

Lessons Learned from Jakarta's Journey to Integrated and Resilient Transport Systems



Message from the Governor

It is indeed a great honor for the city of Jakarta to be the recipient of the 2021 Sustainable Transport Award. This award recognizes Jakarta's endeavors toward establishing sustainable mobility and our eagerness for rapid transformation and comes on the heels of an honorable mention last year.

Since 2017, Jakarta has put pedestrians, cyclists, and transit users at the top of the transport hierarchy. We shifted from a car-oriented city to one that is transit-oriented, prioritizing mass transit and active mobility over private motorized vehicles.

Although the Covid-19 pandemic trampled over our everyday lives, it has also provided us with an opportunity to rethink and redesign our approach toward Jakarta's urban mobility.

We are committed to not slowing down. On the contrary, we have new confidence that Jakarta can change for the better—from Jakarta's first integrated station to its first protected bike lane. The change comes from the cooperation of society, academia, private sectors, and the government. Jakarta, the city of collaboration, is both a tagline and an embodiment of our mindset and efforts. Through this document, please allow me to present a glimpse at our collaborative works.

We believe that through collaboration, we can bring about much of the necessary sustainable improvement to better our home, our city, this planet. Let's learn from each other and let's move forward together; for us, for the future, for our world, and for the children of our children.

Anies Rasyid Baswedan

The Governor of DKI Jakarta



Jakarta's transport integration timeline and major achievements:



2004
TransJakarta,
first BRT in South
East Asia begins
operation



2018
Jak Lingko
integrated fare
system established



2018
Integration of
minibus service
(Mikrotrans) with
TransJakarta



2019
Phase 1 of
MRT and LRT
Jakarta open



2019
Jakarta Cycling Friendly
City workshop takes place,
resulting in stakeholder
consensus on cycling
priorities and action plans
to implement them



2019
63 km of pilot
cycle lanes
open



2020
First physical integration
scheme between MRT,
Commuter Rail and
TransJakarta BRT carried
out at four stations



2020
11 km of protected
pop-up bike lanes
open throughout
the city



2020
Pilot dockless
bike sharing
system begins
operation



2021
Intermodal physical
integration
carried out at five
additional stations



2021
11 km of
pop-up bike
lanes turn
permanent



2021
Low Emission
Zone pilot
implemented in
Kota Tua

Lessons Learned from Jakarta's Journey to Integrated and Resilient Transport Systems

1. Jakarta's sustainable transport journey



Transjakarta BRT.
Source: ITDP

Vision and transformative processes

Jakarta, the largest city in Indonesia as well as its capital, has been facing numerous urban transport challenges, such as air pollution, traffic congestion, and a large number of gas-powered vehicles. In August 2019, Jakarta was recorded as having the worst air pollution in the world, due in great part to its transport. The city commonly sees traffic jams flooded by private cars and motorcycles, especially during rush hours, costing citizens precious time and further driving up fossil fuel consumption.

In the last few years, the city of Jakarta has taken concrete steps to change that, demonstrating its strong leadership and political will. At the local level, this has led to a renewed push to improve air quality. For example, the Governor's Instruction No. 66/2019 on Air Quality Management mandated city agencies to enact air quality improvement measures. This included the Jakarta Transport Agency, which is now

responsible for curbing demand for driving and adopting low-emission public transport fleets. This Instruction comes from the Governor's urban regeneration vision to shift fundamental policies from car-oriented development to transit-oriented development.

Political will has been complemented by concrete actions. In the past few years, the Government of Jakarta has made significant investments in public transportation networks; for instance, increasing public transport coverage by 400% between 2015–2019, establishing the first 16 km of Mass Rapid Transit (MRT) and implementing the first phase of Light Rail Transit (LRT). Along with public transport improvements, the Government has implemented many progressive initiatives to promote active first-last mile mobility. These improvements are aligned with the Governor's vision, which prioritizes non-motorized transport and public transport users.

Accelerating sustainable transport development during COVID-19

Even during the COVID-19 pandemic, sustainable transport development in Jakarta continued. In addition to ensuring the reliability of public transport through new health and safety protocols, the Governor issued a regulation that prioritized cyclists and pedestrians on roads. It emphasized providing cycling infrastructure and facilities in response to the growing number of cyclists in Jakarta. The city saw a tenfold (1000%) increase in cyclists in one central area of the city, and a 340% increase overall.

The city also continued to improve transport infrastructure. Pop-up bike lanes appeared on the most central streets in Jakarta and the city developed its dockless bike-sharing program, station integration, and Mobility-as-a-Service (Jak Lingko Apps). It revamped stations, created temporary open streets and began allowing passengers to board MRT trains with their bikes. A designated pop-up bike lane has been upgraded into Jakarta's first 11 km protected cycle lane.

The pandemic also spurred targeted initiatives. Fifteen Transjakarta buses were deployed to carry medical personnel from their designated accommodations to regional public hospitals. Queueing priority was granted to medical personnel in transit stations. School buses unused during the pandemic were also deployed as an alternative to commuter trains, reducing crowds in one main train station.

This progress was only possible through collaboration between the city, technical experts, civil society groups and, ultimately, its citizens. The strong collaborative spirit that the city has forged over the years has become a key driver in transforming Jakarta into a “Maju Kotanya, Bahagia Warganya” (a progressive city with happy residents).

Jakarta's public transport remained resilient serving residents during the 2020 pandemic. Source: ITDP.



2. Public transport integration



Microtrans vehicles, part of the Transjakarta system, require service standards. Source: ITDP.

Transjakarta was first introduced as a BRT system in 2004 to serve commuters in the Greater Jakarta Metropolitan Area (Jabodetabek) and it has gradually expanded. From 2015 to 2020, the total number of routes have increased by 850%. Currently, Transjakarta has 13 corridors in operation, with a total of 255 routes. As a result, Transjakarta now serves 82% of the population in Jakarta.

Jak Lingko integration scheme

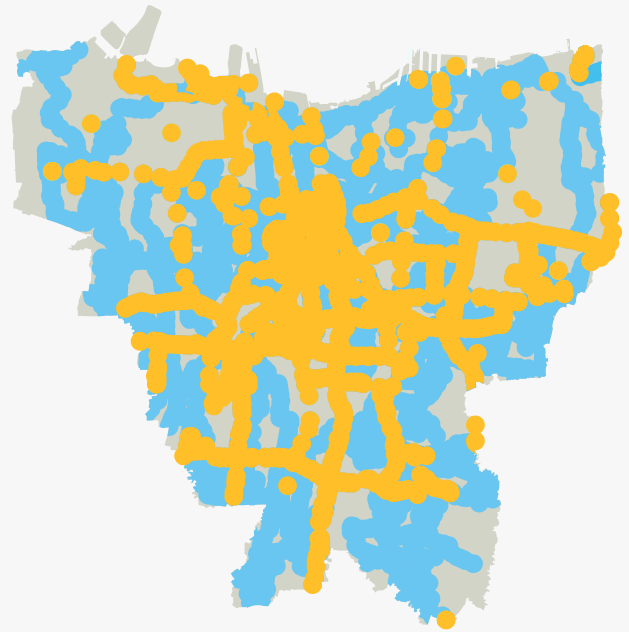
Starting in January 2018, Transjakarta began integrating its services with existing paratransit operators under a pilot integration scheme called Ok-Otrip (now called **Jak Lingko**), incorporating universal ticketing for paratransit service into the Transjakarta system. The integration pilot convened regional leaders, paratransit operators and the city government and included discussions, business studies and route trials to deliver state-of-the-art examples of cooperation and forward thinking on the part of the key stakeholders.

Existing paratransit operators signed a multi-year contract with Transjakarta, committing the new “Mikrotrans” service to required service standards. Passengers can now use a combination of Mikrotrans and buses under integrated fare for a three-hour period using non-cash payment. By using a fleet of four-meter minibuses that carry up to 11 passengers each, Transjakarta can now run on narrow roads and reach more passengers in the densely populated areas, such as urban kampongs (urban villages).

Passengers tap the Jak Lingko fare card while entering the Mikrotrans vehicles. Source: Jakarta Provincial Government.



Transjakarta network coverage before integration with Mikrotrans (yellow), and after the integration (blue). Source: Transjakarta.



- 42% TJ service coverage before Mikrotrans integration
- 81.9% TJ service coverage after Mikrotrans integration

The Jak Lingko integration scheme also envisions seamless mobility between Transjakarta and the newly established MRT Jakarta and LRT Jakarta, as well as commuter trains operated by the state government (KAI). Physical integration with these modes has been already rolled out at several stations.

Transjakarta key facts:



55 routes, 4,000 buses in operation



Increased the number of routes by more than 188% between 2016 and 2020, reaching 82% of Jakarta's population



Reached one million daily passengers in 2020



Reduced 76,016 tonnes of CO2-eq in the past two years

Physical integration with MRT, LRT and commuter trains

The operators of KAI, LRT and MRT began working on integrating the passenger transfer facilities as part of Jak Lingko. MRT Jakarta has led the project with the goal of seamless integration between the four modes of transport for its new rail corridor. In 2020, four integrated stations were built, including: Tanah Abang, Senen, Juanda, and Sudirman/Kendal. In 2021, another five stations were integrated: Tebet, Palmerah, Gondangdia, Manggarai and Kota.

These projects not only created seamless transfers between the transport modes but also improved pedestrian access to the stations. Following this collaborative and comprehensive planning process, ten additional integrated stations are slated for construction.

A notable example of physical integration is the station redesign of the CSW intermodal transit hub to better connect the MRT service (serving 100,000 passengers a day) with the Transjakarta Corridors 1 (90,000 passengers a day) and 13 (25,000 passengers a day). The station, completed in 2017, is the highest elevated BRT station in the city and serves as a connection point for Transjakarta corridor 1 and 13. However, it was built without an elevator or escalator, and the corridors were connected only by a 117-step staircase. In March 2019, MRT began operations, passing directly beneath CSW and introducing an additional need for transfer access. By mid-2019, the surrounding area also became a new creative destination with the establishment of places like M Bloc, a new community and commercial space with an active frontage concept, which helped activate the pedestrian area around CSW station. With the introduction of elevators and escalators, the CSW station helps over 200,000 passengers daily, especially those with physical challenges.

[Jak Lingko transfer station integrating Transjakarta, Microtrans and the commuter train.](#) Source: Jakarta Provincial Government.



Jak Lingko system

Jak Lingko is a transportation integration scheme that integrates routes, services, infrastructure and fare systems. It includes the Transjakarta busses as well as rail-based MRT and LRT services owned by the Jakarta Provincial Government. Soon, it will also integrate the state-owned commuter train.

The name Jak Lingko combines two words: Jak for Jakarta and Lingko, which refers to the integrated networks of paddy field irrigation systems used in East Nusa Tenggara, Indonesia. This name was chosen to reflect the City's vision of an integrated transportation system.

New MRT & LRT public transport services

In April 2019, the city-owned transportation company PT MRT Jakarta started commercially operating its 16 km rail system, which runs from central to south Jakarta with 13 stations. Plans for expanding MRT corridors are slated to begin in 2027; the first extension will see 5.8 km added (Phase 2A) and then by another 6.0 (Phase 2B). In April 2019, PT LRT Jakarta began commercially operating 5.8 km of the LRT system to integrate residential and commercial areas from the northern and eastern residential suburbs of Jakarta, helping to alleviate congestion. The corridors are planned to be expanded by an additional 20 km by 2027 in five phases of construction.

Establishment of wayfinding standards through a collaborative process

Along with station integration, Jak Lingko included initiatives to integrate wayfinding systems for its public transport modes. The process of signage design and interventions was carried out in collaboration with a civil society organization Forum Diskusi Transportasi Jakarta (FDTJ). In the past years, FDTJ has led wayfinding interventions at bus stops, transfer corridors, and train stations as there was no standardized design in Jakarta's transportation system. In mid-2019, Transjakarta embraced this grassroots-spearheaded initiative

and began collaborating with FDTJ to improve 28 bus stops with a new, standardized design. The following year, the transport agency involved FDTJ in wayfinding design for intermodal transit hubs. This opened up further collaboration opportunities with other organizations and institutions, including public transport operators, to develop guidelines for standardized wayfinding design which were officiated through the Governor's decree.

Standardized wayfinding clearly informs the commuters of the available modes, routes and directions to easily access and transfer between modes. Source: ITDP.



3. First-last mile integration: Walking and cycling



The Kendal Tunnel is a significant transformation in the implementation of sustainable transport in Jakarta. Source: Jakarta Provincial Government.

The Jakarta City Government initiated a non-motorized transport (NMT) strategy to improve conditions for walking and cycling, and help increase access to public transportation. In order to deliver the strategy, a robust institutional alignment process took place between key agencies and discussions focused on project streamlining, alignment of roles and eliminating funding silos. The Public Works Agency was tasked with being the managing agency on pedestrian and cycling improvement projects. Additionally, a series of workshops and collaborative initiatives helped create public and institutional buy-in. The main strategic outcomes included improvements of pedestrian infrastructure, creating shared streets and better pedestrian connectivity in the vicinity of transit stations, as well as implementing cycling infrastructure and a bikeshare scheme.

Pedestrian access to stations

Between 2019 and 2021, Jakarta has focused on improving pedestrian facilities by expanding sidewalks and improving at grade pedestrian crossings in the vicinity of Transjakarta's transport stations. In 2019 alone, the city improved 87 kilometers of sidewalks, including 41 kilometers within 400 meters of Transjakarta stations. An example of improving pedestrian access is the conversion of Kendal Road into a

vibrant and safe pedestrian tunnel, facilitating an hourly flow of 5,000 pedestrians as they transfer between intercity trains, MRT, airport trains and Transjakarta BRT. A collaborative placemaking approach led by the city for this project involved local street artists who embellished the tunnel. The pedestrian tunnel became a new space for cultural, social and economic activities.

Tactical urbanism around MRT stations

Multiple stakeholders worked together on improving pedestrian safety through tactical urbanism interventions focusing on school children in the residential areas around newly opened MRT stations. This collaborative opportunity brought together MRT Jakarta, local government, transport and public works sub-agencies, NGOs, academics and local residents. The initiative was deployed in areas near Cipete Raya and Haji Nawiri MRT stations and included participatory activities to implement school safety zones and improve pedestrian crossings and wayfinding on local streets to help navigate to and from the MRT.

Shared street redesign created safer conditions for school children to walk in residential areas near MRT stations. Source: ITDP.



The protected bike lanes encourage cycling and greater connectivity with other transport modes through the strategic planning of routes and parking facilities at stations. Source: Jakarta Provincial Government.



Rapid development of cycling infrastructure

To spearhead the NMT strategy and accelerate cycling in Jakarta, a multi-stakeholder workshop called Jakarta Cycle-Friendly City was held in 2019, convening city officials and cycling groups. This resulted in a stakeholder consensus on cycling priorities and the establishment of concrete action plans to implement them, including safe cycling infrastructure, parking facilities and bikeshare. In the following months, Jakarta piloted 63 km of pop-up cycle lanes as part of the city NMT strategy. During the 2020 pandemic, the city piloted and then implemented its first protected cycle lane corridor, spanning 11 km through the Sudirman-Thamrin area. This corridor improved cycling safety, security, and convenience, serving about 37,000 people from 14 subdistricts. The cycle lane also connects nine BRT stations, six MRT stations, the LRT network, commuter trains and airport trains. Jakarta plans to extend the cycle lane network by 500 km by 2030 prioritizing corridors with protected cycle lanes each year.

In addition to developing the cycle network, the NMT strategy mandates each public transportation company provide bicycle parking facilities at all stations.

Bikeshare system

In 2020, Jakarta started a pilot of the dockless bike-sharing system with 487 cycles and 63 parking locations around central Jakarta. The city selected one bikeshare operator for this pilot phase; in the future, a multi-operator scheme is expected to be implemented.

The city decided to implement the bikeshare with a publicly-owned, privately-operated scheme. Under this arrangement, the government of Jakarta has the authority as the regulator and the transport agency will monitor the operation and manage permit licenses for future operators. The city also set data-sharing rules for the private

operators; a multi-stakeholder group consisting of the city government, transport agency and the Jakarta Smart City Agency collaborates on monitoring the data.

The city is currently planning to expand the bikeshare system by providing 96 more parking locations conveniently located near transport stations. The transport agency decided to implement the bikeshare parking with a hybrid system where bicycles have to park in the designated area. This approach is meant to use the public space more efficiently.

Bikeshare parking stations conveniently located near transport stops. Source: ITDP.



4. Transformative use of parking space

Former park and ride facility boasts vibrant uses during the day and at night. Source: ITDP.



Jakarta has also worked to transform land designated for vehicle parking for active uses. For example, the city transformed a park and ride facility in the Thamrin 10 area city center into a space with economic activity. This initiative not only contributed to the city's vision to support more sustainable transport and reduce congestion, but also brought financial benefits. Based on 2019 data, the transformation increased city revenue by 800% each month from the economic activities compared to contributions from parking use.

The before image of parking at Thamrin 10 and after the transformation showing shops, eateries and open spaces. Source: ITDP.



5. Summary of lessons learned

Stakeholder group discusses bike lane network planning and design at a workshop. Source: ITDP.



Over the past several years, the City of Jakarta has successfully integrated its public transport services and embarked on rapid improvements for walking and cycling. This success depended not only on operators' service delivery but also on the collaborative support of operators, city agencies and the public, as well as the dedication of leadership. The vision for affordable and convenient travel translated into concrete actions and steps entailing institutional alignments, establishing priorities for interventions and allocating budgets towards targeted projects.

The process of integrating paratransit was inclusive and aimed at building good relations and communications with the operators. The stages included comparative studies, establishing monitoring and evaluation metrics, a business plan, and finally, prioritizing routes and standards that the operators needed to abide by in order to participate in the scheme.

Collaborative processes were also part of the physical integration projects between Transjakarta and the rail services as well as the walking and cycling infrastructure projects. This allowed key city agencies to streamline the projects faster, and more efficiently.

Civil society participation has also been part of the collaborative approach. The city built on the grassroot-led initiative for establishing wayfinding standards and relied on public support during tactical urbanism initiatives and bike lane design trials. The transport system kept running during the pandemic and implementation projects continued to rollout with impressive outcomes benefiting the daily travel routines of Jakarta's residents.

6. Future plans for Jakarta's sustainable mobility



Tranjakarta's electric bus trial in 2021
Source: ITDP.

Bus electrification

To reduce the impact of emissions in Jakarta, the Government of Jakarta has committed to limiting the use of conventional transport using fossil fuel. Transjakarta has developed plans to begin deploying electric buses in 2021 with an implementation horizon of 2030.

Further integration plans

The city will continue expanding intermodal access within the existing network as well as for the upcoming LRT services in Jabodebek (Greater Jakarta).

Full fare integration for all public transport will continue to be rolled out for all transport modes. One of the final goals of Jak Lingko is to integrate public transportation service providers under one institution so it may achieve its targets for mode share and population coverage.

To improve user experience on public transport, Jakarta will continue implementing standardized wayfinding and information systems for all transport modes. It will also leverage data to

increase public transport ridership and enable access to service information through Mobility-as-a-Service applications.

Supporting push policies

The city is studying the application of the electronic road pricing system in Jakarta and aims to pilot it on 20 corridors spanning over 162 km. Implementation will be split into four phases.

In June 2021, the City's transport agency introduced a regulation to implement higher parking fees in three pilot locations to help curb congestion. Along with the pilots, further research into increasing the parking fees along the main corridors of public transport has been developed, which includes affordability and willingness-to-pay studies.

At the beginning of 2021, Jakarta Transport Agency adopted a low-emission zone (LEZ) in Kota Tua, the city's old town area in northern Jakarta. The LEZ covered a 1.85 km street surrounding the inner area of Kota Tua. By 2027, Kota Tua will be fully pedestrianized with integrated accessibility from multiple modes of public transportation.

Closing Statement

Today, Jakarta has shifted its paradigm from car-oriented development to Transit Oriented Development (TOD) and aims to become a more compact city through our upcoming urban regeneration programs. This paradigm shift has the potential to become an international best practice and can contribute in improving the lives of not only our citizens but also the 30 million people living in the Greater Jakarta Area. We are consistently taking the lead in acting to improve urban resilience and be a champion in establishing a sustainable transportation system in Indonesia. Therefore, throughout the years, Jakarta has prioritized and invested in pedestrian and cycling facilities and public transport development.

As a city of collaboration, Jakarta always encourages collaborations with various stakeholders. We are sending our appreciation to all the citizens, civil societies, technical experts and all parties who have been collaborating with us throughout the years to achieve our common vision of a happier capital city, including in the urban mobility sector. Moving forward, we hope MOBILIZE can be a platform for elevating our perspectives on sustainable transport in the pandemic era and leveraging further collaboration.

Copyright © 2021

**Institute for
Transportation &
Development Policy,
All rights reserved.**

**9 E 19th St, 7th Floor
New York, NY 10003**

mobilize.itdp.org