

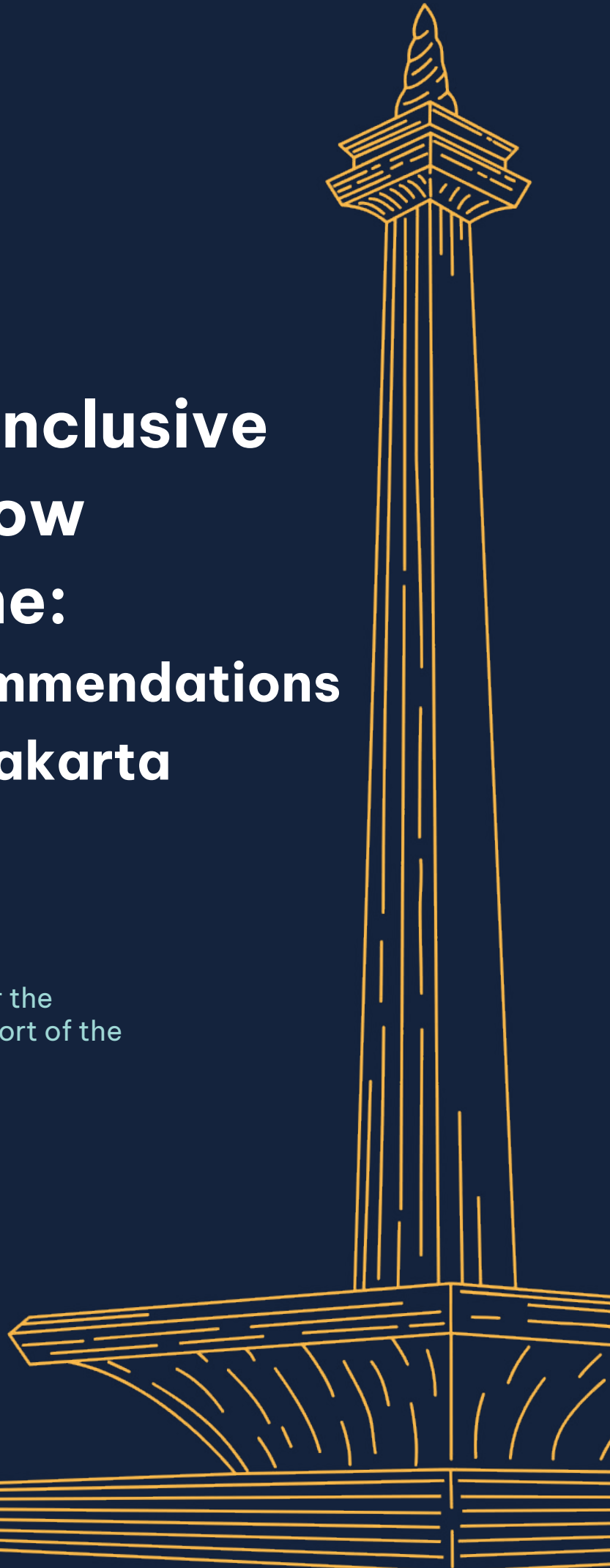
White Paper

Towards an Inclusive Integrated Low Emission Zone: Practical Recommendations for the City of Jakarta

Developed by: **Empatika**

This report was prepared under the
Breathe Cities Initiative in support of the
Jakarta Provincial Government

February 2026



Prepared by:

Main Author:

Yeni Indra
Iqbal Abisaputra
Neha Koirala
Steven Ellis

Reviewer:

Luisa Miranda Morel
Vivian Pun
Fadhil Muhammad Firdaus

Study Team:

Iqbal Abisaputra
Yeni Indra
Krisman Pandiangan
Upik Sabainingrum
Rizqan Adhima
Sarah Monica

Acknowledgements

This study was only possible thanks to the staff and head of Kecamatan Tanah Abang and Kecamatan Kebayoran Baru, Kelurahan Kramat Pela and Kelurahan Kebon Melati, RW 06 Kebon Melati and RW 09 Kramat Pela, Dukuh Atas Gojek Driver Association, Blok M Service Providers and many community members who welcomed our researchers into their communities and shared their experiences with us. We are grateful to the communities for this opportunity and for openly sharing insights into their lives. We hope that the report reflects well their views and experiences and helps the inclusive low emission zones policy implementation in Jakarta.

Supported By:



This publication was made possible thanks to the support of **Breathe Cities**.

Breathe Cities is a global initiative supporting cities to clean the air and enhance public health. Delivered by **Bloomberg Philanthropies, Clean Air Fund** and **C40 Cities**, the initiative offers cities tools to take ambitious clean air action by expanding access to data and raising public awareness.

Launched in 2023 by Michael R. Bloomberg, the UN Secretary General's Special Envoy on Climate Ambition and Solutions and founder of Bloomberg Philanthropies, and Sadiq Khan, Mayor of London and C40 Cities Co-Chair, Breathe Cities is accelerating action in 14 cities to improve the air 77 million people breathe.

To learn more, visit Breathe Cities' [website](#) or follow on [Instagram](#) and [LinkedIn](#).

Disclaimer:

The views expressed in the report do not necessarily reflect the views and policies of **Bloomberg Philanthropies, Clean Air Fund** or **C40 Cities**.

Photo Credit: All photographs were taken by the Empatika team, copyright C40. All photos were taken with the consent of those depicted.

Executive Summary

Jakarta's Integrated Low Emission Zone (Kawasan Rendah Emisi Terpadu, KRE Terpadu) is envisioned as a multisector approach to improving urban air quality, extending beyond transportation to shape healthier, more liveable city environments. To support the KRE Terpadu feasibility assessment and implementation planning, Empatika conducted a city needs assessment, stakeholder engagement and site-specific equity assessment in Blok M and Dukuh Atas. The findings from these studies provide key considerations to ensure that the transition to cleaner air through policies like the KRE Terpadu strengthens daily life in the city and avoids placing disproportionate pressure on local communities with limited flexibility, such as informal workers, low-income commuters, caregivers, older people, and persons with disabilities.

Who this report is for, and why it matters

This report is intended for Jakarta city officials, planners, and implementing agencies responsible for designing and delivering KRE Terpadu. It is written to inform policy decision-making by translating lived experience into practical guidance to ensure fair, effective and impactful action in the longer term. Rather than critiquing policy intent, the report focuses on opportunities to strengthen implementation, helping officials anticipate risks, reduce disruption, and build public trust so that KRE Terpadu can be delivered effectively and sustainably.

What the assessments show

The needs assessment examined system-level readiness through desk review, interviews, and a participatory validation workshop with government and non-government stakeholders. It identified opportunities to strengthen implementation based on lessons from earlier Low Emission Zone (LEZ) pilots, including improving community engagement, clarifying coordination across agencies, and integrating livelihood and access considerations early in planning. The assessment highlighted the importance of aligning process, planning, and outcomes from the outset.



Building on this, the Blok M and Dukuh Atas assessment explored how KRE Terpadu may be experienced in everyday life. Through participatory discussions, participants shared how pollution, mobility, and work intersect in practice. Air pollution was understood mainly through what people could see, smell, or physically feel; invisible risks such as PM_{2.5} rarely shaped behaviour unless linked to tangible symptoms. Mobility choices were described as coping strategies to preserve time, energy, and income, meaning that even small changes to routes, access, or waiting areas can have immediate economic consequences.

Across both locations, livelihood impact emerged as the most sensitive issue:

- **In Blok M**, income depends on visibility and predictable foot traffic, making vendor relocation particularly disruptive.
- **In Dukuh Atas**, livelihoods, especially for online motorcycle taxi drivers and couriers depend on continuous movement and access, so rerouting, unclear pick-up points, or longer compliance procedures directly reduce earnings.

Participants consistently articulated that experiencing the transition in a *fair and workable way* meant:

- receiving information early,
- having time to adjust through gradual implementation,
- seeing rules applied consistently,
- and being protected from being pushed out economically.

There was broad willingness to comply with measures such as emission testing or vehicle restrictions, provided they are fast, affordable, nearby, and predictable.

Key findings

- Public support for cleaner air is strong, but acceptance depends on how changes affect daily routines and income.
- Small disruptions to access or mobility can result in immediate income loss for informal and low-income workers.
- Clear communication, phased implementation, and consistent

enforcement significantly increase public understanding and willingness to adapt.

- More inclusive community participation and engagement throughout planning, implementation, and monitoring can improve community support as well as identify factors and opportunities that can help determine success and sustainability.
- Different locations require different approaches, building on existing patterns rather than imposing uniform solutions.

Priority directions for implementation

- **Protect livelihoods early** by identifying activities that depend on access, movement, and visibility before enforcement begins.
- **Design mobility changes around daily burden**, considering time, cost, safety, and effort, not just traffic flow.
- **Apply phased and supportive compliance**, starting with explanation and trial periods before penalties.
- **Use communication as implementation infrastructure**, through trusted local channels and two-way dialogue.
- **Strengthen coordination and monitoring**, using existing Jakarta systems to track impacts and adjust early.

Taken together, these findings show that KRE Terpadu's success will be shaped less by environmental ambition alone and more by how well it fits into daily life. By building on existing systems and lived experience, Jakarta has a strong opportunity to deliver cleaner air while strengthening trust, legitimacy, and the city's ability to thrive through transition.



Contents

Executive Summary 3

Introduction 7

Methodology 10

Findings 13

Communication: How people understand air pollution 14

Mobility: How people move in Blok M and Dukuh Atas 16

Livelihoods: How small changes create big impacts 17

Compliance: Costs, and willingness to support a program like the KRE 18

Inclusivity: What fairness feels like to people 18

Support: Trust, information, and governance 19

Recommendations for the inclusive design and implementation of the KRE Terpadu 20

Practical applications in Blok M and Dukuh Atas 24

Conclusion 30



Introduction

Jakarta's air pollution remains one of the city's most urgent public health and economic challenges. In response, the Provincial Government of DKI Jakarta is advancing the Integrated Low Emission Zone (Kawasan Rendah Emisi Terpadu, KRE Terpadu) as a multisector approach to improving air quality beyond transportation alone. Unlike earlier Low Emission Zone (LEZ) pilots, KRE Terpadu is intended to integrate transport, industry, energy, land use, and the built environment, while strengthening how impacts on daily life are anticipated and managed.

Evidence from past LEZ pilots in Jakarta, including Kota Tua and Tebet, shows that while vehicle restrictions can reduce emissions, implementation without sufficient attention to access, mobility, and livelihoods can generate unintended socio-economic effects. Documented impacts include reduced income for street vendors, longer travel times for informal transport workers, congestion shifting to surrounding neighbourhoods, and reduced accessibility



for residents and workers who rely on private or informal transport modes¹²³. These experiences underscore the need to design KRE Terpadu not only as an environmental intervention, but as a policy that interacts directly and fairly with how people live and work, collaborating with community members to positively support their daily activities and avoid unintended consequences.

The environmental and economic stakes are significant for Jakarta. In 2019, the transportation sector accounted for an estimated 67% of PM_{2.5} emissions, 58% of PM₁₀ emissions, and 84% of black carbon emissions in Jakarta, with heavy-duty vehicles as the primary contributors⁴. Since then, vehicle numbers have increased to approximately two million cars and more than eight million motorbikes serving a population of 10.6 million (2023)⁵. Manufacturing and energy are the second and third largest contributors

of PM_{2.5}, with coal-fired power plants and industrial facilities in and around Greater Jakarta contributing substantially to pollution levels, particularly during seasonal wind patterns⁶.

Poor air quality has measurable health and economic consequences. Annual PM_{2.5} levels in Jakarta have exceeded national standards by up to three times, with estimated economic losses equivalent to around 2% of provincial GDP due to premature mortality and illness linked to PM_{2.5} and ground-level ozone (O₃) concentrations in Jakarta have been observed to frequently exceed the WHO 8-hour guideline values during the dry season⁷. While overall pollution

1 University of Trisakti, "Presentation of: Evaluasi Kualitas Udara LEZ Kota Tua Dissemination event from Environment Agency on the evaluation of LEZ Old Town", June 2022.

2 Clean Air Catalyst, "Grassroot Actions Against Polluted Skies: How Jakarta's Urban Villages Tackle Air Pollution", <https://www.cleanaircatalyst.org/news/grassroot-actions-against-polluted-skies-how-jakartas-urban-villages-tackle-air-pollution>, accessed in December 2024.

3 ITDP and Indonesia UK PACT, "Dokumentasi dan Rekomendasi LEZ Kota Tua Jakarta", (Jakarta:2022).

4 Dinas Lingkungan Hidup Provinsi DKI Jakarta and Vital Strategies, "Laporan Kajian Inventarisasi Emisi Polusi Udara DKI Jakarta 2020", accessed in November 2024.

5 Badan Pusat Statistik, "Jumlah Kendaraan Bermotor Menurut Jenis Kendaraan (unit) di Provinsi DKI Jakarta, 2022", accessed in November 2024, <https://jakarta.bps.go.id/id/statistics-table/2/Nzg2lzl=/jumlah-kendaraan-bermotor-menurut-jenis-kendaraan-unit-di-provinsi-dki-jakarta.html>

6 Mongabay, "Jakarta snags 'most polluted' title as air quality plunges and officials dither", <https://news.mongabay.com/2023/08/jakarta-snags-most-polluted-title-as-air-quality-plunges-and-officials-dither/>, accessed in December 2024.

7 Syuhada, et. al., "Impacts of Air Pollution on Health and Cost of Illness in Jakarta, Indonesia", *Int. J. Environ. Res. Public Health* 2023, 20(4), 2916; <https://doi.org/10.3390/ijerph20042916>, accessed in

levels do not differ consistently across income groups, recent street-level studies indicate that exposure varies significantly based on proximity to local pollution sources such as major roads, industrial zones, and power plants⁸.

Certain populations face higher risks due to overlapping factors: exposure to pollution sources, limited income buffers, long commuting distances, and uneven access to health services. Communities near industrial corridors, informal settlements along major roads, and households with children are particularly affected. Children in Jakarta face elevated risks due to higher breathing rates, frequent outdoor activity, and developing respiratory systems, increasing vulnerability to long-term health impacts⁹.

Against this backdrop, this white paper builds on the technical foundation established by the **Jakarta LEZ Roadmap developed by ITDP Indonesia** and the **feasibility study by CENIT**, examining how KRE Terpadu measures may be experienced in practice by communities living and working within potential implementation areas. Drawing on a Needs Assessment and a site-based Equity Assessment in Blok M and Dukuh Atas, the study identifies which groups are likely to be affected and explores how changes in mobility, access, compliance requirements, and land use may shape daily routines, income stability, and service access. By focusing on practical dimensions, such as mobility patterns, livelihoods, communication, and local capacities. The paper highlights how potential impacts may emerge and how risks can be anticipated and addressed early in policy design. In doing so, it complements system-level and regulatory interventions with site-based insights, supporting Jakarta's decision-makers in delivering cleaner air and improved quality of life while minimizing disruption and strengthening public trust during the transition.

November 2024.

⁸ S. Dewi Sumaryani, et.al., "Linking Jakarta's Typical Indonesian Urban Context, Air Pollution, and Child Health", *The Open Public Health Journal*, 16, DOI: 10.2174/18749445-v16-e230831-2023-109

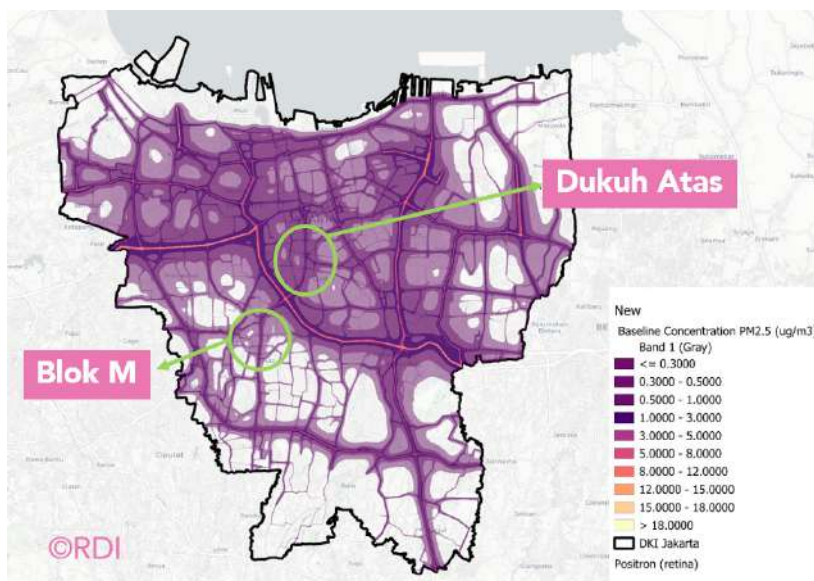
⁹ Ibid.



Methodology

This study was implemented in two connected stages to support the feasibility and inclusive design of KRE Terpadu: a needs assessment and stakeholder engagement, followed by a site-based equity assessment.

The needs assessment established the foundation for the study. It involved a structured literature review, interviews with government and non-government stakeholders, and an initial stakeholder engagement process. The process brought together provincial government agencies responsible for air pollution management, environmental and climate-focused NGOs, and community-based organizations representing informal workers, low-income residents, and other mobility-dependent vulnerable groups, ensuring diverse institutional and community perspectives were reflected. This stage clarified policy objectives, identified priority concerns, and mapped community groups likely to be affected by KRE Terpadu. It also informed the scope, research questions, and methodological design of the subsequent fieldwork. Importantly, the needs assessment aligned with the KRE Terpadu feasibility study, which identified Blok M and Dukuh Atas as two of the most potential



locations for low-emission zone implementation due to their urban functions, mobility intensity, and public transport connectivity.

Building on this foundation, the equity assessment focused on understanding how KRE Terpadu may be experienced in everyday life within selected sites. Fieldwork directly engaged community members in Blok M and Dukuh Atas to explore differential needs, capacities, and risks that shape how people may benefit from or be burdened by KRE Terpadu implementation. This approach allowed the study to move beyond policy assumptions and capture lived experience, supporting early identification of unintended impacts and practical mitigation measures.

Study domains and site selection

Blok M and Dukuh Atas were selected as study domains based on feasibility criteria related to land use, built environment, transportation, and social considerations. Both areas are dominated by functions that strongly generate daily travel. Areas with such land-use profiles are prioritised for low-emission zones due to their high mobility demand and emissions reduction potential.

- **Dukuh Atas** serves as one of Jakarta's main business centres, with office functions accounting for 45.25% of total gross floor area, followed by residential, hotel, and commercial uses.
- **Blok M** shows a mixed character, with a predominance of government (40.55%) and commercial (28.59%) functions, reinforcing its role as a hub for government services and trade.

Transport feasibility further informed site selection. Intervention boundaries were delineated along arterial and collector roads, which accommodate the highest traffic volumes and are major contributors to transport emissions. Both sites benefit from strong public transport connectivity within a 500-metre walkable radius, including MRT, TransJakarta, and Jaklingko services, aligning with Jakarta's transit-oriented development agenda and supporting assumptions of mode shift from private vehicles.

Site selection was further guided by a combined urban criteria analysis, aggregating Transportation, Built Environment, Land Use and Waste, and Equity scores¹⁰ to identify areas where interventions could deliver the greatest overall impact. Industrial areas were excluded from this combined analysis due to their low community-oriented attributes and need for specialised strategies. The presence of ProKlim¹¹ locations in or near the study areas also indicated existing community-based environmental engagement, offering opportunities to build on ongoing sustainability efforts.

Engagement methods and considerations

To generate in-depth insights, the study employed participatory Focus Group Discussions (pFGDs) with groups identified during the needs assessment, including women with children, older people, persons with disabilities, motorbike taxi drivers, restaurant workers, and other informal workers. Four pFGDs were conducted, two in each location with 6–8 participants per group. Sessions emphasised informal, interactive engagement using visual and scenario-based tools, supported by power-aware facilitation in familiar settings. These discussions were complemented by direct observation and informal conversations during scoping visits, strengthening understanding of mobility patterns, livelihoods, and local environmental conditions.

¹⁰ The Equity Score is calculated by aggregating the normalized values of five indicators: population density, vulnerable user density, green space per capita, C40 air quality index, and poverty rate. This composite score captures the combined equity-related conditions of area. The indicators reflect dimensions of population vulnerability, environmental pressure, and social disparities.

¹¹ **Program Kampung Iklim (ProKlim)** is a national initiative led by the Ministry of Environment and Forestry to promote community-based climate adaptation and greenhouse gas (GHG) mitigation at the neighbourhood level, strengthening local resilience through collaboration between communities and local governments.



Findings

The equity assessment in Blok M and Dukuh Atas indicates broad public support for improved air quality. However, the assessment also highlights that the acceptance of KRE Terpadu is reduced when implementation disrupts people's daily lives, particularly their mobility or livelihoods. Informal workers, small traders, drivers, and commuters are particularly sensitive and can be further burdened by abrupt regulatory changes, unclear rules, and inconsistent enforcement. The findings suggest that setting up environmental objectives alone are insufficient to ensure compliance. Effective policy implementation requires greater attention to social and economic impacts, especially on informal and low-income workers.

Although air pollution affects most residents of Jakarta, insights from discussions indicate that both exposure and policy impacts are unevenly distributed. The effects of KRE Terpadu vary across locations, depending on land use, transport infrastructure, and the socioeconomic profiles of people who work in or depend on each area. To better understand these differences in impacts, people from two locations (Blok M and Dukuh Atas) were included through scenario-based group discussions involving government and NGO stakeholders.

Across the locations, logistics drivers (motorbikes and small trucks) and motorbike taxi drivers were consistently identified as the most vulnerable groups. Their vulnerability stems from high dependence on mobility for income, concentration in informal or low-income generating work, and limited capacity to absorb increased operating costs. Vehicle restrictions and pedestrianization are also likely to displace drivers to surrounding areas, increasing congestion and competition. Anticipated impacts of policy implementation include longer travel routes, higher fuel costs, extended working hours, and reduced customer access, all of which may impact their income stability and well-being. Long commuting distances and increased costs of commuting also constrain the feasibility of shifting to alternative modes like public transportation.

Other potentially affected groups include street vendors, small food traders, women, older persons, and persons with disabilities, whose access to livelihoods and essential services could also be disrupted. How the different groups adapt, however, varies according to their employment status and access to institutional support. For instance, logistic drivers have less risks compared to motorbike taxi drivers because logistic drivers typically work for companies that have decision making power to adjust their business model given KRE Terpadu regulations, for instance adjusting logistic route to make it more efficient or changing delivery tariff.

The following findings are organized according to the themes that community members described as important: **communication, mobility, livelihoods, compliance, inclusivity, and support**. These themes also correspond with many of the domains and equity considerations noted in the feasibility study.

Existing knowledge and systems that can be leveraged to support KRE Terpadu are summarized in **Table 1**, based on information from the desk review and stakeholder consultations.

Communication: How people understand air pollution

Community perceptions of air pollution are shaped largely by what is felt and perceived through the senses rather than through formal information. Pollution is recognized when it is visible or has a strong smell, while invisible risks such as PM 2.5 are rarely understood. This reflects a major communication gap: people shared that no one has explained what air pollution is, how it affects the body, or why policies such as KRE Terpadu are needed. As a result, health impacts are often misunderstood, normalized, or believed to affect only certain groups, such as older people.



“If the sky looks blue, the air must be clean.”

(A mother, Dukuh Atas)

Engagement processes also show communication weaknesses. Consultation is often late, limited to community leaders, and inaccessible to vulnerable groups like women and elderly, reducing opportunities for meaningful dialogue. Restrictions (vehicle mobility) linked to new policies like KRE Terpadu, are particularly prone to misunderstanding when benefits of the policies (reduced pollution) are not clearly explained. Additionally, it may take time for some groups to recognize the urgency of the policy especially if they do not perceive air pollution as high risk.

Table 1. Existing knowledge and systems to support KRE Terpadu

KRE Terpadu domain	Previous study, program, existing regulations
Transportation	<ul style="list-style-type: none"> • Raperda MKLL which, when legalized, is expected to enable a stronger enforcement in managing transportation, including through LEZ zone, and allow government agency to allocate necessary resources • Law on Sexual Violence Crimes (UUTPKS NO. 12/2022,) which can be used to frame advocacy and discussions around women’s safety, especially when using public transportation • Grassroot Actions Against Polluted Skies: How Jakarta’s Urban Villages Tackle Air Pollution by WRI Indonesia • Jakarta LEZ Roadmap by ITDP Indonesia

Built environment	<ul style="list-style-type: none"> • Working with community through storytelling to foster climate change adaptation by Purpose Climate Lab • Community engagement to develop affordable and healthy housing by Rujak Centre
Energy	<ul style="list-style-type: none"> • Climate vulnerability assessment in Jakarta by DLH • Final Report on the Emissions Profile Inventory and Greenhouse Gas Emissions Reduction Reporting for DKI Jakarta Province (Laporan Akhir Inventarisasi Profil Emisi dan Pelaporan Penurunan Emisi Gas Rumah Kaca Provinsi DKI Jakarta) by DLH • Task force on Climate Disaster Mitigation and Adaptation (MABI), which includes several government agencies. There is a potential to merge KRE Terpadu into this task force.
Overarching theme	<ul style="list-style-type: none"> • Inclusive Climate Action (ICA) framework that has been adapted in the musrenbang¹² (meeting of local government, including at the community level, for short-term planning)

Mobility: How people move in Blok M and Dukuh Atas

Across Blok M and Dukuh Atas, people experience mobility in practical, everyday terms: time, cost, effort, safety, and dignity. In Blok M, daily movement is shaped by uneven streets, heat, and safety risks. Motorbikes in narrow alleys, missing crossings near schools, and the heat makes walking difficult, so families take longer and less direct routes to avoid unsafe and uncomfortable areas. Expectations that residents will walk farther or use new routes, without improvements to safety, shade, or comfort, were seen as unreasonable. In Dukuh Atas, mobility is closely tied to income. Motorbike taxi and logistics drivers rely on fixed routes to save time and fuel; with small detours reducing trips and earnings. Across both locations, changes to routes or access points also translate into fewer customers and lower earnings for street vendors.

Transport is seen as a task that must fit into tight daily routines, not as a system. Motorcycles dominate because they provide door-to-door travel, reduce walking in heat or rain, and minimize waiting, while bajaj are valued for accessibility and their ability to carry goods, especially by older people and mothers. Public transport and long walking are often seen as demanding

¹² Think Policy & C40 Cities. (2025). Mainstreaming Inclusive Climate Action in Jakarta: A Policy Brief. Prepared for BAPPEDA Jakarta.

extra effort, time, and energy. Walking is feasible only in well-designed areas with shade, crossings, and safety.

People emphasized that mobility changes under KRE Terpadu could increase time, effort, or costs if not carefully designed, particularly affecting informal workers, caregivers, and low-income commuters. Restrictions may shift congestion to neighbouring streets or reduce income unless alternatives provided are safe, reliable, comfortable, and economically viable. For KRE Terpadu to be effective, mobility changes must reduce total effort rather than simply redirect it. If walking is encouraged, it must be safer, cooler, and more comfortable. If routes are altered, they must remain economically viable. If public transport is promoted, it must be reliable, respectful, and easy to use.

“If we drive longer distances, we run out of fuel, lose orders, and our income drops. That is a risk for our family.”

(Motorbike Taxi Driver, Dukuh Atas)

Livelihoods: How small changes create big impacts

Across Blok M and Dukuh Atas, livelihood impacts because of KRE Terpadu emerges as a concern. Informal workers, including vendors, parking attendants, bajaj drivers, motorbike taxi drivers, and couriers, earn income on a daily basis, and have limited capacity to cope with income disruptions. In Blok M, livelihoods depend heavily on visibility and steady foot traffic and even minor relocations can reduce customers and tips. In Dukuh Atas, income depends on movement and trip volume, with motorbike taxi and logistics drivers operating on tight margins. Longer routes, unclear pick-up points, delays, or sudden rules can reduce trips, increase fuel costs, and directly lower daily earnings. Across both locations, people stressed that income loss is immediate, whereas environmental benefits are long-term.

Waiting time for services, such as emissions testing conducted in large batches, can significantly reduce income. Drivers may spend several hours waiting in long queues, during which they are unable to accept orders, resulting in missed customers and lower daily earnings. Some vendors near pedestrianized areas benefit from higher foot traffic, highlighting that KRE Terpadu impacts are uneven, even within the



same area: while some benefit, others, particularly those whose income depends on speed and access, face higher risks. Equitable implementation of KRE Terpadu requires minimizing disruption, providing clear information, predictable rules, and gradual adjustments to protect livelihoods and build trust, ensuring the policy does not disproportionately burden those who are the most vulnerable.

Compliance: Costs, and willingness to support a program like the KRE Terpadu

Across Blok M and Dukuh Atas, compliance with KRE Terpadu is shaped by practical feasibility. People express willingness to follow requirements, such as vehicle emission testing, if these services were nearby, quick, and affordable. The main barrier is time. People share that long queues, distant locations, or slow procedures impact their income by taking hours away from work, potentially leading to lower earnings, which influences compliance.

Interest in electric motorcycles exists, but concerns over high upfront costs, limited charging infrastructure, maintenance, durability, and safety in rain or floods limit buying and use. Information gaps further affect willingness to use electric motorcycles, as people need clear guidance on performance, repairs, and operational reliability. While not opposed to cleaner technology, people put an emphasis on solutions that align with their daily routines, tight schedules, and income needs.

Inclusivity: What fairness feels like to people

Ensuring an equitable impact of KRE Terpadu can be challenging due to the long-term and invisible effects of air pollution, which does not pose immediate concerns for many communities and makes it harder to raise public awareness and support for the policy. Equitable impact, however, can be improved through clearer and more relevant communication. Framing KRE Terpadu around practical benefits, such as fuel savings and more inclusive public spaces for families, like RPTRAs¹³, can help people understand its value. Linking the policy to social well-being can strengthen public support.

13 A network of child-friendly integrated public spaces and community centers initiated by the Jakarta provincial government to provide safe, green, and multifunctional spaces in densely populated urban areas



Despite different local realities, people across Blok M and Dukuh Atas shared a common understanding of what fairness feels like. **It means being involved early rather than informed after decisions are made; knowing the rules and trusting they will not change suddenly; receiving clear and simple information; having enough time to adjust; protecting daily income; avoiding unequal burdens; and ensuring access to safe, comfortable walking routes.** Above all, fairness is associated with implementation that feels respectful and predictable.

Support: Trust, information, and governance

Trust emerged as a fragile factor that shapes perceptions around the implementation of KRE Terpadu. People referred to having experienced unclear rules, uneven enforcement, and limited communication as familiar features of policy implementation in Jakarta, explaining that they learned about the introduction of or change in policy only after decisions were made. **While most support government programs, they emphasized that predictable and fair implementation matters more than the policy itself.** In their experience, *'rules are sometimes strict and sometimes ignored'*, *'negotiable or selectively applied'*, pointing to a broader concern: when there is limited transparency and consistency, risks are not shared equally by those who have the least power and those who have the power to get by.

People stressed the need for early, clear, and simple communication using plain Bahasa Indonesia, visual materials, and face-to-face outreach through trusted local networks such as Kelurahan, RT/RW, and community leaders. **They preferred a phased approach: socialization first, trial periods next, and enforcement last. This process builds dignity, allows time to adjust, and protects vulnerable groups.** Trust in a policy grows when rules are clear, explained consistently and implemented in a sustained way, with communities actively involved in shaping and preparing for change.



Recommendations for the inclusive design and implementation of the KRE Terpadu

The following recommendations detail key areas and strategies to guide the design, planning, and implementation of the actions detailed in the KRE Terpadu feasibility study to help ensure both effective and equitable impacts, as well as wider public support. They are organized according to the key areas that community members described as important as well as relevant domains from the feasibility study. These include: **communication, mobility, livelihoods, compliance, inclusivity, support, and governance.**

Although these recommendations are based primarily on findings from research undertaken in Blok M and Dukuh Atas, they would also apply to any of the other potential KRE Terpadu locations and would serve as useful guidance for other large projects in the greater Jakarta area or other large urban areas in Indonesia.

The last part of this section translates these overarching recommendations into more practical applications and context specific notes related to Blok M and Dukuh Atas. As shown in **Table 2** on page 26, the recommendations can be applied to multiple actions from the feasibility study, and cross multiple domains.

Why equity matters for KRE Terpadu in Jakarta

Findings from the needs assessment and equity assessment point to a consistent conclusion: people are supportive of clean air initiatives, but have some key concerns about how KRE Terpadu will affect their daily lives. Support for initiatives like these declines when rules are introduced abruptly, mobility becomes more difficult, or livelihoods are disrupted. Informal workers, small traders, drivers, and commuters feel these impacts first, and when regulations are unclear or enforcement is uneven, trust erodes quickly.

These concerns matter because environmental policy is effective only when people can comply without jeopardizing their income, safety, or access to the city. **If KRE Terpadu feels unsafe, confusing, or unfair, avoidance and resistance are likely—even when environmental goals are widely supported.** The recommendations below therefore focus on the conditions that enable effective implementation: clear communication, predictable rules, supportive compliance, and fair enforcement. Grounded in evidence from Jakarta's needs and equity assessments in Blok M and Dukuh Atas, they recognize that informal and low-income workers experience immediate losses when access, routes, or visibility are disrupted. Designed to be practical and compatible with existing provincial systems, these recommendations aim to reduce unequal impacts while strengthening public acceptance as KRE Terpadu is rolled out.

Communication: use public communication as a strategic tool

Public communication should be treated as core implementation infrastructure, not a supporting activity. For each KRE Terpadu area, communication should begin early and clearly explain what will change, when it will happen, and how people can prepare. Information must be delivered through trusted local channels, particularly Kelurahan, RT/RW, and community-based organizations, using simple language and visual formats. Communication should be two-way, with authorities explaining how community feedback has shaped final decisions. This transparency is essential for building trust and reducing fear or misinformation.

Mobility: design mobility changes around daily burdens

Mobility interventions should be designed around the daily burden people experience, including time, cost, safety, effort, and income risk. Walking and non-motorised movement should be promoted only where sidewalks

are continuous, shaded, safe, and accessible. Vehicle rerouting should be proportionate and predictable, avoiding long detours that increase travel time or reduce earning capacity for informal workers and service providers. Clear and well-marked pick-up, drop-off, and waiting areas are essential to minimize confusion and conflict. Where mode shifts are encouraged, connections to public transport should reduce, not add to daily time and cost. **Proposed changes should be tested with affected users before full enforcement to identify and correct practical issues early.**

Livelihoods: treat livelihood protection as a core strategy

For many informal workers and service providers, mobility and access are directly tied to daily income. Even minor changes in routes, waiting times, or selling locations can immediately reduce earnings. Livelihood protection must therefore be built into KRE Terpadu design from the outset, not treated as mitigation after impacts occur. Planning should systematically identify activities that depend on access, movement, and visibility, and account for them early. Design should prioritise stability and predictability by clarifying operating arrangements before enforcement. Where restrictions are unavoidable, practical measures, such as defined access windows for workers or service providers should allow essential activities to continue. Relocation should be avoided where possible; when unavoidable, it must follow consultation and minimise income disruption.



Compliance: apply phased and supportive compliance & ensure predictable and consistent enforcement

Compliance should follow a phased and supportive approach that allows time to understand, adapt, and comply. Implementation should prioritise explanation and transition periods before penalties are applied. Clear timelines, advance notice, reasonable grace periods, and accessible channels for clarification and complaints are essential. **Enforcement must be predictable, consistent, and coordinated across agencies.** Responsibilities should be clearly

defined under a single coordinating authority, with uniform guidance and monitoring to correct inconsistencies early. Fairness in enforcement is central to public trust.

Inclusivity: monitor equity impacts and adjust early

KRE Terpadu implementation should include ongoing monitoring of social and economic impacts alongside environmental indicators. This includes effects on livelihoods, travel time, safety, access to services, and spillover impacts in surrounding areas. Simple feedback mechanisms should allow communities and workers to raise concerns as they emerge. Findings should inform timely adjustments and be communicated publicly. Treating equity monitoring as a continuous activity prevents harm from becoming entrenched and strengthens long-term credibility.

Support: strengthening community participation and building support for KRE Terpadu

Community participation should be continuous, not limited to consultation phases. Engagement methods must be accessible to groups often excluded from formal forums, including informal workers, women caregivers, older people, and persons with disabilities. Collaboration with civil society organizations that already work at the grassroots level can strengthen trust, improve information flow and understanding, and support problem-solving during implementation. Participation should focus on practical issues such as access, routes, timing, and enforcement rather than abstract policy goals.

Governance: embedding KRE Terpadu in existing Jakarta systems

Rather than creating new structures, KRE Terpadu should be embedded within existing provincial systems and coordination mechanisms. Musrenbang provides a strong foundation for integrating inclusion principles and should be used as the main entry point to identify equity risks, review impacts, and adjust implementation over time. Kelurahan and RT/RW structures should play a central role in communication, validation of local arrangements, and feedback collection. Coordination across regional apparatus organization (Organisasi Perangkat Daerah - OPD) should use existing mechanisms with clear roles, shared guidance, and common indicators, ensuring equity considerations are embedded into routine governance.

Practical applications in Blok M and Dukuh Atas

While both Blok and Dukuh Atas are part of Jakarta's core urban system, they function very differently in terms of mobility, livelihoods, and patterns of adaptation.

The recommended approach therefore focuses on strengthening what already works in each location, rather than introducing abrupt structural changes.

In Blok M, this includes strengthening existing pedestrian patterns to support livelihoods and build trust. The priority for KRE Terpadu is not to redesign movement patterns from scratch, but to stabilise and strengthen existing pedestrian flows in ways that protect informal livelihoods and improve safety.

As street vendors, small traders, parking attendants, and service workers rely on visibility, predictable foot traffic, and proximity to access points, KRE Terpadu planning in Blok M should begin by identifying activities that depend on daily access and movement, and by consulting on vendor locations and informal pick-up points before enforcement begins. Street and zone design should maintain vendor visibility and pedestrian flow rather than relocating activities to less viable locations. Where restrictions on vehicle access affect logistics or restocking, clear and agreed time windows should be provided. Relocation should be avoided wherever possible; where unavoidable, it must follow prior consultation and agreement with affected groups.

Mobility changes should build on existing walking behaviour, but ensure that sidewalks are continuous, shaded, and safe, with clear crossings. Encouraging walking without addressing heat, obstructions, or safety risks increasing daily burden rather than reducing it. Pick-up and drop-off arrangements for app-based transport should be clearly defined to reduce confusion and street-level conflict. These measures reinforce trust by demonstrating that KRE Terpadu improves everyday conditions rather than disrupting them.

In Dukuh Atas, the focus should include strengthening existing adaptations and improving coordination. Dukuh Atas already functions as a high-intensity transit and employment hub, where many users, particularly online motorbike taxi drivers, couriers, and commuters have developed informal adaptations to recent transport restrictions to help manage congestion and time pressure. The priority in Dukuh Atas should be to recognise and formalise some of these existing adaptations, such as priority spaces for non-app-based motorcycle taxis closer to public transit entrances and designating small areas of pedestrian zones for street sellers, rather than introducing rigid controls that may undermine earning capacity.

Livelihood impacts in Dukuh Atas are driven primarily by movement efficiency. Rerouting distances should therefore be kept short, clearly marked, and tested on-site with users before full implementation. Pick-up, drop-off, and waiting areas for informal and app-based transport should be clearly defined and coordinated across agencies to avoid overcrowding and enforcement conflicts.

First- and last-mile connections to MRT, TransJakarta, and feeder services should be improved so that mode shifts do not add time, cost, or effort. Compliance requirements, such as emission testing or vehicle restrictions must be accessible and low-burden, recognising that many drivers operate with little financial buffer. In Dukuh Atas, coordination across OPDs is particularly critical to ensure that access, enforcement, and transport planning send consistent signals to users.



Table 2. Practical application of the policy recommendations in Blok M and Dukuh Atas

Policy Strategy	Practical Application of the Policy Recommendations in Blok M and Dukuh Atas	Related Feasibility Study Actions	Feasibility Domains
<p>Treat livelihood protection as a core strategy</p>	<ol style="list-style-type: none"> 1. Identify activities that depend on daily access and movement, including street vendors, motorbike taxi and courier drivers, and parking attendants. 2. Consult on and formally agree on vendor locations and pick-up points before enforcement begins. 3. Design streets and zones to maintain vendor visibility and pedestrian flow, rather than relocating vendors to less viable areas. 4. Provide clear time windows for logistics and restocking activities. 5. Avoid relocation where possible; where unavoidable, carry it out only after prior consultation and agreement with affected groups. 	<ul style="list-style-type: none"> • Identify the most vulnerable groups to KRE Terpadu and potential impacts in the selected zone • Prioritize equity & community participation • Develop a minimum standard of inclusive KRE Terpadu • Establish just transition financial incentives for green transitions • Support MSME green transitions • Implementation of traffic demand management (MKLL) / vehicle restriction in LEZ • Provide Incentives for renewable energy Installations • Provide Incentives for energy-efficient appliances • Construct district cooling plants • Integrate Green & Blue Infrastructure 	<p>Social & Equity, Finance, Transport, Energy, Land Use</p>

<p>Design mobility changes around daily burdens</p>	<ol style="list-style-type: none"> 1. Encourage walking only where sidewalks are continuous, shaded, and safe, with clear and usable crossings. 2. Keep rerouting distances for drivers short, clearly marked, and tested with users before full implementation, especially where income depends on trip volume. 3. Clearly define pick-up and drop-off points for informal and app-based transport to reduce confusion and street-level conflict. 4. Improve first and last-mile connections to MRT, TransJakarta, and feeder services so mode changes do not add time or effort. 5. Test proposed mobility changes on-site with users before full rollout to identify and fix problems early. 	<ul style="list-style-type: none"> • Implementation of traffic demand management (MKLL) / vehicle restriction in LEZ • Promote active & public mobility via infrastructure • Prioritize safety and affordability solutions in mobility • Prioritize equity & community participation 	<p>Social & Equity, Transport</p>
<p>Apply phased and supportive compliance</p>	<ol style="list-style-type: none"> 1. Begin with early explanation and socialisation using simple language and clear timelines. 2. Introduce a trial period during which people can comply without penalties. 3. Roll out enforcement gradually and apply rules consistently rather than suddenly. 4. Provide advance notice of enforcement dates and grace periods for first-time non-compliance. 5. Offer clear and accessible channels for complaints and clarification during the transition. 	<ul style="list-style-type: none"> • Prioritize equity & community participation • Implementation of traffic demand management (MKLL) / Vehicle Restriction in LEZ • Establish a monitoring mechanism that encourages meaningful public participation 	<p>Social & Equity, Transport</p>

<p>Use public communication as a strategic tool</p>	<ol style="list-style-type: none"> 1. Prepare a preliminary public communication and outreach plan for each KRE Terpadu site. 2. Explain planned changes and timelines using simple language and visual materials. 3. Prioritise face-to-face communication through Kelurahan, RT/RW, vendor leaders, and driver coordinators. 4. Conduct two-way consultation sessions before final decisions are made. 5. Publicly explain how community feedback has influenced final design and implementation choices. 	<ul style="list-style-type: none"> • Prioritize equity & community participation • Promote active & public mobility via infrastructure 	<p>Social & Equity</p>
<p>Ensure predictable and consistent enforcement</p>	<ol style="list-style-type: none"> 1. Appoint a single coordinating authority to lead and oversee KRE Terpadu enforcement. 2. Apply unified enforcement guidelines across all relevant OPDs to avoid mixed signals. 3. Communicate enforcement stages and timelines publicly and well in advance. 4. Ensure equal treatment across all user groups, without selective enforcement. 5. Monitor enforcement practices on the ground and correct inconsistencies early. 	<ul style="list-style-type: none"> • Create a cross-sector task force or utilize existing task force, Governor as a CHAMPION • Prioritize equity & community participation • Provide budget to departments for enforcement 	<p>Governance. Social & Equity</p>

<p>Monitor equity impacts and adjust early</p>	<ol style="list-style-type: none">1. Regularly monitor income impacts, travel time, safety, and access for affected groups.2. Track spillover effects such as traffic, noise, and congestion in surrounding neighbourhoods.3. Provide simple and accessible feedback mechanisms for communities to report issues.4. Make periodic adjustments to design and enforcement based on monitoring results.5. Publicly report changes made and explain why, to demonstrate accountability and responsiveness	<ul style="list-style-type: none">• Develop a minimum standard of inclusive KRE Terpadu• Establish a monitoring mechanism that encourages meaningful public participation• Promote active & public mobility via infrastructure• Provide budget to departments for enforcement	<p>Social & Equity, Governance</p>
--	---	--	--



Conclusion

This assessment demonstrates that Jakarta's ambition to improve air quality through KRE Terpadu is widely supported. Across Blok M and Dukuh Atas, people clearly recognize the importance of cleaner air for health and well-being. However, the findings also show that **public support is conditional**. Acceptance declines when implementation disrupts daily mobility, undermines livelihoods, or is introduced through unclear rules and uneven enforcement. For informal workers, drivers, small traders, and low-income commuters, even minor changes in access, routes, or waiting time can translate into immediate income loss. **These realities make equity not a secondary concern, but a determining factor in whether KRE Terpadu succeeds.**

The assessments highlight that environmental objectives alone are insufficient to ensure compliance. What ultimately shapes public response is **how KRE Terpadu is implemented**: whether people understand the policy, whether they are given time to adjust, whether rules are predictable,

and whether daily effort and income risks are minimized. Across both locations, people expressed willingness to adapt when changes are phased, communicated clearly, and designed around lived realities. Resistance arises not from opposition to cleaner air, but from uncertainty, sudden enforcement, and fear of economic harm.

Several priorities emerge as critical for equitable and effective implementation. **Livelihood protection must be treated as a core strategy**, not as mitigation after impacts occur. Planning must identify activities that depend on access, movement, and visibility, and stabilise these conditions before enforcement begins. **Mobility changes must reduce total daily burden**, accounting for time, cost, safety, effort, and dignity, rather than simply redirecting movement or congestion. **Phased and supportive compliance**, beginning with early socialisation, trial periods, and gradual enforcement are essential to protect vulnerable groups and build trust. **Public communication must function as implementation infrastructure**, using simple language, visual materials, and trusted local channels to explain not only what will change, but why and how decisions were made. Finally, **predictable and consistent enforcement**, supported by a clear coordinating authority and continuous equity monitoring, is central to perceived fairness and long-term legitimacy.

Importantly, this report shows that Jakarta does not need to build new systems to deliver an inclusive KRE Terpadu. Existing mechanisms such as Musrenbang, Kelurahan and RT/RW networks, OPD coordination structures, and partnerships with civil society provide a strong foundation for embedding equity into routine planning and delivery. The site-specific applications developed for Blok M and Dukuh Atas, supported by practical action tables, demonstrate how policy principles can be translated into concrete steps using systems that communities already know and trust.

KRE Terpadu presents an opportunity not only to improve air quality, but also to demonstrate that climate action in Jakarta can be fair, predictable, and respectful of daily life and improve it for everyone. **By embedding equity into communication, mobility design, livelihood protection, compliance, and governance, KRE Terpadu can become a model for inclusive climate action, one that delivers cleaner air while strengthening public trust and social resilience across the city.**

Annex 1

A. Cross-Cutting Actions

Equity Issue Identified	Why this matters for equity	What should be done	Rationale	Key Stakeholders
Planning detached from lived experience	Participation & Power	Make participatory planning mandatory before final design	Helps avoid KRE Terpadu designs that look good on paper but do not match how people actually move, work, and wait in Jakarta's neighbourhoods. Making participation mandatory ensures everyday realities — such as informal vending spots, school routes, and pick-up points — are considered early, rather than fixed only after problems appear	Bappeda, DLH, NGOs
Livelihood risks treated as secondary	Livelihoods & Small Business	Embed livelihood protection as a formal KRE Terpadu objective	Recognises that in Jakarta, many people earn a living through street access, visibility, and tight daily schedules. Making livelihood protection a clear part of KRE Terpadu helps ensure cleaner air does not come at the cost of lost income or push informal workers out of places where they can survive.	Governor's Office, Bappeda
Behaviour change expected too early	Access & Mobility	Deliver crossings, shade, lighting before restrictions	Avoids policies that assume people can immediately shift travel behaviour without supportive infrastructure. Delivering crossings, shade, and lighting first reflects Jakarta's heat, safety risks, and uneven sidewalks, ensuring behaviour change is enabled rather than demanded.	Dishub, Bina Marga, Pertamanan
Fragmented enforcement	Implementation Fairness	Assign one clear lead agency for KRE Terpadu	Addresses confusion caused by overlapping mandates and inconsistent practices across agencies. A single lead authority reduces mixed signals, uneven penalties, and discretionary enforcement—key drivers of fear and distrust among frontline groups.	Governor / Sekda

<p>Risk of displacement to adjacent areas</p>	<p>Exposure & Health</p>	<p>Monitor and mitigate spillover traffic and pollution</p>	<p>Helps stop pollution, traffic danger, and enforcement pressure from simply moving into nearby lower-income neighbourhoods. Tracking where problems shift over time helps protect communities that do not directly benefit from KRE Terpadu but often end up dealing with the consequences first.</p>	<p>Bappeda, DLH, Dishub</p>
<p>Low trust in government messaging</p>	<p>Inclusivity; Information</p>	<p>Use visual, multilingual, local communication</p>	<p>Responds to long-standing scepticism caused by top-down announcements and sudden rule changes. Sharing clear information through Kelurahan meetings and other trusted local channels helps people understand the rules and feel more confident that KRE Terpadu is being applied fairly.</p>	<p>DLH, Kominfo, Kelurahan</p>

Annex 2

A. Location-Specific Actions: Blok M

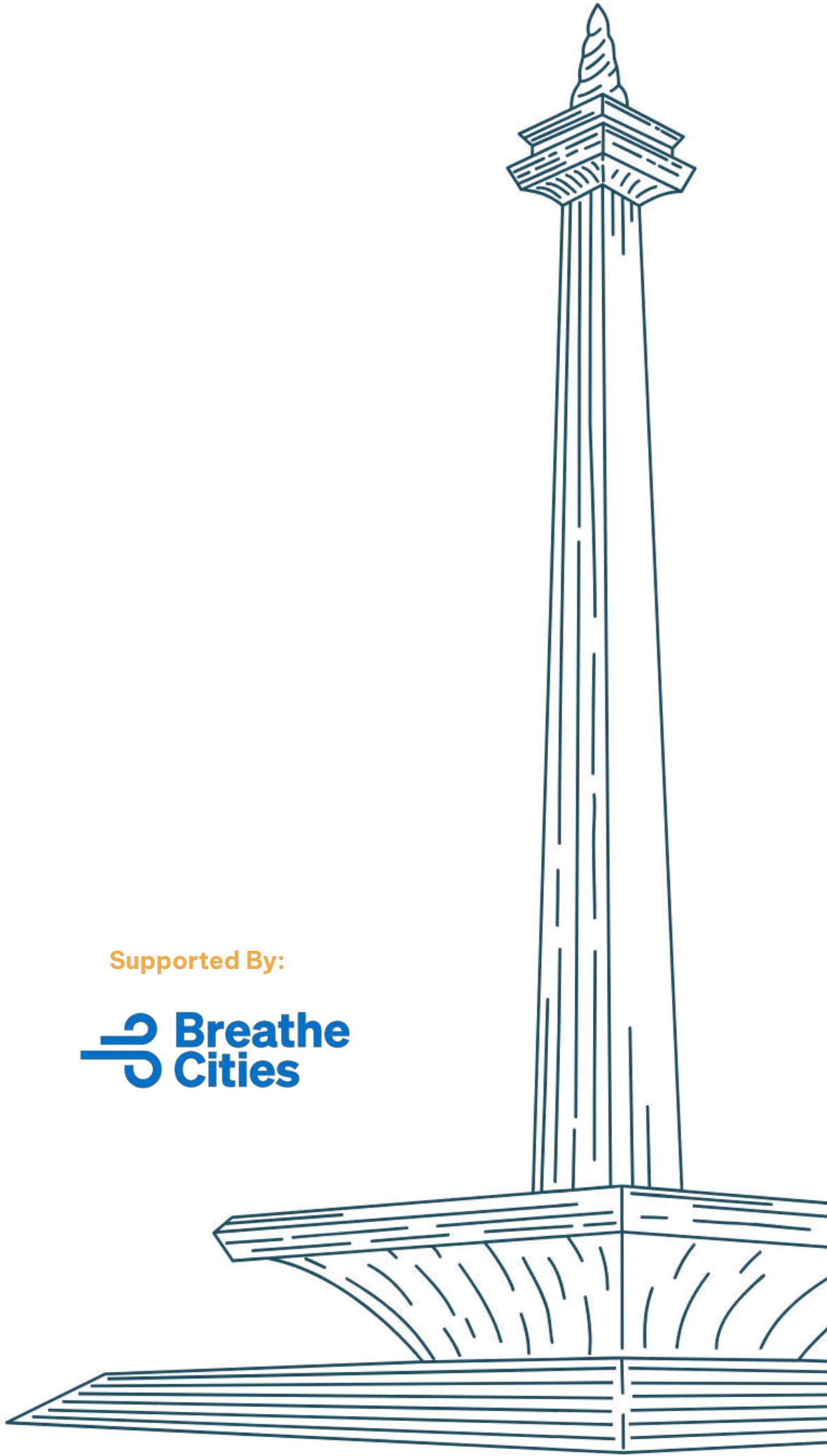
Equity Issue Identified	Why this matters for equity	Who is most affected	What should be done	Rationale	Key Stakeholders
Vendor income loss from relocation	Livelihoods & Small Business	Street vendors, UMKM, restaurant workers	Set vendor-protection rule: ≤ 150 m relocation, guaranteed line-of-sight visibility from main footfall	Prevents immediate livelihood shocks for informal vendors who rely on daily footfall and have no savings or contracts. In Blok M, visibility and proximity, (not rent or signage) determine income. This ensures environmental improvements do not shift economic risk onto informal workers.	DLH, Dishub, Kecamatan, vendor representatives
Fear of unfair decisions and lack of recourse	Participation & Power	Vendors, informal workers, women workers	Co-design vendor zones and layouts; establish simple grievance and appeal mechanism	Addresses long-standing distrust caused by opaque decision-making and informal enforcement. Co-design and grievance pathways reduce rumours and power imbalance	Kecamatan, Kelurahan, vendor leaders, NGOs
Unsafe crossings near schools and residential areas	Access & Mobility; Public Space & Safety	Children, women caregivers, older adults, PWDs	Install zebra crossings and traffic calming at lived routes, not only arterial roads	Reflects how people actually move in Blok M: short, frequent trips along neighbourhood routes rather than formal arterials. Protects children, caregivers, and older adults who cannot reroute or move quickly, reducing daily exposure to traffic risk.	Dishub, schools, RT/RW, Satpol PP

Motorbike shortcuts through neighbour hood alleys	Exposure & Safety	Children, elders, residents in peripheral streets	Community-agreed restrictions on motorbike shortcuts with clear signage	Prevents traffic danger and pollution from being displaced into residential streets when main corridors are restricted. Protects children and elders in areas where enforcement is weaker and exposure risks are otherwise concentrated.	RT/RW, residents, Dishub
Heat and fatigue discouraging walking	Access & Mobility; Health	Older adults, women caregivers, outdoor workers	Add shade, seating, and rest points every 150–200 m on key routes	Recognises Jakarta’s heat, humidity, and uneven sidewalks, which make walking physically demanding. Shade and rest points turn walking into a realistic option for older adults, caregivers, and outdoor workers, this is avoiding policies that benefit only young people and fit.	Dinas Pertamanan, Dishub
Low understanding of pollution and KRE Terpadu rules	Inclusivity; Information Access	Vendors, low-income commuters, caregivers	Simple, repeated communication via local channels (WA groups, Kelurahan meetings)	Counters fear, misinformation, and disengagement caused by unclear or one-off announcements. Repeated communication through trusted local channels ensures rules are understood equally, reducing unequal enforcement driven by misunderstanding.	DLH, Kelurahan, RT/RW, kader
Anxiety about sudden enforcement	Implementation Fairness	All frontline groups	Phase implementation: socialisation - trial - enforcement	Responds to Jakarta’s history of abrupt rule changes and punitive enforcement. Phased implementation respects people’s need to adapt livelihoods and routines, preserving dignity and trust while encouraging voluntary compliance.	Governor’s Office, Dishub, Satpol PP

B. Location-Specific Actions: Dukuh Atas

Equity Issue Identified	Why this matters for equity	Who is most affected	What should be done	Rationale	Key Stakeholders
Income loss from rerouting	Livelihoods & Small Business	Motorbike taxi drivers, logistics riders, informal workers	Limit detours to ≤ 300 m; test routes with drivers before rollout	Protects daily earnings in a location where income is time-based and tightly scheduled. Even short detours reduce trip volume for drivers, directly cutting income. Limiting detours prevents climate policy from becoming an income penalty.	Dishub, driver associations
Uncertainty over pick-up and waiting spaces	Participation & Power	Motorbike taxi and courier drivers	Co-create official pick-up and staging zones near demand points	Reduces daily stress, competition, and informal conflict among drivers. Clear, co-designed pick-up zones improve predictability in a high-intensity transport hub where uncertainty directly affects earnings and safety.	Dishub, driver groups, platform companies
Avoidance of unsafe streets at night	Public Space & Safety	Drivers, night-shift workers	Upgrade lighting and security on identified risk corridors	Prevents safety risks from being shifted onto night-shift and long-hour workers who cannot avoid travel. Improved lighting and security protect those with the least flexibility and highest exposure.	Bina Marga, Dishub, local security units
Compliance costs for emission rules	Implementation Fairness; Affordability	Individual drivers, small couriers	Provide mobile, free emission testing near driver hubs	Make sure environmental rules do not become an economic barrier for individual drivers and small couriers. Free, mobile testing recognises tight daily incomes and helps people comply without losing earnings.	DLH, Dishub

Fear of sudden fines	Implementation Fairness	Drivers, informal workers	Publish clear enforcement timeline with grace periods	<p>Responds to long-standing anxiety caused by uneven enforcement in the past.</p> <p>Clear timelines and grace periods help people trust the process and follow the rules without fear of sudden penalties.</p>	DLH, Dishub, Satpol PP
Uneven impacts within driver groups	Equitable Impact	Older drivers, low-income drivers	Monitor income and cost impacts; adjust design if harm emerges	<p>Recognises that older and lower-income drivers find it harder to absorb change.</p> <p>Regular monitoring and small design adjustments help ensure the transition does not place heavier burdens on those who already have less flexibility.</p>	Bappeda, DLH, NGOs



Supported By:

