of Phase 2.

The Lima Traffic Management and Sustainable Transport project includes a broad set of deliverables that integrates smart traffic management, street redesigns, and capacity building. Project leads anticipate three or four phases of the project which will span the next 10 years, and will aim to address bicycle infrastructure gaps identified in the Bicycle Infrastructure Plan.

<sup>50</sup> Lima Traffic management and Sustainable Transport Project Information Document.

<sup>51</sup> Lima Transport Project Performance Assessment Report.



## Impacts

A social cost benefit analysis (SCBA) was conducted on the updated Bicycle Infrastructure Plan, which includes the full 1,300 km network of cycle lanes. Unlike a traditional cost benefit analysis, which may not quantify social benefits like health outcomes, the SCBA aimed to provide a more holistic forecast for the impacts of the Bicycle Infrastructure Plan.

It was conducted using a “what if” approach. It estimated that the bicycle lane network would generate an increase in bicycle mode share from the baseline (0.9%) to 15% by 2050, and quantified benefits based on that increase. The value of GHG emissions reductions and improved air quality as a result of the investment in Lima’s bicycle lane network was estimated at 2.3 billion Peruvian sol (USD621 million), more than three times the 740.4 million sol (USD199 million) cost of building the network<sup>52</sup>. The SCBA generated a 19 to 1 benefit to cost ratio, wherein the city saves 19 Peruvian sol for every 1 sol invested in the Bicycle Infrastructure Plan.

A more targeted economic analysis was conducted for Phase 1 of the World Bank-financed Lima Traffic Management and Sustainable Transport project, which valued travel time savings, road safety benefits, GHG emissions reductions, public health benefits, and urban environment improvements. Phase 1 was estimated to have an IRR of 145.3%, with travel time and road safety improvements accounting for the largest share of benefits<sup>53</sup>.

## Discussion and Takeaways

The World Bank has been financing sustainable transport projects in Lima for almost two decades. An inefficient, aging public transportation system triggered the Bank’s investment in bus rapid transit and metro projects in the early 2000’s, and active mobility had been part of the conversation around maximizing the benefits of those projects. Specifically, the GEF-financed bicycle lanes (and supplemental components that supported public transport use and strengthening sustainable transport planning and environmental institutions) sought to catalyze a shift from private cars to low-carbon transport, and a resulting reduction in greenhouse gas emissions<sup>54</sup>.

Building off of its involvement in the development of the original Bicycle Infrastructure Plan in 2010, the World Bank had a stake in the success of Lima’s bicycle lane network. Updating the Plan in 2020 with a relatively small grant ultimately catalyzed co-financing from KfW, as well as integration of cycling interventions into MML’s eventual request for support for larger-scale improvements to traffic management and road safety. The SCBA conducted on the updated Plan helped to communicate the benefits of sustained investment in cycle infrastructure in Lima, helping to reduce risk on the part of the MML and the World Bank.

While the current project in Lima focuses primarily on the traffic management elements, about one-third of the Phase 1 funding is supporting the implementation of safe streets and intersections which includes cycle and pedestrian infrastructure. Financing for capacity building, importantly, will support the investment in hard infrastructure, ensuring design and implementation standards and a culture of safety for people cycling and walking are institutionalized.

<sup>52</sup> [Social Cost Benefit Analysis Lima Cycle Strategy](#).

<sup>53</sup> [Lima Traffic Management and Sustainable Transport: Annex 4](#).

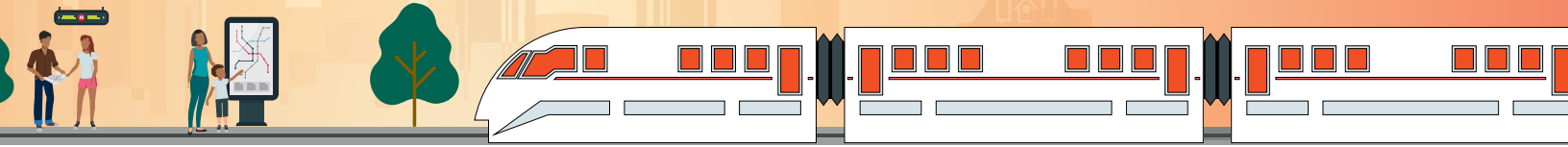
<sup>54</sup> [Lima Transport Project Implementation Completion and Results Report](#).



# Dar es Salaam, Tanzania

## Integrating walking and Cycle Infrastructure with BRT Investments

Enhancing urban mobility in Dar es Salaam to boost metro ridership and reduce emissions.



### Entry Point

The entry point for development bank-financed cycle infrastructure in Dar es Salaam was the BRT. Delivering and updating the BRT infrastructure is the primary focus. The inclusion of bicycle infrastructure in Phase 1 (and, potentially, future phases) was seen as an opportunity to support feeder services in bringing potential riders to the main BRT corridors.

### Project Scope:



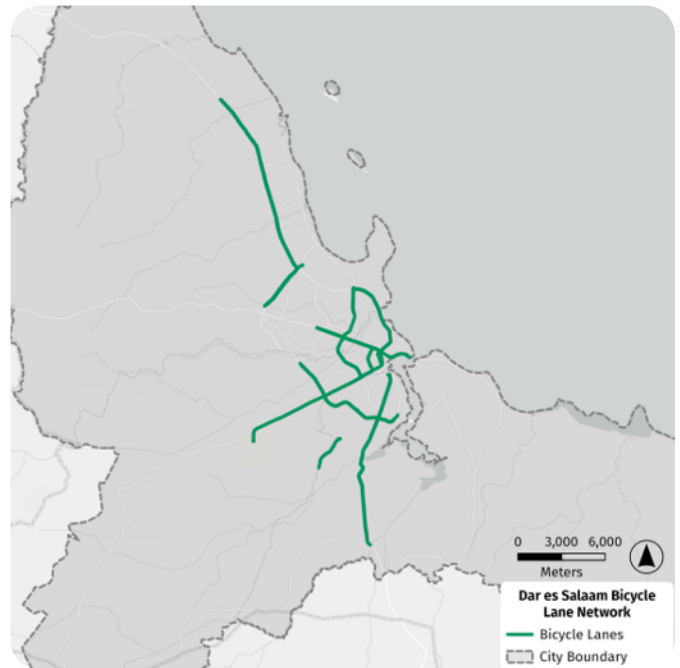
**19.3** km of dedicated cycle lanes



Pedestrian enhancements along the BRT corridor



Bicycle parking at major terminals



### Impacts



Phase 2 and 3 show an estimated Internal Rate of Return (IRR) exceeding 30%



Cost savings in travel time, traffic crashes, emissions, and noise reduction

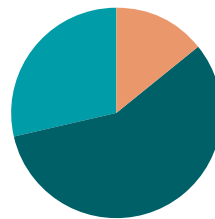
### Key Enablers To Success

- ✓ Development Approach
- ✓ Opportunities

### Investment and Financing

**Phase 1:** **USD300 million**

- the World Bank



**EUR5 million**

- the Nordic Development Fund

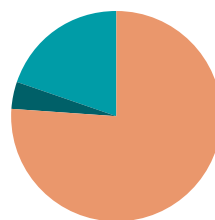
**USD25 million**

- Tanzanian government

**Phase 2:**

**USD97.42 million loan**

- African Development Bank



**USD44.29 million**

from the Africa Growing Together Fund

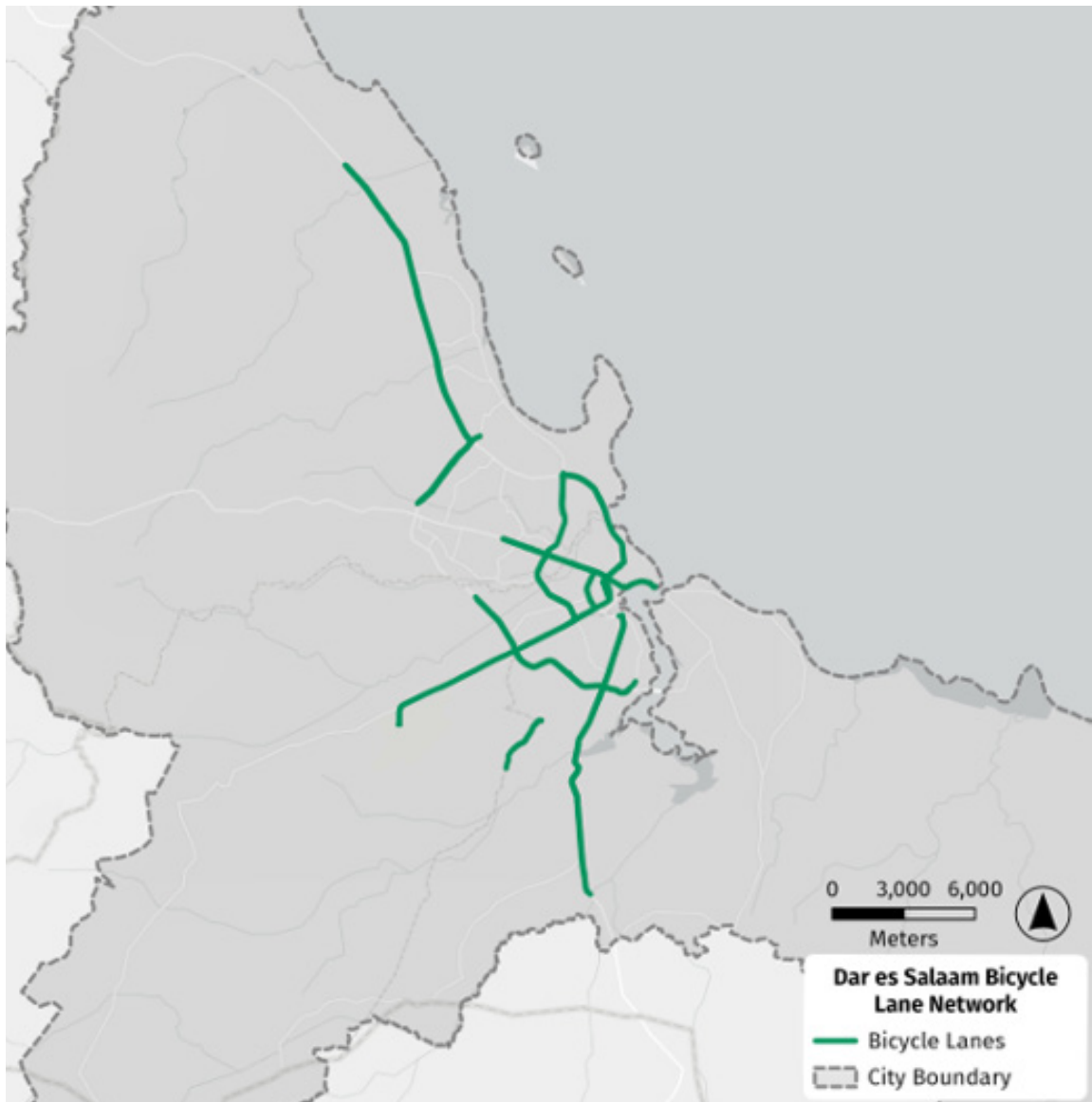
**USD17.6 million**

from the Tanzanian Government

## Dar es Salaam, Tanzania: Integrating walking and Cycle Infrastructure with BRT Investments

- **Motivation:** Support access to and ridership of BRT
- **Infrastructure included as part of the project:** 19.3 km of cycle lanes. Also included pedestrian infrastructure along the BRT corridor and bicycle parking at major terminals.
- **Result:** Internal Rate of Return for Phase 2 and 3 (*ex-ante*) is more than 30%

**Image 7. Cycling Infrastructure in Dar es Salaam**



Source: Original map created for this publication.



## Background

Dar es Salaam is a rapidly growing and urbanizing city. Its population is estimated to more than double from 5.7 million to 13 million people in 15 years, making it a mega city by 2040. An estimated 11% of residents own cars and 8% own a motorized two-wheeler. Car ownership has been increasing over the past decade. However, walking is a primary mode of transport to work and school, accounting for 39% of daily trips. Cycling accounts for a very small share of trips, approximately 0.5%, due to the high cost of bicycles and a lack of dedicated cycle infrastructure<sup>55</sup>.

Several national level economic development plans, such as Vision 2025, the National Strategy for Growth and Reduction of Poverty (MKUKUTA), and three Five-Year Development Plans, have provided broad guidance for how cities in Tanzania can grow equitably and sustainably. These plans do not, however, provide details for the implementation of sustainable transportation.

Several local plans for Dar es Salaam's transport sector development seek to create and maintain a green and accessible transportation system for the city. The city's Transport Master Plan lays out six lines of bus rapid transit (BRT) to be implemented as a way to improve access to opportunities and reduce travel times. The Plan also aims to promote active mobility in Dar es Salaam by providing walkways and cycle routes, though it does not put forth a network or kilometer targets<sup>56</sup>.

## Scaling up Active Mobility

Planning for the multi-phase BRT project in Dar es Salaam began in the early 2000s. Phase 1 of the BRT, which opened in 2016, included 21 km and 27 stations along a major corridor, which cut travel times by more than half. It was financed through a USD300 million loan from the World Bank, EUR5 million from the Nordic Development Fund, and USD25 million from the government of Tanzania. Support from the Nordic Development Fund went toward a 2015 planning study that aimed to address sprawl and informal growth with an eye toward climate change, proposing transit-oriented development and other station area design guidance for the BRT. It also aimed to strengthen the operations and maintenance capacity of local transport and environmental authorities to address drainage and other road maintenance issues. Phase 1 included cycle infrastructure along the BRT corridor. The Dar es Salaam Metropolitan Development Project supported upgrades in low-income communities including some footpaths.

Phase 2 of the project included 20 km of BRT along another major corridor, along with traffic management interventions and capacity building for BRT operators. Phase 2 also included bicycle and pedestrian infrastructure along the BRT corridor, as well as bicycle parking at major terminals. Phase 2 was financed through a USD97.42 million loan from the African Development Bank (AfDB) and a USD44.29 million loan from the Africa Growing Together Fund, a fund co-financed by AfDB and the People's Bank of China. An additional USD17.6 million was provided by the government of Tanzania.

<sup>55</sup> Dar es Salaam City Master Plan 2016-2036.

<sup>56</sup> Dar es Salaam City Master Plan 2016-2036.



Phases 3 through 6 will deliver the final corridors of the BRT, as well as support for operations, fare collection, and road safety infrastructure. Phases 3 and 4 are financed by the World Bank and government of Tanzania, Phase 5 is financed by the French Development Bank (AFD), and the government is seeking financing from potential investors for Phase 6. Currently, ITDP is working with DART and the Tanzania National Roads Agency (TANROADS) to include cycle infrastructure along the BRT corridors, specifically for the planned BRT projects in Phases 3, 4, and 5.

## Impacts

An economic analysis of Phase 2 of the project conducted as part of the approval process indicates that providing financing to build the BRT will improve the lives of residents — and especially low-income residents — in Dar es Salaam. Cost savings were estimated for different components of the project: travel time reductions, traffic crash reductions, emissions reductions, and noise reductions. An internal rate of return for all of the components of Phase 2 was estimated at 31.6%<sup>57</sup>. A similar evaluation was conducted for Phase 3, which had a similar estimated IRR of 32.4%<sup>58</sup>.

## Discussion and Key Takeaway

The entry point for development bank-financed cycle infrastructure in Dar es Salaam was the BRT. Delivering and updating the BRT infrastructure is the primary focus. The inclusion of bicycle infrastructure in Phase 1 (and, potentially, future phases) was seen as an opportunity to support feeder services in bringing potential riders to the main BRT corridors, however existing cycle lanes run along the BRT corridors and do not extend out into surrounding neighborhoods<sup>59</sup>. In addition to cycle lanes, bicycle parking was provided at the Mbagala Terminal on the south side of the city to encourage first-last mile connections to this station. According to a service plan update prepared in 2019, bicycle infrastructure “could be provided as part of the detailed designs” for future phases whose designs are yet to be finalized.

<sup>57</sup> Economic Cost Benefit Analysis Report - Phase 2.

<sup>58</sup> Economic Cost Benefit Analysis Report - Phase 3.

<sup>59</sup> Notably, due to ongoing construction on the BRT corridors, some prior cycle tracks along the Phase 3 corridor have been removed.



# Addis Ababa, Ethiopia

## Developing a National Non-Motorized Transport Strategy



### Entry Point

Priority has shifted since the national NMT Strategy was adopted in 2020, and the national government has defined implementation targets for a range of cycle and pedestrian infrastructure for all secondary cities and for cities with populations over 50,000.

### Project Scope:



60 km of cycle lanes and pedestrian walkways



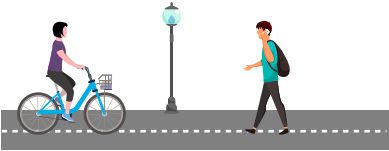
Traffic signals for 250 intersections



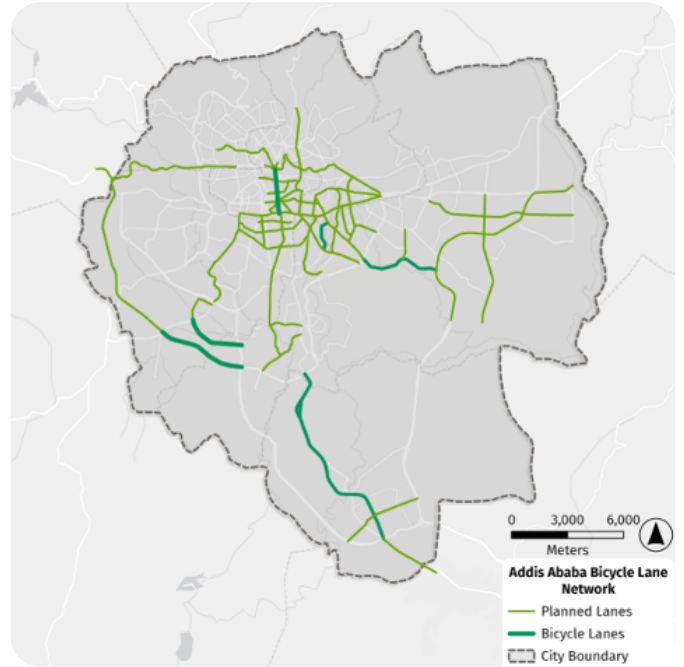
Improved pedestrian conditions



Modernized state-owned bus enterprise



Five corridors with dedicated sidewalks and bicycle lanes



### Investment and Financing



World Bank Financing



National Funding Criteria



Local Contributions

### Impacts



10 tCO<sub>2</sub>e reduction in GHG emissions



80% reduction in pedestrian and cyclist fatalities



WHO ambient air quality norms met 95% of days/year

### Key Enablers To Success



Strategic Integration



Philanthropic Support



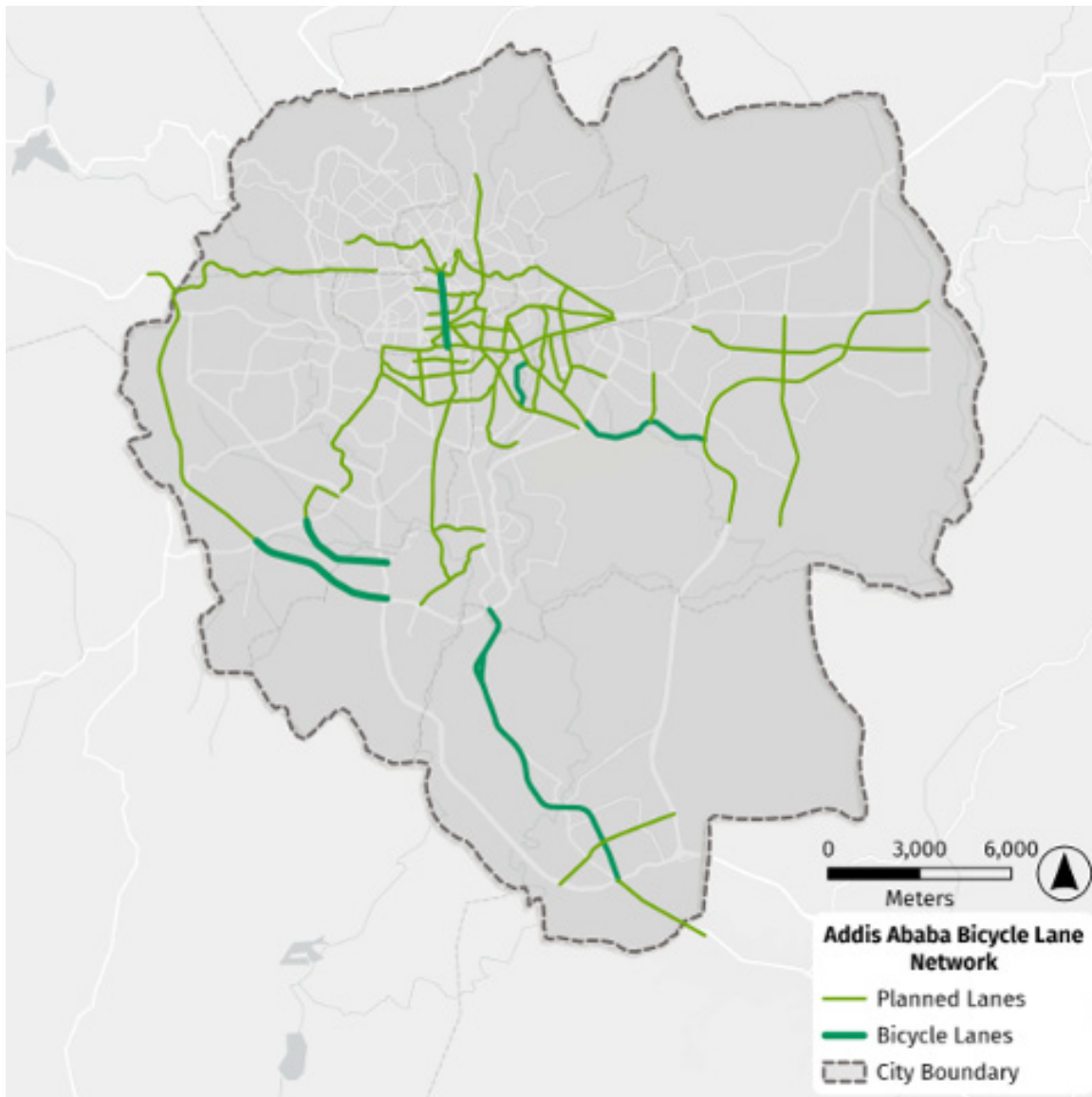
Institutionalization



## Addis Ababa, Ethiopia: Developing a National Non-Motorized Transport Strategy

- **Motivation:** Align with Non-Motorized Transport (NMT) Strategies
- **Infrastructure included as part of the project: 60 km of cycle lanes.** Also includes pedestrian infrastructure such as walkways.
- **Result:** Projected impacts include 80% fewer pedestrian and cyclist fatalities, 10 tCO<sub>2</sub>e reduction in GHG emissions and WHO ambient air quality norms met 95% of days/year

**Image 8. Cycling Infrastructure in Addis Ababa**



Source: Original map created for this publication.



## Background

People living in Addis Ababa and most other cities in Ethiopia rely heavily on walking and cycling as primary means of transport. In Addis Ababa, walking accounts for 54% of trips, followed by public transport at 31%; only 15% of trips are made by private car<sup>60</sup>. In many secondary cities, walking and cycling have been dominant transport modes—in Bahir Dar, walking accounts for 24% of trips, cycling accounts for 3%, and public transport accounts for 61%, while private vehicles (cars and motorcycles) account for 12% of trips<sup>61</sup>. However, most roads are not designed for safe, comfortable trips made by foot or bicycle. Many streets, especially in peripheral neighborhoods, do not have sufficient sidewalks, pedestrian crossings, or bicycle lanes. Streets are instead designed to support the efficient movement of vehicles, often at the expense of the majority of people walking and cycling. This has resulted in declining rates of cycling (shifting to motorcycles and cars) and high rates of traffic crashes. Pedestrian fatalities account for 37% of all deaths in Ethiopia<sup>62</sup>.

## Scaling Up Active Mobility

In 2016, the World Bank financed the Transport Systems Improvement Project (TRANSIP) for Ethiopia, which aims to improve mobility along key corridors in Addis Ababa, and improve road safety compliance systems throughout the country. This includes

- Expanding traffic signals for 250 intersections and improving conditions for pedestrians in Addis Ababa
- Modernizing a state-owned bus enterprise
- Building the capacity of urban transport agencies to implement and enforce safe driving standards

TRANSIP aims to address critical road safety issues through a combination of safety improvements to pedestrian infrastructure and strengthening the institutions that permit and enforce driving. The project will also deliver five corridors using a Complete Streets approach, with dedicated sidewalks and bicycle lanes. The World Bank's Global Road Safety Facility (GRSF) supported the development of a Sidewalk Safety and Improvement Study for Addis Ababa which evaluated sidewalk safety and developed a Sidewalk Design and Maintenance Guideline<sup>63</sup>.

In 2020, Ethiopia's Ministry of Transport and Logistics launched a 10-year national Non-Motorized Transport (NMT) Strategy aimed at institutionalizing a more equitable approach to transport that prioritizes the modes used most often by Ethiopians. This is in the context of the government's goal to reduce the country's GHG emissions by 64% by 2030. Investment in active mobility, especially integrated with public transport, is a key strategy for achieving this goal<sup>64</sup>.

<sup>60</sup> Addis Ababa, Ethiopia: [Enhancing Urban Resilience](#).

<sup>61</sup> Bahir Dar City Administration & UN Habitat. (2020). Bahir Dar city Master plan.

<sup>62</sup> [Ethiopia NMT Strategy](#).

<sup>63</sup> [Addis Ababa Sidewalk Design and Maintenance Guidelines](#).

<sup>64</sup> [Ethiopia NMT Strategy](#).



In line with the NMT Strategy, the national government will only provide funding for urban roads projects that include adequate infrastructure for cyclists, pedestrians, and public transport users. It will not fund projects that expand vehicle parking. Local authorities must contribute at least 33% of their transport budgets to NMT infrastructure and no more than 33% of their transport budgets to private vehicle infrastructure to be eligible for national funding<sup>65</sup>.

The Ministry of Transport and Logistics has sought external funding to support NMT Strategy implementation, especially of cycle lanes in secondary cities. For example, in Bahir Dar, the Ministry of Transport and Logistics, together with the Bahir Dar City Administration, has prepared a design for the construction of a 2.5 km cycle track and requested funding from AfDB, which is pending. The World Bank, UN-Habitat, and the Institute for Transportation and Development Policy (ITDP) have provided technical and financial assistance for the organization of public events like car-free days meant to raise awareness and support for cycling and walking.

Addis Ababa developed its NMT Strategy in 2018, which calls for the implementation of 60 km of cycle infrastructure in the city by 2022, and 200 km by 2028. To that end, and funded by the Addis Ababa City Road Authority (AACRA), the city has developed a 4.5 km cycle track on the Hachalu Hundessa (old Transafrica Highway) corridor, connecting the Haile garment factory and Jemo secondary city center.

Additionally, the city constructed a bi-directional 3 km cycle track from Addis Ababa City Hall to Meskel Square, featuring wider furnished walkways on both sides. The city is also currently constructing cycle tracks on additional corridors, including 4 km from Bole Airport-Goro road and 11 km from Kality-Tulu Dimtu. The Addis Ababa NMT Strategy also aims to create a bikeshare program that is integrated with the city's public transportation system<sup>66</sup>. These actions support 10-year targets including maintaining (or increasing) NMT mode share at 60%, and ensuring women constitute 50% of cyclists.

## Discussion and Takeaway

The TRANSIP project served as an entry point for the World Bank at a time when active mobility was not the priority for Ethiopia. Active mobility is often seen by transport ministries as a local issue, not a national one. Instead, given that four out of five road traffic deaths in Ethiopia are pedestrians, the project focused heavily on road safety, and was designed to combine targeted pedestrian infrastructure improvements with developing a more formal system for licensing drivers and enforcing road traffic laws.

However, priority has shifted since the national NMT Strategy was adopted in 2020, and the national government, as well as the Addis Ababa local government, are now firmly committed to delivering comprehensive cycle and pedestrian infrastructure networks at scale. Both the national and local governments link these networks to maintaining (and increasing) the share of trips made by cycling, walking, and public transport, reducing vehicle

<sup>65</sup> Ethiopia NMT Strategy.

<sup>66</sup> Addis Ababa Non-Motorised Transport Strategy Implementation Plan 2019-2021.



kilometers traveled, improving road safety, and improving air quality. Both the national government and Addis Ababa city government have formed NMT departments within their office structures to oversee the implementation of NMT initiatives. At the national level, this unit operates under the Ministry of Transport and Logistics, while at the city level, it operates under the Addis Ababa Transport Bureau. This institutionalization of cycling as a transport mode also laid the foundation for Addis Ababa to be one of 10 cities selected to receive philanthropic funding for cycle infrastructure implementation through the Bloomberg Initiative for Cycling Infrastructure (BICI)<sup>67</sup>.

Furthermore, the national government has defined implementation targets for a range of cycle and pedestrian infrastructure for all secondary cities and for cities with populations over 50,000. This type of multi-level, multi-year planning lays an important foundation for sustained financing in active mobility projects at scale.

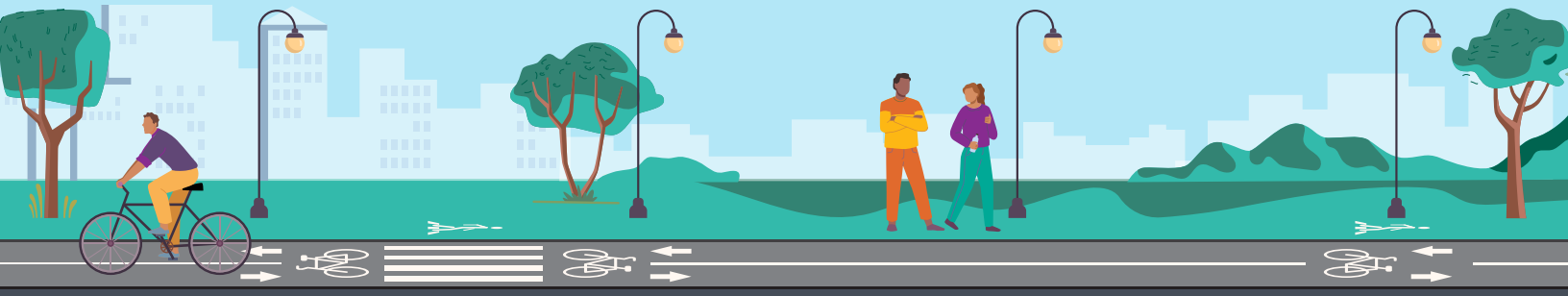
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<sup>67</sup> Addis Ababa named winner of the Bloomberg Initiative for Cycling Infrastructure.



# Buenos Aires, Argentina

## City-Level Investment in a Cycle Lane Network

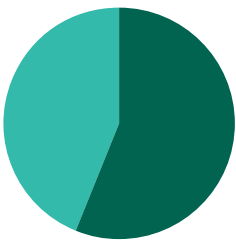


### Project Scope:



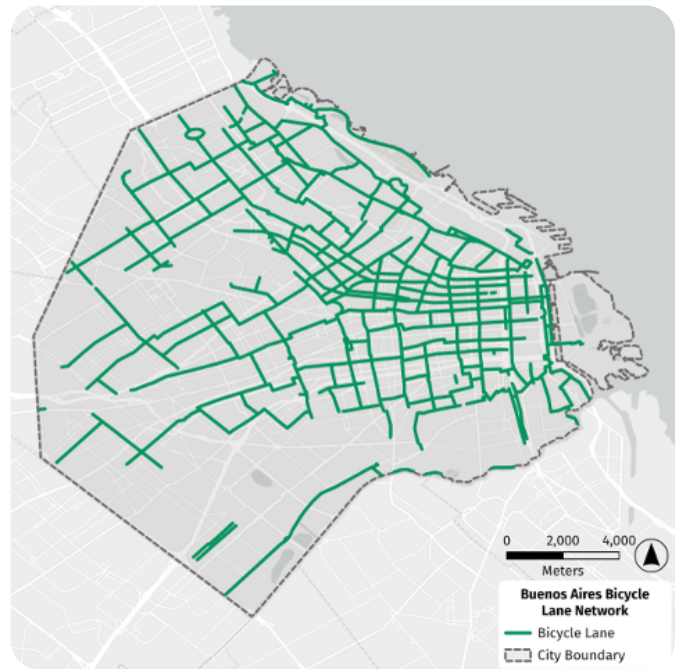
**307 km**  
of protected bike lanes

### Investment and Financing



**USD64 million**  
City Funding

**USD50 million**  
Loan from the World Bank



### Impacts



Greenhouse gas emissions reductions valued at ARS 5.6 million



Bicycle mode share increased from 0.4% in 2007 to 6% in 2023



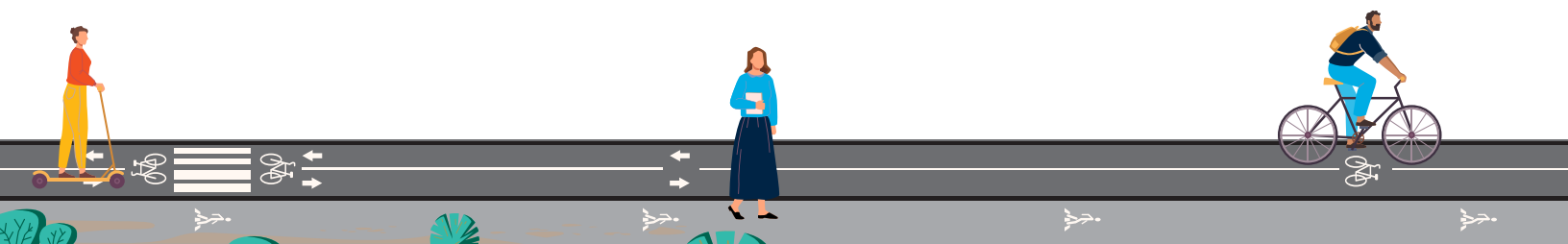
**ARS 192.9 million** benefits with an Internal Rate of Return of 113%

### Key Enablers To Success

✓ Mode Share

✓ Sustainability

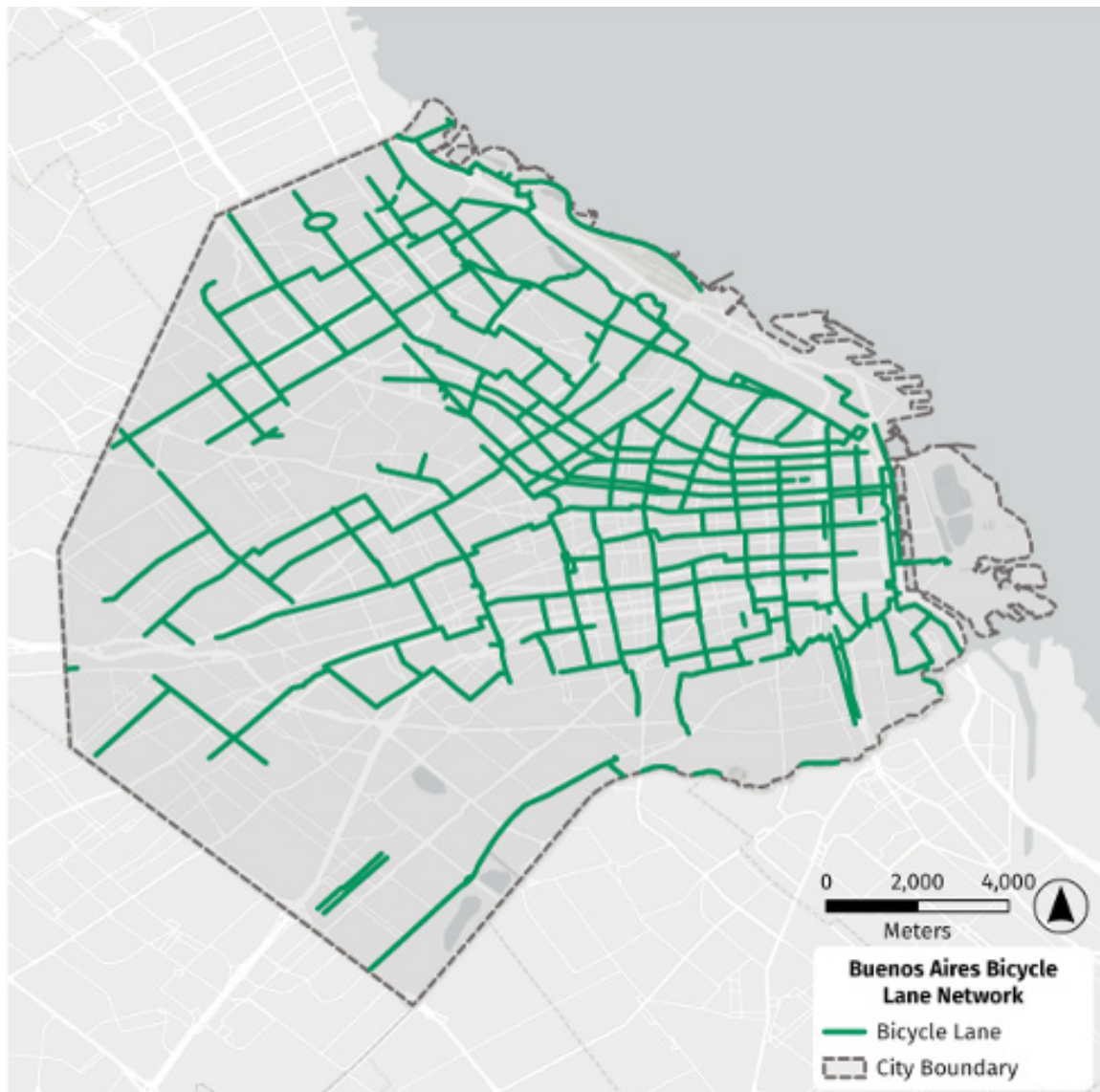
✓ Government Champions



## Buenos Aires, Argentina: City-Level Investment in a Cycle Lane Network

- **Motivation:** Align with Sustainable Mobility and Climate Action Plans
- **Infrastructure included as part of the project:** 307 km of cycle lanes.
- **Result: (ex-post analysis)** ARS 192.9 million in benefits generated by the implementation of the cycle lanes and Internal Rate of Return of 113%. The value of greenhouse gas emissions reductions was estimated at ARS 5.6 million, approximately one-third of the entire cost of building the cycle lanes<sup>68</sup>.

Image 9. Cycling Infrastructure in Buenos Aires



Source: Original map created for this publication.

<sup>68</sup> [Methodological Framework for the Social Evaluation of Active Mobility and Road Safety in Buenos Aires](#)



## Background

The city of Buenos Aires is home to about 3 million residents. However, the surrounding metropolitan area has a population close to 15 million, approximately one-third of the population of all of Argentina. In the early 2010's in the city, the majority of trips (78%) were made using public transportation<sup>69</sup>. But by 2019, this share had dropped to around 50%, and in 2023, it was 39%<sup>70 71</sup>. In 2007, at the start of the city's efforts to prioritize cycling, trips by bicycle made up 0.4% of trips.

Since 2009, sustainable transportation in Buenos Aires has been delivered in line with the city's Sustainable Mobility Plan, and eventually its Climate Action Plan adopted in 2015. The former includes several interventions to prioritize active mobility and public transportation. For example, the plan calls for the pedestrianization of more than 100 blocks of the city's Microcentro area, creation of a public bikeshare system, and a 300 km bicycle lane network alongside traffic calming and road safety interventions.

The Climate Action Plan sets goals for the city to reduce its emissions by 50% by 2030 and achieve carbon neutrality by 2050. Transport is a key strategy to deliver the city's climate goals, with actions focused on reducing and providing alternatives to vehicle trips as well as transitioning to clean vehicles and fuels. Use of bicycles as a means of transportation is a major pillar of the Climate Action Plan, with a target of one million cycle trips in 2023<sup>72</sup>.

## Scaling up Active Mobility

In line with the Sustainable Mobility Plan, from 2009 to 2013, Buenos Aires implemented 110 km of bicycle lanes, and reached a 250 km network by 2020. The city of Buenos Aires funded the majority of the cycle lane network implementation, which cost approximately USD64 million between 2010 and 2020<sup>73</sup>. In addition to city funding, a portion of a 2017 USD50 million loan from the World Bank's International Finance Corporation (IFC) — primarily meant for transport infrastructure upgrades — was allocated to build 34 km of bicycle lanes along secondary roads as part of the city's existing cycle lane network<sup>74</sup>.

The city also invested in complementary initiatives to support and expand access to cycling. A bikeshare program launched in 2010 and was expanded to 3,000 bicycles and 200 stations in 2015. While the city initially financed and managed the public bikeshare system, which is free for residents to use, a portion of the 2017 IFC loan that financed the bicycle lanes was allocated to improve and modernize the functionality of the bikeshare system<sup>75</sup>. At that time, the World Bank supported the City of Buenos Aires to examine the available financing and funding options for the bikeshare system.

<sup>69</sup> [How to drive a modal shift from private vehicles to public transport, walking and cycling.](#)

<sup>70</sup> [Cycle vision: Buenos Aires plots a bigger bicycle future.](#)

<sup>71</sup> [Participación Modal de los Viajes de la Ciudad de Buenos Aires.](#)

<sup>72</sup> [Plan de Acción Climática 2050.](#)

<sup>73</sup> Data from the City of Buenos Aires.

<sup>74</sup> <https://disclosures.ifc.org/project-detail/ESRS/38533/city-of-ba>.

<sup>75</sup> <https://disclosures.ifc.org/project-detail/ESRS/38533/city-of-ba>.



In 2019, the city brought in Tembici, a private bikeshare operator that runs several major systems in Latin America, to operate the bikeshare system with support from other private sector partners Brazilian bank Itaú and Mastercard<sup>76</sup>. Brazilian bank Itaú, in partnership with the Ministry of Transportation, also sponsors the Soltate program, which offers weekend learn to ride classes for children<sup>77</sup>. The city has also been working to install bicycle parking, especially near public buildings and transit stations.

In response to travel restrictions brought by the COVID-19 pandemic in 2020, Buenos Aires built two new protected cycle lanes totaling 17 km on Córdoba and Corrientes Avenues, two major east-west corridors which serve several bus lines and also run parallel with two of the city's metro lines<sup>78</sup>. These lanes were funded by the city, costing approximately ARS 18 million (USD51,432) to implement<sup>79</sup>.

The city of Buenos Aires has been consistently pursuing cycle infrastructure and supportive policies for nearly two decades. Altogether, investments in the cycle lane network and complementary measures to support cycling, like bikeshare and bicycle parking, have led to an increase in bicycle mode share from 0.4% of trips in 2007 to 2.5% in 2015<sup>80</sup>. Bicycle mode share peaked at 10% during the pandemic, and demand for private vehicles sharply declined. As of 2023, the city has 307 km of protected bicycle lanes, with an additional 30 km planned through 2025, and bicycle mode share has stabilized around 6% of trips.

Notably, the existence of the Sustainable Mobility Plan (and the plans for a cycle lane network it established) laid the foundation for development bank financing of bicycle lanes when the opportunity arose. In addition to infrastructure financing, the city of Buenos Aires also sought technical support from the World Bank to conduct several analytical efforts intended to provide guidance and evidence that would improve future projects. Starting in 2014, the World Bank collaborated with the city and the Institute for Transportation and Development Policy to prepare guidelines for implementing Complete Streets in Buenos Aires<sup>81</sup>. Then, in 2018, the World Bank supported analysis of the impacts of reduced speed limits and other traffic calming measures in neighborhoods where cycle lanes were present. Finally, in 2021, the city was interested in conducting a study to evaluate the economic benefits of the Córdoba and Corrientes Avenue cycle lanes, with support from the World Bank's Mobility and Logistics Multi-Donor Trust Fund (MOLO).

## Impacts

The ex-post analysis found that every dollar invested in the cycle lanes generated 5.7 dollars in benefits, and the project yielded an internal rate of return of 113%. Of the total ARS 192.9 million in benefits generated by the implementation of the cycle lanes, health benefits accounted for 60%, time savings accounted for 28%, and road safety and greenhouse

<sup>76</sup> [Paying for bike-sharing systems.](#)

<sup>77</sup> [¡Soltate, dejá tus rueditas!](#)

<sup>78</sup> [Cycle vision: Buenos Aires plots a bigger bicycle future.](#)

<sup>79</sup> [Methodological Framework for the Social Evaluation of Active Mobility and Road Safety in Buenos Aires.](#)

<sup>80</sup> [Buenos Aires – Toward Comprehensive Development and Sustainable Mobility.](#)

<sup>81</sup> [https://itdpdotorg.wpengine.com/wp-content/uploads/2016/02/ITDP\\_Guia\\_de\\_diseno\\_de\\_calles.pdf](https://itdpdotorg.wpengine.com/wp-content/uploads/2016/02/ITDP_Guia_de_diseno_de_calles.pdf)





gas emissions reduction benefits accounted for 9% and 3% respectively<sup>82</sup>. The value of greenhouse gas emissions reductions was estimated at ARS 5.6 million, approximately one-third of the entire cost of building the cycle lanes<sup>83</sup>.

## Discussion and Key Takeaway

There have been several champions in government over the past 20 years who have been supportive of moving cycle infrastructure projects forward, including the current and former mayors, and the office of the Secretary of Transportation and Public Works. While the city has made significant progress on cycling, the much larger metropolitan area has not kept pace. A metropolitan area transport agency was created to coordinate transportation projects and planning in 2014 when there was political alignment between the city, provincial, and national governments. However, this agency has since lost much of its authority as the different levels of government are no longer aligned, and the agency remains understaffed. Coordination is needed at the metropolitan area level to expand access to and use of cycle infrastructure beyond the city of Buenos Aires.

In September 2023, the City of Buenos Aires released a new Sustainable Mobility Plan, which sets updated goals through 2030. It positions the bicycle as a primary transport mode, and calls for a 10% increase in trips taken using active modes. The Plan specifies actions to achieve this goal including expanding the cycle network into the surrounding metropolitan area, and better integrating cycling with public transportation for medium- and long-distance trips<sup>84</sup>.

### Image 10. Bicycle Taxis in Kabale, Uganda



Source: <https://www.flickr.com/photos/adamcohn/6311100621/in/album-72157627924460>.

<sup>82</sup> Methodological Framework for the Social Evaluation of Active Mobility and Road Safety in Buenos Aires

<sup>83</sup> Methodological Framework for the Social Evaluation of Active Mobility and Road Safety in Buenos Aires

<sup>84</sup> Plan movilidad sustentable 2030.



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