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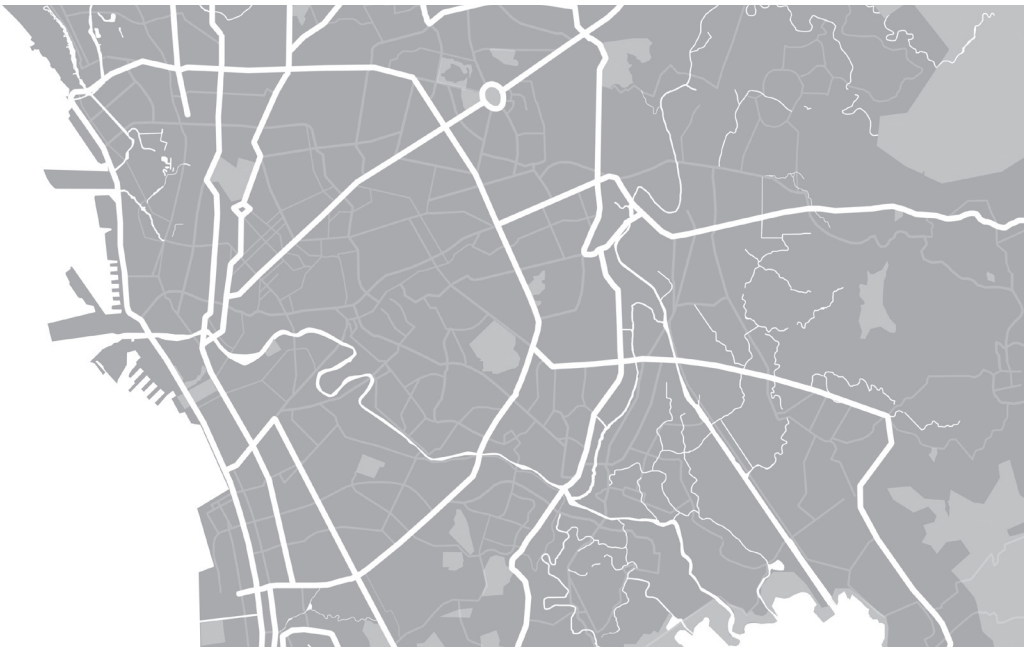

Figure 1: Map of Metro Manila (OpenStreetMap, 2025)

Assessing the Viability of the 15-Minute City Model in Metro Manila

By Anna Mae Yu Lamentillo

ABSTRACT

Metro Manila's rapid urbanization and socio-spatial fragmentation pose significant challenges to equitable development, particularly regarding access to essential services. This study explores the feasibility of the 15-minute city concept as a potential framework for enhancing urban mobility, accessibility, and quality of life across three distinct urban typologies—informal settlements, inner-city districts, and outer suburbs. Drawing on UN-Habitat definitions (2016), these typologies vary greatly in population density, floor area ratio, and dwelling sizes, necessitating tailored strategies for each context.

Short-term (0–2 years) measures emphasize foundational improvements, such as participatory land-use planning in informal areas to secure interim occupancy agreements and implement basic infrastructure. In inner-city cores—characterized by mixed commercial, residential, and institutional uses—pilot programs for car-free weekends and pop-up bike lanes seek to mitigate congestion and improve walkability. Outer suburbs, which often exhibit low-density sprawl and a reliance on private vehicles, benefit from flexible zoning and "pocket hubs" for local commerce. Medium-term (3–7 years) initiatives focus on deeper structural changes, including in-situ upgrading of informal settlements, expanded multimodal public transit in inner cities, and transit-oriented development in suburban areas. Over the long term (8+ years), these efforts evolve into formalized, climate-adaptive communities featuring robust transportation networks, inclusive zoning reforms, and sustainable building standards.

The findings underscore the importance of a phased, context-specific approach. By tailoring interventions to each typology's strengths and constraints—and ensuring sustained collaboration among government agencies, local stakeholders, and the private sector—Metro Manila can gradually transition to a more inclusive, resilient, and efficient metropolis aligned with the 15-minute city vision.

I. INTRODUCTION

A. Metro Manila's Urban Landscape

Metro Manila, a megalopolis of over 13 million residents (Philippine Statistics Authority, 2021), has experienced remarkable urban transformations over the past century (Lamentillo, 2024). Once supported by an extensive network of railways and pedestrian corridors (Williams, 1899; Wright, 1909; Linn, 2019), the metropolis has evolved into a predominantly car-centric environment (Boquet, 2013; Nielsen, 2014). This shift has significantly reshaped spatial structures and mobility patterns (JICA, 2014), contributing to challenges such as severe traffic congestion—costing the average resident 117 hours annually (Tomtom, 2024)—and a high pollution index score of 89.9 (Numbeo, 2024).

Demographic variations across the region further complicate Metro Manila's urban fabric. While Quezon City hosts nearly 2.96 million residents, the capital city of Manila, with 1.85 million people, registers the highest population density—about 73,920 individuals per square kilometer (Philippine Statistics Authority, 2023). In stark contrast, Pateros, the region's only municipality, has a population of roughly 65,000 and a much lower density of around 6,270 persons per square kilometer (Philippine Statistics Authority, 2021). These imbalances manifest in differing demands for infrastructure, public services, and land use.

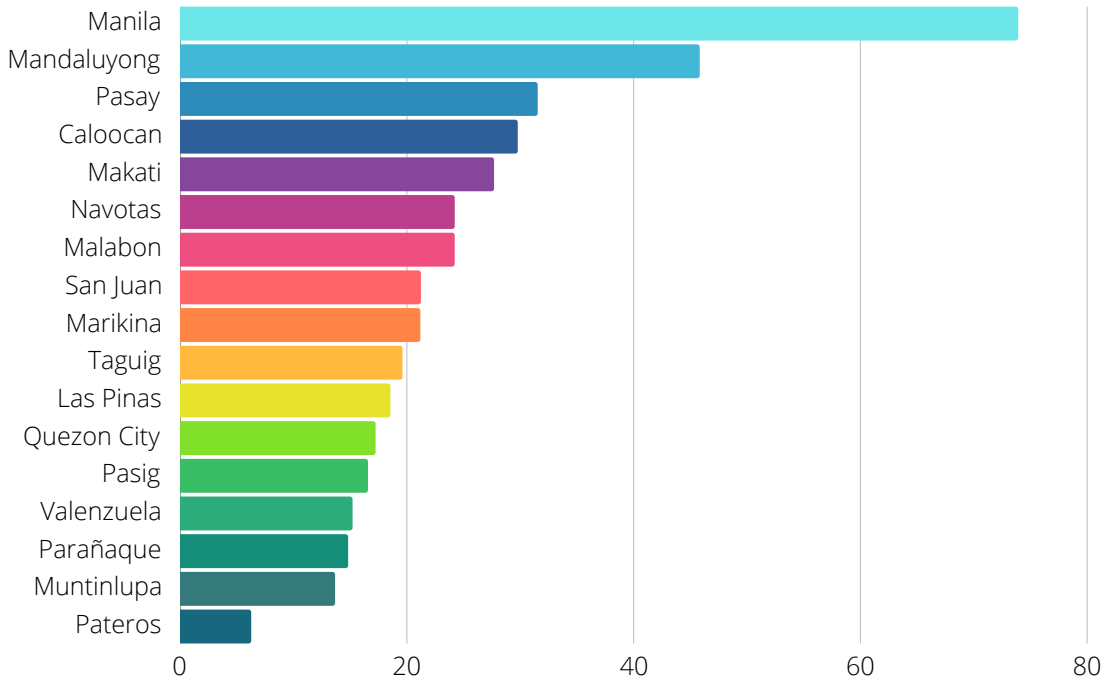

Figure 2: Population density in Metro Manila, Philippines, 2020, by city and municipality (Philippine Statistics Authority, 2023)

Despite its uneven development, Metro Manila remains an economic powerhouse. In 2023, the National Capital Region (NCR) posted expenditures on Gross Regional Domestic Product amounting to approximately 6.57 trillion Philippine pesos out of the nationwide total of 21.05 trillion (Philippine Statistics Authority, 2024). Per capita gross domestic expenditure in the NCR rose consistently between 2012 and 2020, reaching about 462,000 Philippine pesos in 2023—a figure that underscores a gradual recovery from the COVID-19 pandemic (Philippine Statistics Authority, 2024). Yet social services have not kept pace, as only 29% of Filipinos reported satisfaction with public healthcare, reflecting broader issues of accessibility and equity (Sandpiper Communications, 2022).

Against this backdrop, the 15-minute city concept offers a strategic response to Metro Manila's complexity. By localizing essential services—such as healthcare, education, and commerce—within a short walk or bike ride, the model aims to reduce car dependence, enhance community resilience, and improve overall quality of life. Adapting the 15-minute city framework could address the region's pressing concerns regarding congestion, pollution, and equitable access to basic services. Tailoring these principles to Metro Manila's diverse districts—ranging from densely built urban cores to low-density suburbs—holds the potential to foster a more inclusive, livable, and sustainable metropolitan future.

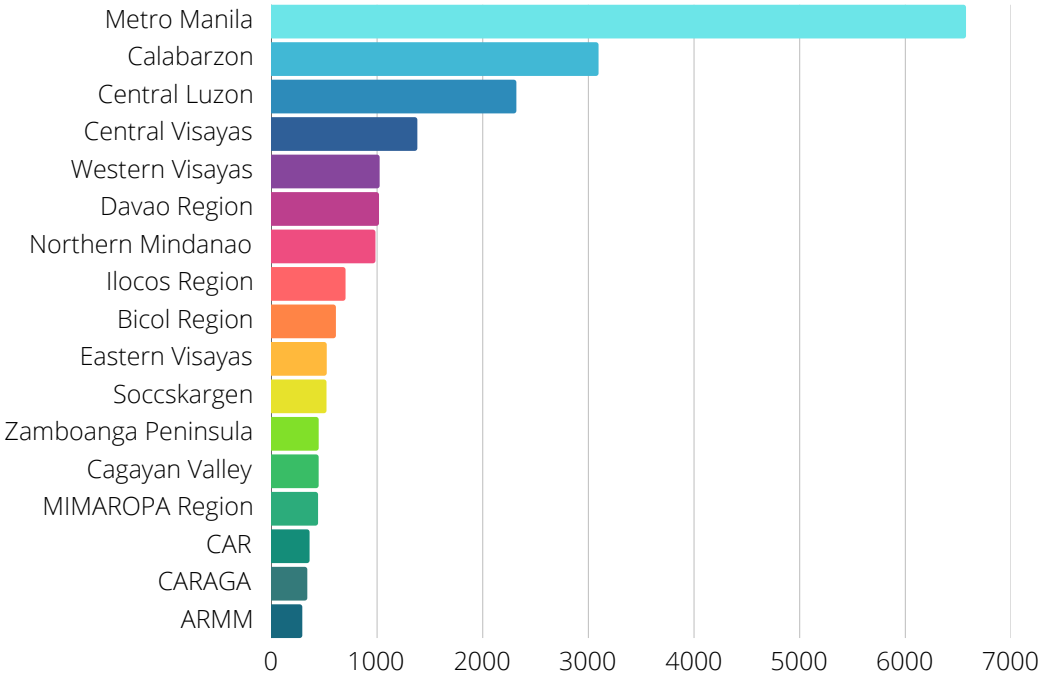

Figure 3: Gross Domestic Expenditures, 2023, by region (Philippine Statistics Authority, 2024)

B. History of Metro Manila

Metro Manila's early urban planning prioritized rail-based connectivity, with the Manila and Dagupan Railroad operational as early as 1875 (Williams, 1899; Linn, 2019). By the 1930s, the Manila Railroad Company managed over 1,140 kilometers of track, facilitating efficient intermodal transportation and compact urban development (Boquet & Boquet, 2017). However, the rise of private vehicle ownership in the mid-20th century signaled a dramatic shift in urban priorities (Boquet, 2013). Cars became cultural symbols of progress and success, leading to reduced investment in railways and the prioritization of road networks (Nielsen, 2014). This transition resulted in urban sprawl, increased reliance on automobiles, and the decline of sustainable transport options (Daguio, 2016; Lamentillo, 2021).

The consequences of this car-centric paradigm have been far-reaching. Metro Manila ranked as the world's most congested metropolitan area in 2023, with residents losing an average of 117 hours annually to rush-hour traffic, according to the TomTom Traffic Index (2024).

Traffic congestion alone costs the region approximately PHP 3.5 billion daily (CNN, 2018), while Manila's pollution index score of 89.9 in 2023 underscores its status as one of the most polluted cities in the Asia-Pacific region (Numbeo, 2024). Air pollution contributes to an estimated 27,000 premature deaths annually (Farrow, Miller, and Myllvirta, 2020), with studies attributing 65% of the region's air pollutants to mobile sources (Department of Environment and National Resources, 2019), highlighting the environmental and public health toll of automobile reliance. These challenges are further reflected in public dissatisfaction with essential services, such as healthcare. In a 2021 survey, only 29 percent of Filipinos expressed satisfaction with the country's public healthcare system, significantly lower than the APAC average of 61 percent and Singapore's 82 percent (Sandpiper Communications, 2022). Such disparities disproportionately affect residents in lower socio-economic brackets, particularly those in informal settlements, where limited access to transportation and inadequate services restrict mobility and exacerbate social inequities.

Recent government initiatives, such as the Metro Manila Subway and the North-South Commuter Railway, highlight a renewed focus on improving urban mobility in Metro Manila (Lamentillo, 2021). These large-scale infrastructure projects aim to address long-standing transportation issues in the region. However, their implementation has faced significant delays, limiting their immediate impact. For instance, the Metro Manila Subway Project (MMSP), a P488.48-billion venture hailed as the "Project of the Century," was initially slated to begin operations in 2021 (Cabuenas, 2024). As of August 2024, the project has achieved only 16% physical progress, primarily in civil engineering works, according to the Department of Transportation (Cabuenas, 2024).

Despite these efforts, Metro Manila continues to grapple with challenges stemming from its high population density, fragmented urban fabric, and inequitable access to transportation and essential services. These ongoing issues emphasize the need to explore alternative urban planning models, such as the 15-minute city concept. This model offers a localized and equitable approach to urban development by ensuring that essential services and opportunities are accessible within a 15-minute walk or bike ride, presenting a potential framework for addressing Metro Manila's persistent mobility and accessibility challenges.

C. Consultancy Question

The 15-minute city concept has emerged as a theoretical framework to tackle these challenges. This model emphasizes reducing spatial inequities by ensuring residents can access essential services—such as education, healthcare, and employment—within a 15-minute walk or bike ride. In Metro Manila, the concept presents opportunities to explore mixed-use development, enhanced pedestrian and cycling infrastructure, and the restoration of public transportation networks. However, implementing the 15-minute city requires careful consideration of Metro Manila's unique socio-economic and spatial complexities.

Key issues must be addressed to evaluate the feasibility of this model. Metro Manila's fragmented urban fabric, characterized by a mix of formal and informal settlements, poses significant challenges for equitable infrastructure development. Informal areas often lack access to public services and sustainable transport, necessitating targeted interventions. Additionally, the historical prioritization of private vehicles has entrenched inefficiencies that require substantial investment to reverse. While projects such as the Metro Manila Subway and the North-South Commuter Railway signal progress, their success depends on integration with pedestrian and cycling networks to maximize accessibility.

This study seeks to investigate how the 15-minute city concept can be adapted to Metro Manila to improve urban mobility, accessibility to essential services, and residents' quality of life. It focuses on identifying elements of the concept that align with Metro Manila's urban conditions and those requiring significant adjustments. The study also aims to assess stakeholder perceptions and evaluate the feasibility of applying the concept to Metro Manila's diverse urban typologies: outer suburbs, informal areas, and inner-city districts. Each typology presents distinct characteristics that will shape how the 15-minute city can be effectively implemented.

For the purposes of this study, we will adhere to the definitions provided by UN-Habitat for the urban typologies of semi urban area, informal settlements, and inner-city districts and focus on three qualifiers, namely population density, floor area ratio, and dwelling sizes (UN Habitat, 2016).

Informal settlements are unplanned urban areas characterized by dense, irregular development, inadequate zoning, and limited access to basic services like sanitation, electricity, and clean water. These areas often have high population densities, with small dwelling sizes averaging 20 square meters and low Floor Area Ratios (FAR), despite overcrowding. (UN Habitat, 2016) Public and private spaces are poorly defined, with building coverage often exceeding 50% of the area. (UN Habitat, 2016)

An inner city refers to a high-density urban core characterized by a mix of residential, commercial, and institutional uses, often serving as the economic and cultural hub of a metropolis. Dominated by typologies such as blocks, densified blocks, and mixed or redeveloped areas, inner cities balance high population density and efficient land use. (UN Habitat, 2016)

D. Research Design and Methodology

A mixed-methods approach will be employed for this research, combining qualitative and quantitative data collection methods. In-depth interviews with experts, government officials and local stakeholders, including urban planners, policymakers, and community leaders, will provide insights into the global applicability of the 15-minute city concept. Focus groups with key stakeholders, such as residents and civil society representatives, will facilitate dynamic discussions about the concept's feasibility. Participant observation during these sessions will capture non-verbal cues and group dynamics, enriching the qualitative data.

Additionally, surveys will be used to gather quantitative data from 420 respondents across Metro Manila's urban typologies, focusing on public perceptions, mobility patterns, and accessibility needs. The sample will be

distributed across Metro Manila's urban typologies to ensure representativeness: 140 respondents each from inner-city districts, informal areas, and outer suburbs.

The data will be analyzed using NVivo for thematic and narrative analysis, and Stata for processing quantitative data from the survey. NVivo will facilitate the identification of recurring patterns and themes across interviews and focus groups, providing structured insights into stakeholder attitudes and barriers through thematic analysis. It will also support narrative analysis by uncovering cultural and experiential factors influencing the applicability of the 15-minute city model. Quantitative data from the survey will be processed and analyzed using Stata, allowing for the identification of trends, preferences, and relationships within public opinion. With a sample size of 420 respondents, the margin of error is approximately ±4.8%, which may limit the precision of survey findings. Logistical challenges and resource constraints, particularly in accessing informal settlements and ensuring broad representation, further underscore potential gaps in capturing Metro Manila's diverse contexts. Additionally, insights from stakeholder mapping will offer a detailed understanding of the relationships between key actors, their interests, and areas for collaboration or conflict. This approach ensures a comprehensive and systematic analysis of both qualitative and quantitative data while acknowledging potential limitations.

The final phase of the study involves strategy planning to translate findings into actionable recommendations. Stakeholder mapping will guide the prioritization of initiatives, aligning strategies with the needs and influence of key actors. A logic model will be developed to establish clear relationships between resources, activities, outputs, and outcomes, providing a structured framework for evaluating the feasibility and potential impact of proposed strategies.

By analyzing historical trends, socio-economic factors, and contemporary policy initiatives, this research aims to offer actionable insights into the adaptation of the 15-minute city concept in Metro Manila. The findings may also contribute to broader discussions on sustainable urban development in Southeast Asia, providing a blueprint for other regions facing similar challenges.

II. CONCEPT AND LEARNING FROM INTERNATIONAL CASES

Overview of the 15-minute city paradigm

The 15-minute city model, conceptualized by Carlos Moreno (2016), reimagines urban living by prioritizing proximity (Ferrer-Ortiz, Marquet, and Vich, 2022), accessibility, and multiservice neighborhoods where residents can meet daily needs within a 15-minute walk or bike ride. Rooted in historical urban theories, this model synthesizes principles from Ebenezer Howard's early 20th-century "garden cities," which emphasized self-sufficient communities (1902), and Jane Jacobs' advocacy for mixed-use, walkable neighborhoods in The Death and Life of Great American Cities (1961). Moreno's framework expands on these ideas by integrating temporal accessibility as a core metric, aligning with New Urbanism's emphasis on compact, human-scaled design and Smart Growth strategies to counter urban sprawl (Calthorpe, 1993; Jacobs, 1961).

Central to the 15-minute city are five interrelated elements. First, proximity (Ferrer-Ortiz, Marquet, and Vich, 2022) and density aim to reduce distances between essential services such as housing, workplaces, schools, and healthcare, fostering compact neighborhoods that minimize travel time. Second, mixed-use development ensures that residential, commercial, and civic functions coexist, creating vibrant, economically diverse communities. Third, active and public transport infrastructure—such as pedestrian pathways, cycling lanes, and efficient transit systems—replaces car dependency, reducing emissions and aligning with "complete streets" frameworks (NACTO, 2013). Fourth, a polycentric urban structure decentralizes services from a single city core to multiple hubs, promoting equitable access across neighborhoods. Finally, social equity and inclusivity prioritize affordable housing and accessible amenities for all demographics, countering risks of exclusion or displacement (Gould & Lewis, 2017).

A critical aspect of the 15-minute city is its focus on mobility, particularly in shifting away from the private automobile toward more sustainable modes like walking, cycling, and public transport. Scholars in transport studies underscore how integrated mobility systems, such as well-connected bus and rail lines, can close gaps in accessibility (Banister, 2008). By coupling pedestrianized streets with reliable mass transit, the 15-minute city provides an alternative to prevailing car-centric models, thus mitigating traffic congestion and cutting greenhouse gas emissions (Newman & Kenworthy, 2015).

Case Studies from the Global North

Recent case studies in the Global North offer compelling examples of how theoretical frameworks around livable and sustainable urban environments can translate into real-world solutions. Paris, under Mayor Anne Hidalgo, stands out for championing the "15-minute city" concept—advocated by Carlos Moreno—where essential services are clustered within short walking or cycling distances. This approach gained momentum through the rapid introduction of "coronapistes" during the COVID-19 pandemic (Reid, 2020), which were initially temporary but have since become permanent fixtures (Moreno et al., 2021). By aggressively expanding bike lanes, reconfiguring road space, and introducing limited car zones, Paris has demonstrated how concerted political will can catalyze transformative urban change. The city's investment in active mobility and public spaces dovetails with Barcelona's Superblocks, which similarly restrict vehicular access to encourage walking and cycling, reclaiming neighborhood streets for pedestrian use (Ferrer-Ortiz, Marquet, and Vich, 2022).

Beyond these, Melbourne and Copenhagen exemplify how thoughtful planning and community engagement can reinforce a people-centric urban landscape. Melbourne's revitalization of its once-overlooked laneways into vibrant cultural corridors showcases the power of incremental but strategic interventions (Nandapala, 2011 and Carrie-Mattimoe, 2021). Supported by policies that foster local businesses, encourage artistic expression, and enhance public transport connectivity, Melbourne's approach to 20 minute cities not only stimulates the local economy but also strengthens social cohesion (Stanley & Stanley, 2024). Meanwhile, Copenhagen's long-standing reputation as a bicycle haven (Emanuel, 2019) underscores the benefits of consistent, human-scaled planning (Colville-Andersen, 2018). Dedicated infrastructure—such as extensive bike lanes (Menny, Rodriguez, Ssekatawa, 2016) and "green wave" traffic signals (Warberg, Larsen, and Jorgensen, 2008)—reorients urban life toward healthier and more sustainable travel. With clean harbor waters that now accommodate recreational swimmers and new eco-friendly residential developments, Copenhagen exemplifies how innovation, inclusive design, and environmental stewardship can converge in a cohesive urban strategy (Ferrari & Fraser, 2012).

These initiatives underscore how urban form can evolve rapidly when political will aligns with strong policy directives and public buy-in. However, implementing the 15-minute city poses several challenges. Critics caution against gentrification if mixed-use development and improved walkability inflate property values, potentially displacing lower-income residents (Barton, 2009).

Case Studies from the Global South

While the 15-minute city concept originated largely in Global North contexts, it holds considerable promise for cities in the Global South, where rapid urbanization, informal settlements (Auerbach, LeBas, Post, et. al, 2018), and infrastructural deficits pose unique challenges (McFarlane, 2010. However, adaptation would require creative, inclusive, and context-sensitive approaches that address a complex interplay of social, economic, and environmental factors (Corburn, Asari, Perez Jamarillo, et. Al, 2020).

One major hurdle in the Global South is informality (Auerbach, LeBas, Post, et. al, 2018). In many cities, unplanned neighborhoods with limited infrastructure form a substantial part of the urban fabric (Revell, 2010). These areas typically lack secure land tenure (Basile and Ehlenz, 2020), drainage systems (Sultana, 2020), and reliable access to water or electricity (Mitlin, Beard, and Satterthwaite, 2019). Implementing the 15-minute city here involves more than establishing compact, walkable blocks; it necessitates in-situ upgrading that respects current residents (Huchzermeyer, 2009), prevents forced evictions (King, Orloff, Virsilas, et.al., 2017), and provides incremental improvements to housing quality and public amenities. By combining basic service provision such as shared sanitation facilities (Rusca, Alda-Vidal, and Kooy, 2018) with participatory planning, communities can be better integrated into the broader urban fabric. Scholars such as Parnell and Pieterse (2014) stress that addressing deep-rooted inequalities—such as lack of access to secure housing or reliable public services—is essential for equitable urban transformation.

The second hurdle is economic livelihoods (Skinner and Watson, 2017). In many Global South cities, the informal economy serves as the backbone for millions of workers who rely on street vending, home-based enterprises, or small-scale industries (Martinez and Short). Adapting the 15-minute city model must therefore account for local entrepreneurial activities by supporting microenterprise hubs and "market days," ensuring residents can conveniently shop, trade, and access services within their own neighborhoods (Martinez and Short, 2022). Affordable access to digital tools is also crucial: enabling mobile banking and e-commerce platforms can help these enterprises connect with broader markets while reducing travel distances (Hasselwander, 2024).

Another challenge is transportation infrastructure. While the 15-minute city emphasizes active mobility, many Global South cities face congestion and poorly maintained roads (McFarlane, 2010). Yet, innovations are emerging. Bogota's TransMilenio Bus Rapid Transit (BRT) system, for instance, has revolutionized urban mobility by dedicating exclusive lanes to public buses (Hidalgo, Pereira, Estupiñan, & Jimenez, 2013). Similarly, Kigali, Rwanda, has experimented with car-free days that encourage walking, cycling, and community events on public roads (Subramanian, Kagabo, Baharene, et.al, 2020. Both examples underscore the potential for low-cost, high-impact policies—such as tactical urbanism (Mould, 2014) and pilot projects (Peterson, 2012)—that reimagine streetscapes in favor of pedestrians and cyclists rather than private cars.

Despite these hurdles, success stories abound. Medellín, Colombia, transformed once-isolated informal settlements by creating a network of public libraries, escalators, and cable cars that link hillside barrios to the city center (Corburn, Asari, Perez Jamarillo, et. Al, 2020). This approach not only improved mobility but also provided spaces for education, cultural enrichment, and social interaction—essential tenets of the 15-minute city (Drummond, 2012).

However, the shift toward local, neighborhood-scale planning requires robust community engagement to ensure that interventions truly meet resident needs (Gehl, 2010). Residents' input is vital for determining which amenities should be prioritized and how streetscapes can be safely redesigned (Balassiano and Maldonado, 2015). Such participatory processes align with the concept of "placemaking," wherein social cohesion and cultural identity become integral to planning outcomes (Project for Public Spaces, 2016).

In summary, the body of literature on the 15-minute city paradigm reveals a concerted effort to align urban form and function with sustainability, public health, and social equity goals (Arku and Marais, 2021). By drawing on historical precedents like compact city (Dantzig and Saaty, 1973) and new urbanism doctrines (Calthorpe, 1993; Jacobs, 1961), researchers demonstrate how design interventions—ranging from pedestrian-oriented development (Sevtsuk, Kollar, Pratama, et. al, 2024) to integrated transit networks (Cervero, 2014)—can dramatically improve everyday accessibility. At the same time, studies emphasize the risks of uneven implementation, especially in contexts marked by socioeconomic disparity. This highlights the need for nuanced, context-sensitive strategies that prioritize inclusive growth. Ultimately, the 15-minute city's holistic approach to accessibility and mobility offers a compelling roadmap for urban planners and policymakers seeking to balance environmental imperatives with the lived realities of diverse urban populations.

III. LOCALISING THE CONCEPT IN METRO MANILA

A. Assessing the Feasibility of the 15-minute city concept

The feasibility of the 15-minute city concept in Metro Manila is increasingly evident but the shift will not be without challenges. A stakeholder analysis categorizes key players into supporters, opposition, and neutral parties. Supporters include commuters, young adults (18-29), older citizens (60+), urban designers, sustainability advocates, among others. Opposition comes mainly from fuel-dependent businesses, the automobile industry, real estate developers focused on car-centric projects, and politicians with ties to car-dependent industries. Neutral entities, such as local government units (LGUs), international development agencies, legislators, and private investors, have the potential to influence the outcome depending on policy directions and economic incentives.

To better understand public sentiment and gauge the practicality of implementing a 15-minute city in Metro Manila, we conducted a survey capturing diverse perspectives. The sample included 46% identifying as male, 47% as female, and 7% preferring not to disclose their sex. Respondents spanned five age brackets, ensuring generational insights. Primary occupations ranged from government officials and urban planners to business owners, residents (both professional and non-professional), civil society representatives, students, and journalists. Housing situations varied as well, with respondents either owning their homes, renting, living with relatives, staying in dormitories, residing in informal areas, relying on employer-provided housing, or living in government relocation sites. Geographically, participants were almost evenly distributed across inner cities (33%), informal areas (34%), and outer suburbs (33%), providing a balanced perspective on urban experiences and mobility challenges.

Figure 4: Stakeholder Mapping for Implementing the Blueprint for a 15-Minute City in Metro Manila

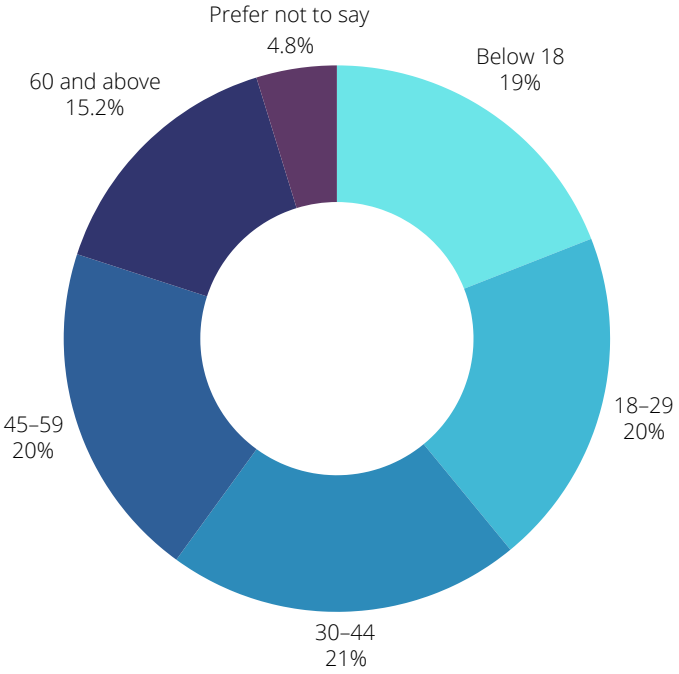

Figure 5: Age Group Breakdown of Survey Respondents

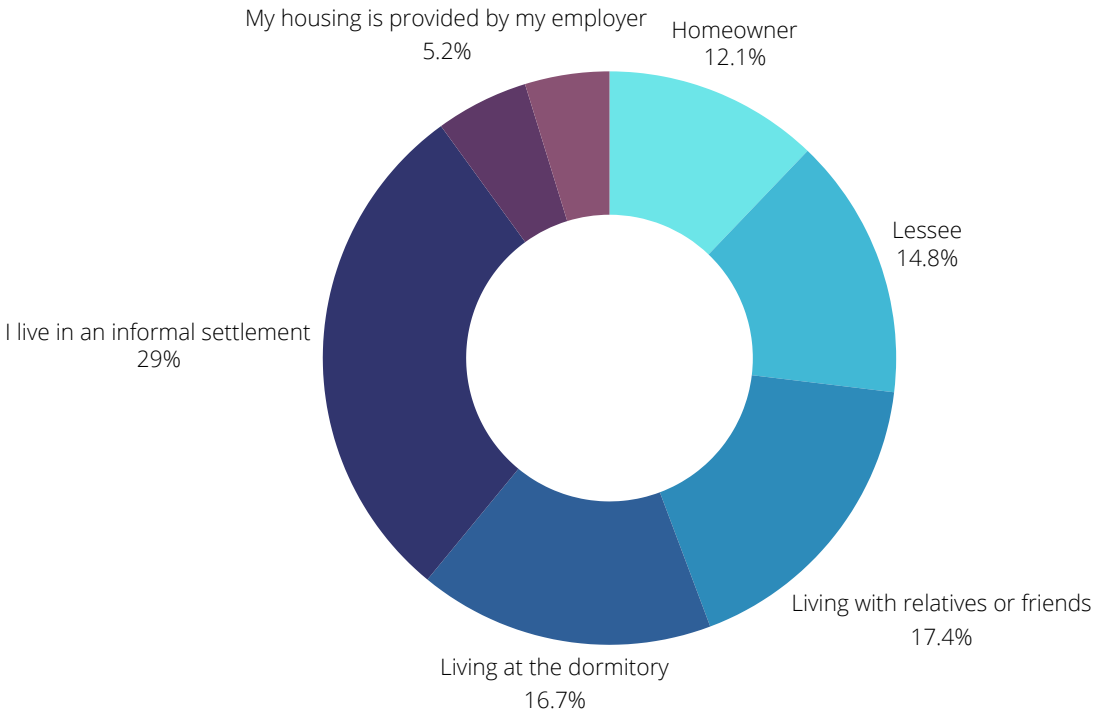

Figure 6: Housing Situation of Survey Respondents

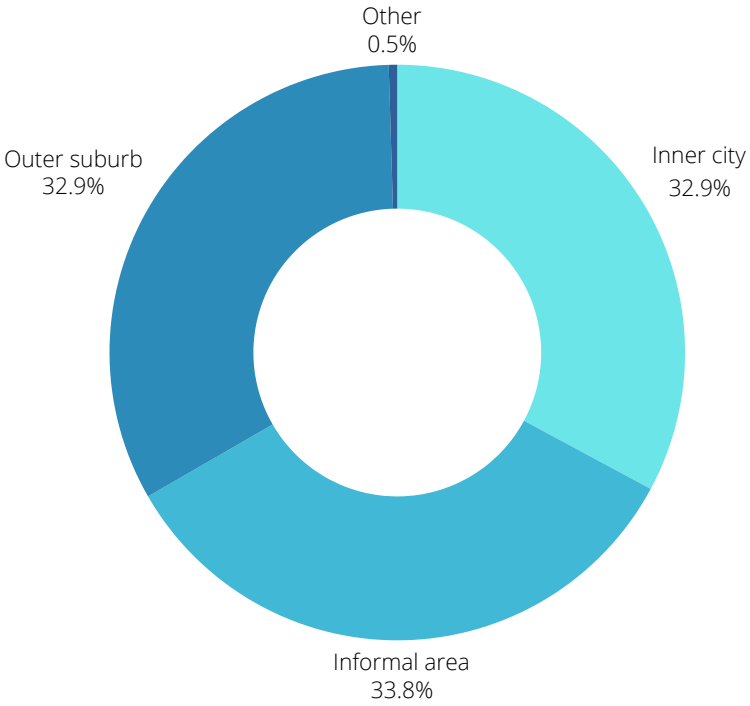

Figure 7: Urban Typology of Survey Respondents

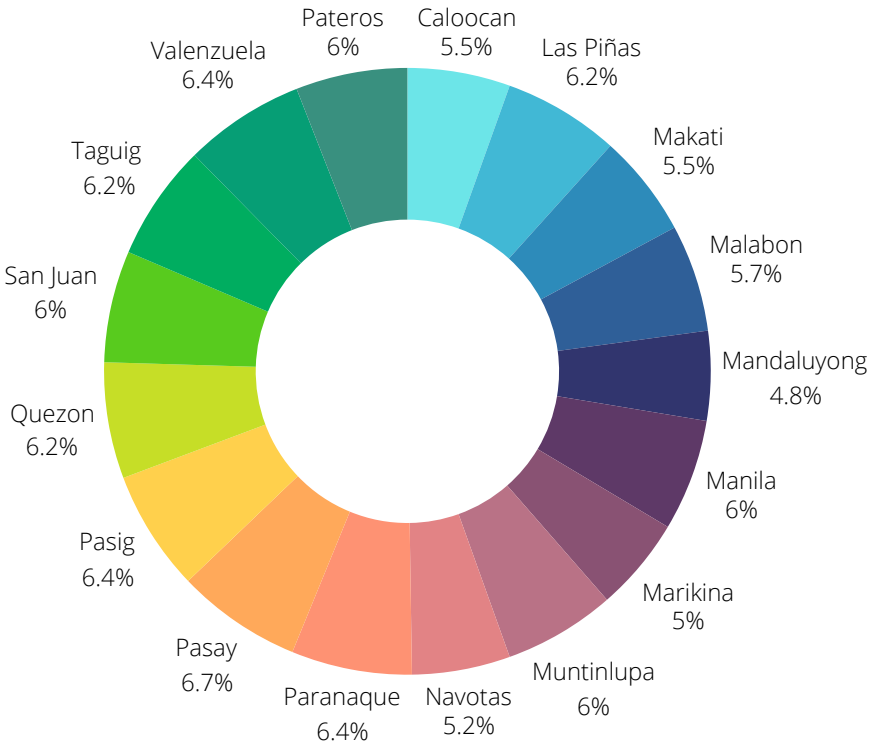

Figure 8: Geographic Distribution: Cities Where Survey Respondents Reside

Majority of the respondents reported traveling for essential services—healthcare, education, food, or employment—on a frequent basis, with daily and weekly travel emerging as the more common patterns, followed by a smaller segment who do so monthly; only a few indicated rarely needing to travel for these needs. In terms of travel time, a notable proportion of participants estimated that it takes them more than an hour to reach their nearest essential service.

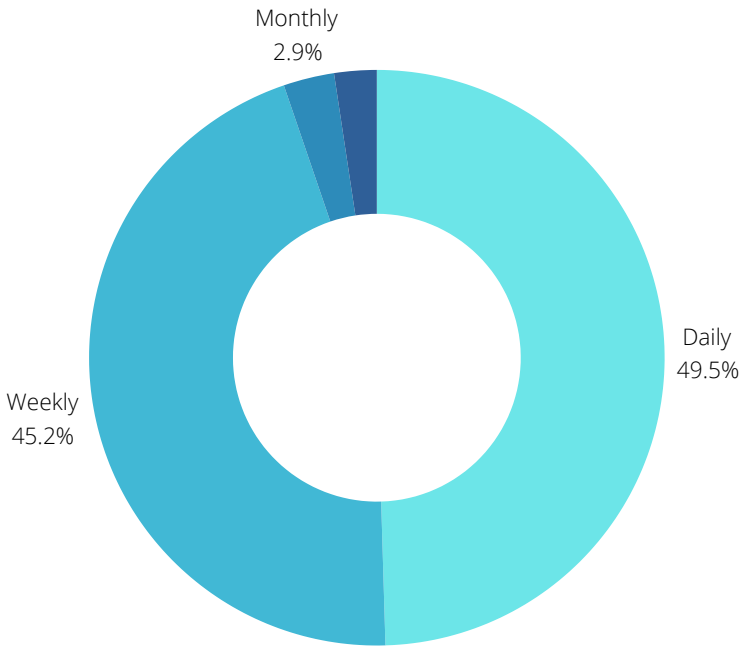

Figure 9: Frequency of Travel for Essential Services

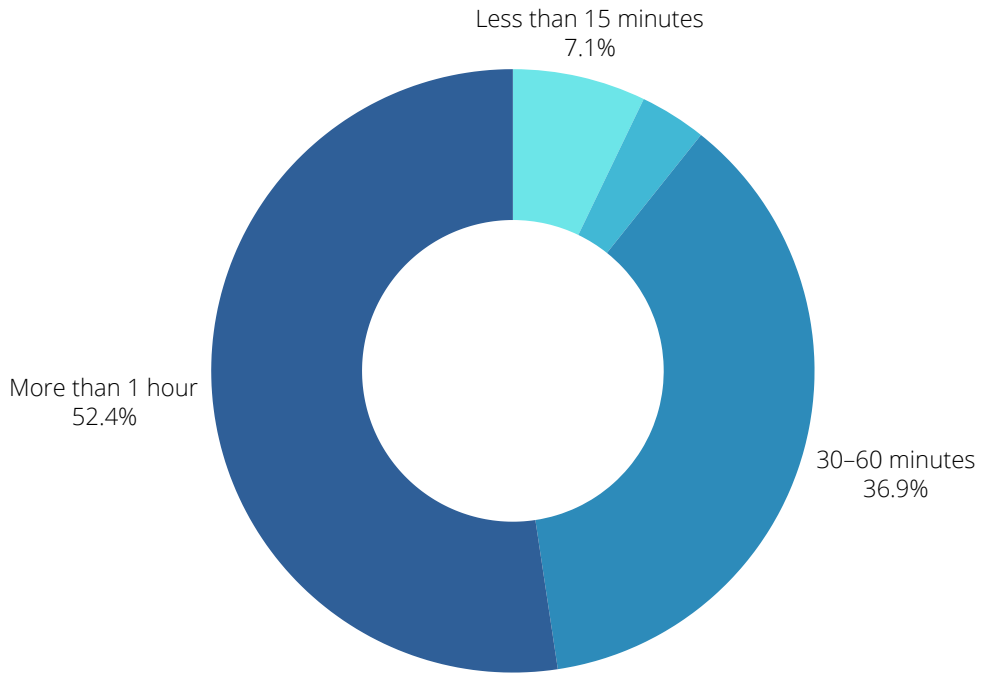

Figure 10: Travel Time to reach the nearest essential services

When asked about their primary modes of transportation, many respondents selected multiple options, underscoring that mobility choices often depend on cost, convenience, and availability. Public transportation was frequently mentioned, while others relied on private vehicles for flexibility, and a substantial number opted for walking or cycling when local infrastructure and distances permitted.

Public opinion strongly favors the 15-minute city model. Survey results indicate that 82% of Metro Manila residents prefer working or accessing services within their local area with about 76% travelling out of need as they think there are no options locally. The highest support comes from young adults (91%) and older citizens (87%), suggesting broad intergenerational approval.

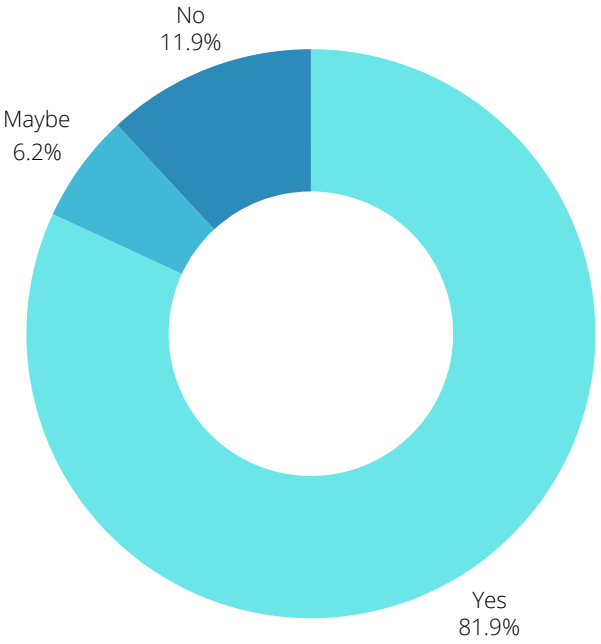

Figure 11: Preference for working or accessing essential services

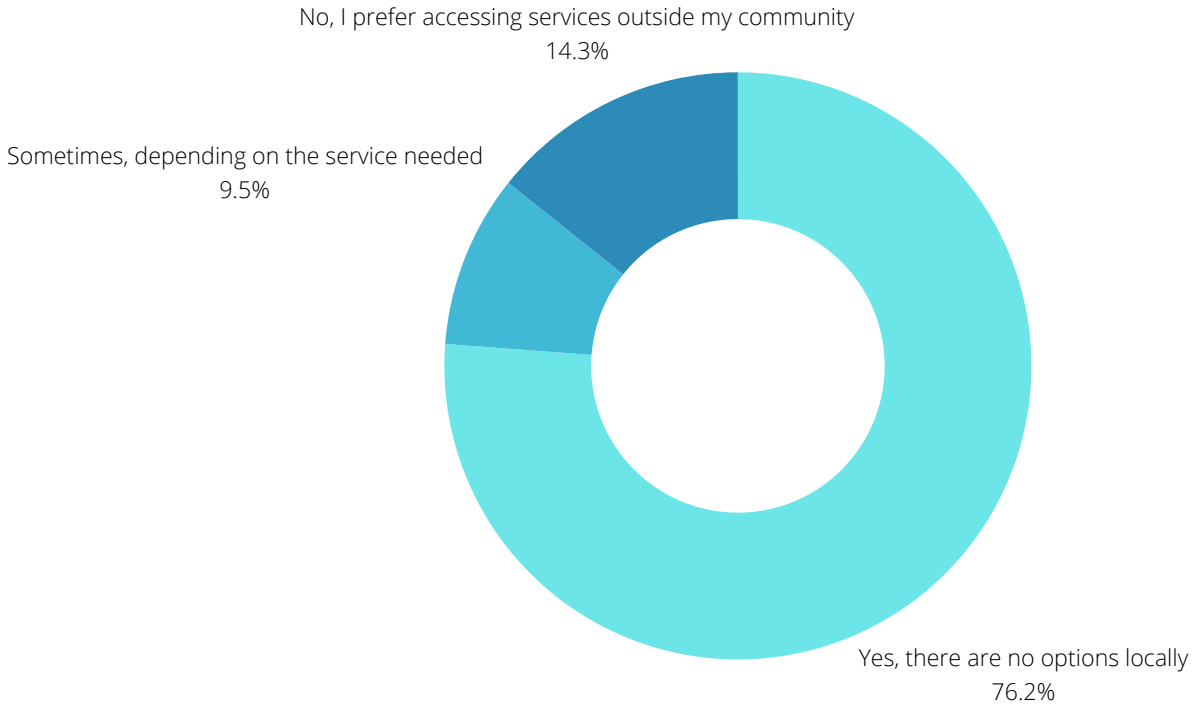

Figure 12: Necessity of traveling outside the community for work or services

Additionally, 92% of respondents consider having groceries, clinics, and schools within walking distance essential for daily convenience and quality of life. However, several challenges hinder access to these essential services. High cost of food was identified as the most significant barrier (92%), followed closely by traffic congestion (73%) and high cost for hospital services(70%). Other challenges include a lack of public transportation options (29%), poor pedestrian and cycling infrastructure (10%), the high cost of medicine (17%), and transportation expenses (19%). These findings highlight the urgent need for improved urban planning, better transport systems, and more accessible essential services.

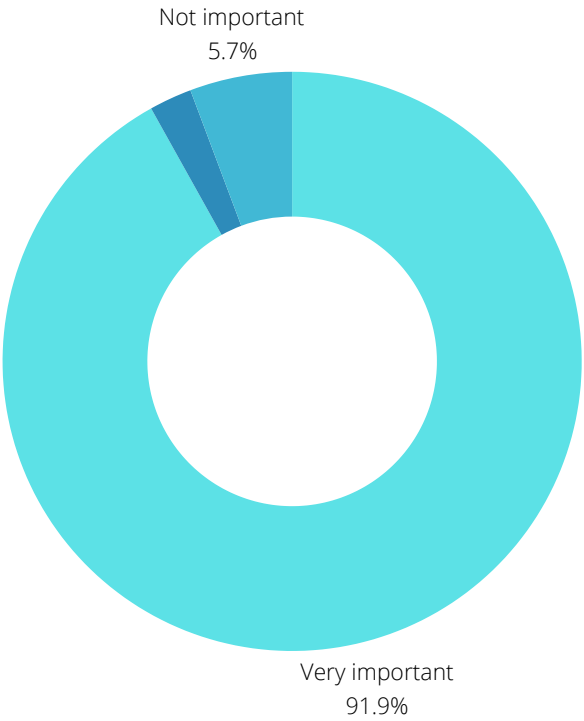

Figure 13: Necessity of having essential services available with a 15-minute timeframe

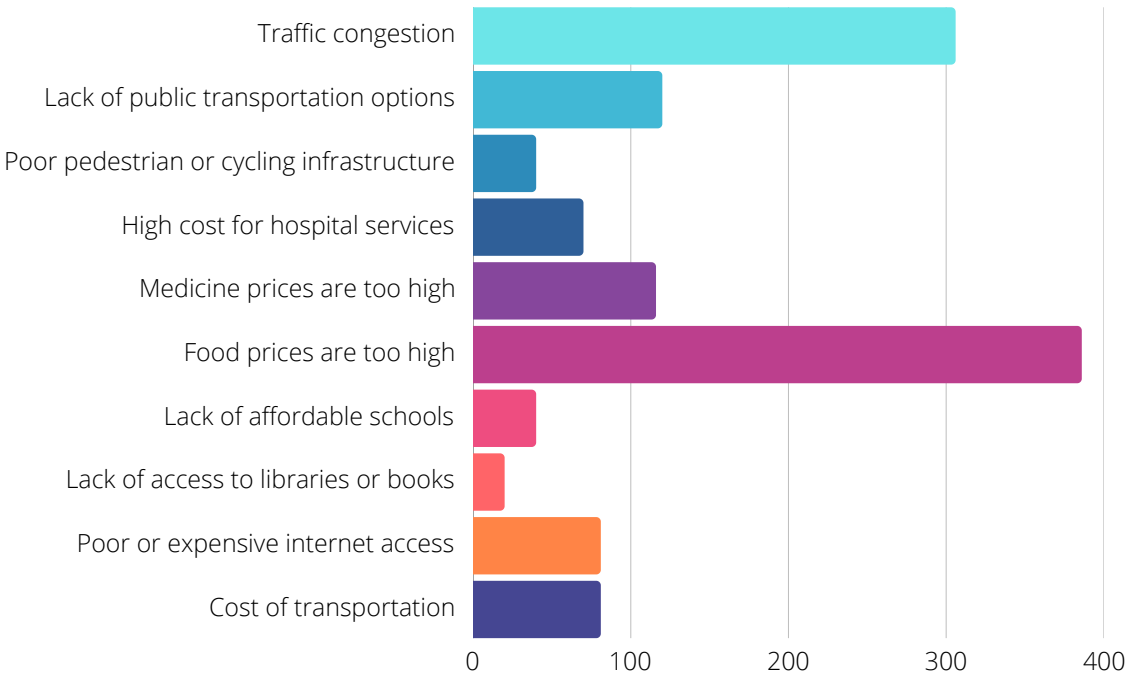

Figure 14: Challenges in Accessing Essential Services

Moreover, eighty-one percent of respondents found the concept of a 15-minute city appealing, with an additional 9% considering it somewhat appealing. In contrast, only 9% viewed it as unappealing. A strong majority (87%) believed that implementing this model would enhance their quality of life, with 68% expecting it to provide more time with family and 76% anticipating a reduction in travel time. However, respondents also identified key challenges to its implementation, citing insufficient infrastructure (71%), high costs and funding constraints (72%), and Filipinos' strong preference for private vehicle ownership as major obstacles (59%).

These findings highlight a pressing need to reduce commute times, lower transportation costs, and foster a more community-oriented lifestyle.

To address these issues and implement the 15-minute city model effectively, three distinct urban typologies—inner cities, outer suburbs, and informal areas—require customized strategies in five policy areas: land use and zoning, transport and mobility, local economic development, social and community infrastructure, and digital connectivity.

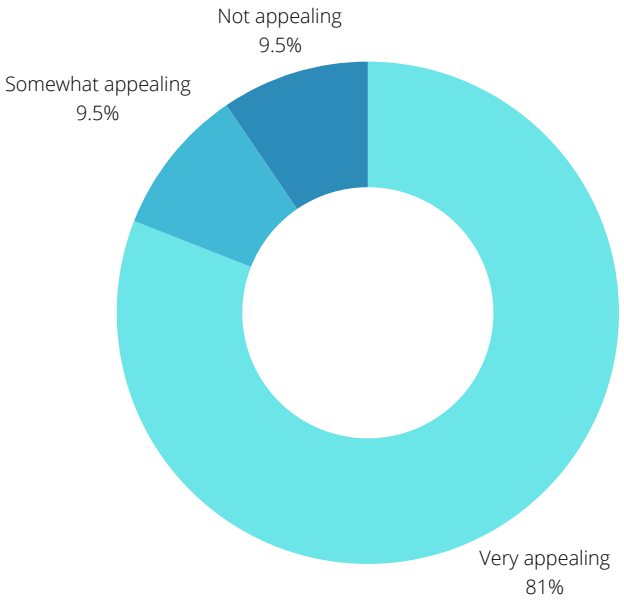

Figure 15: Acceptability of the 15-minute city in Metro Manila

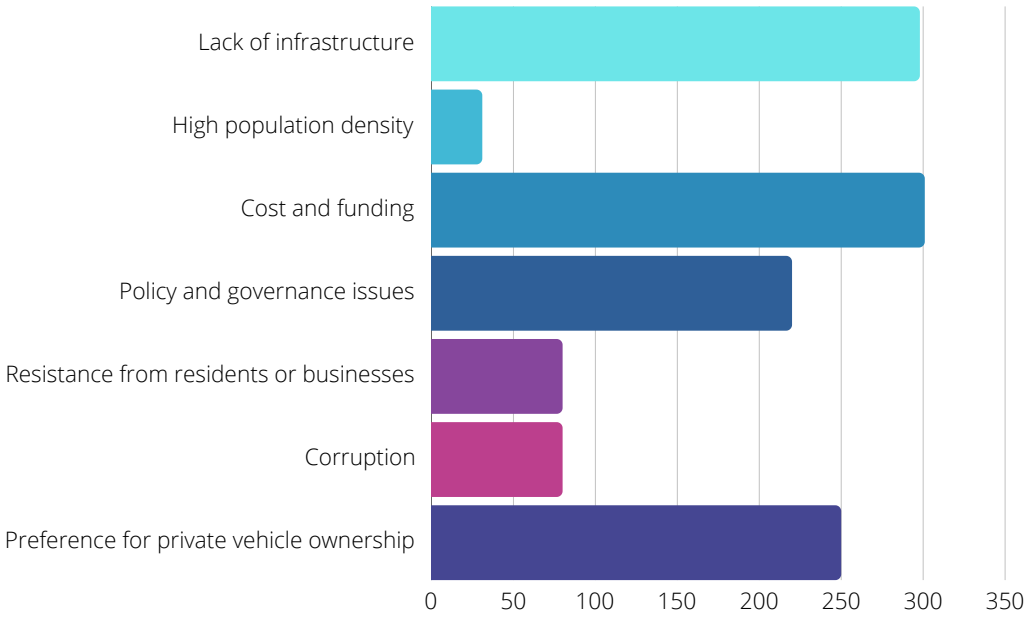

Figure 16: Challenges of a 15-Minute City in Metro Manila

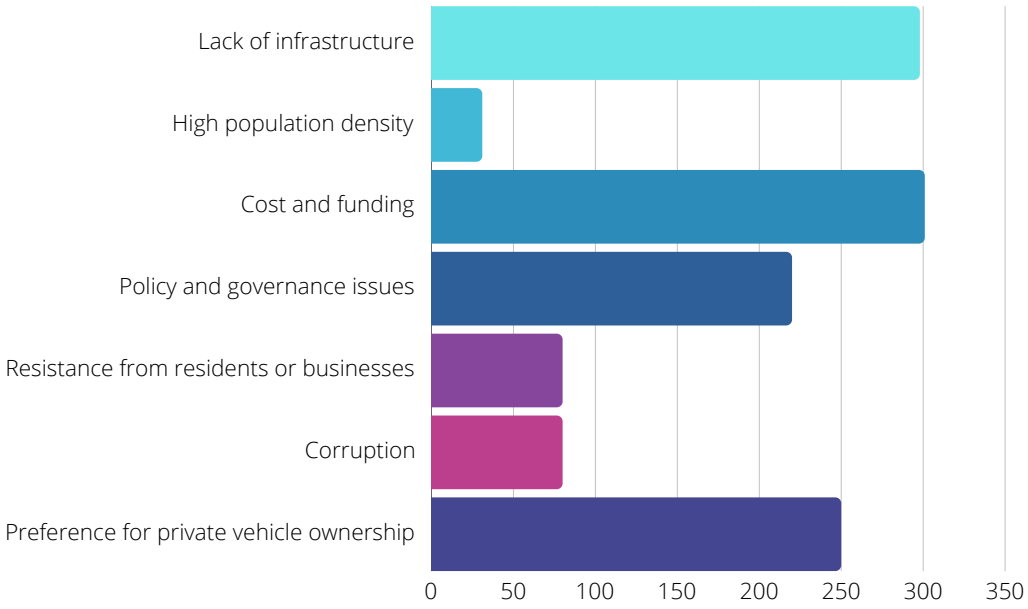

Figure 17: Benefits of a 15-minute city neighbourhood

B. Phased Policy Strategy for Metro Manila's Inner Cities

Reimagining Metro Manila's inner cities as thriving 15-minute urban environments requires a carefully phased strategy that addresses land use and zoning, transport and mobility, local economic development, social and community infrastructure, and digital and smart city integration. By implementing changes in distinct timeframes—short-, medium-, and long-term timelines —local governments, private developers, and community stakeholders can work together to gradually transform dense, historic centers into vibrant, inclusive, and walkable neighborhoods.

In the short term, land use and zoning reforms focus on low-barrier, high-impact projects. Identifying strategic blocks within Metro Manila's inner city for rapid commercial-residential integration sets an immediate tone for mixed-use development. Simplified permit processes encourage small-scale entrepreneurs to establish ground-floor businesses, while upper floors are reserved for housing or co-working setups. Likewise, adaptive reuse of vacant or old buildings injects new life into formerly derelict structures. Quick assessments can lead to the creation of pop-up shops and community centers that cater to local needs, while tax breaks for heritage conservation ensure that the unique character of these districts is preserved.

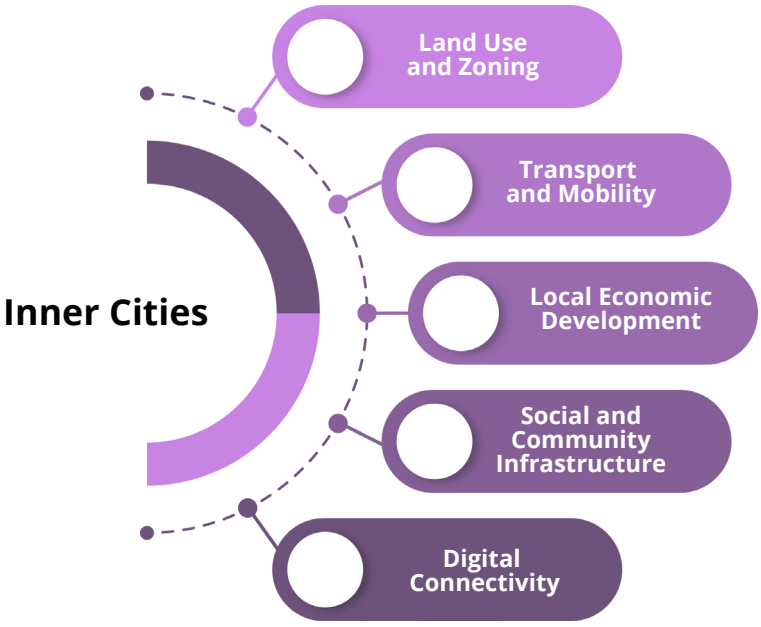

Figure 18: Priority Policies for Metro Manila's Inner Cities

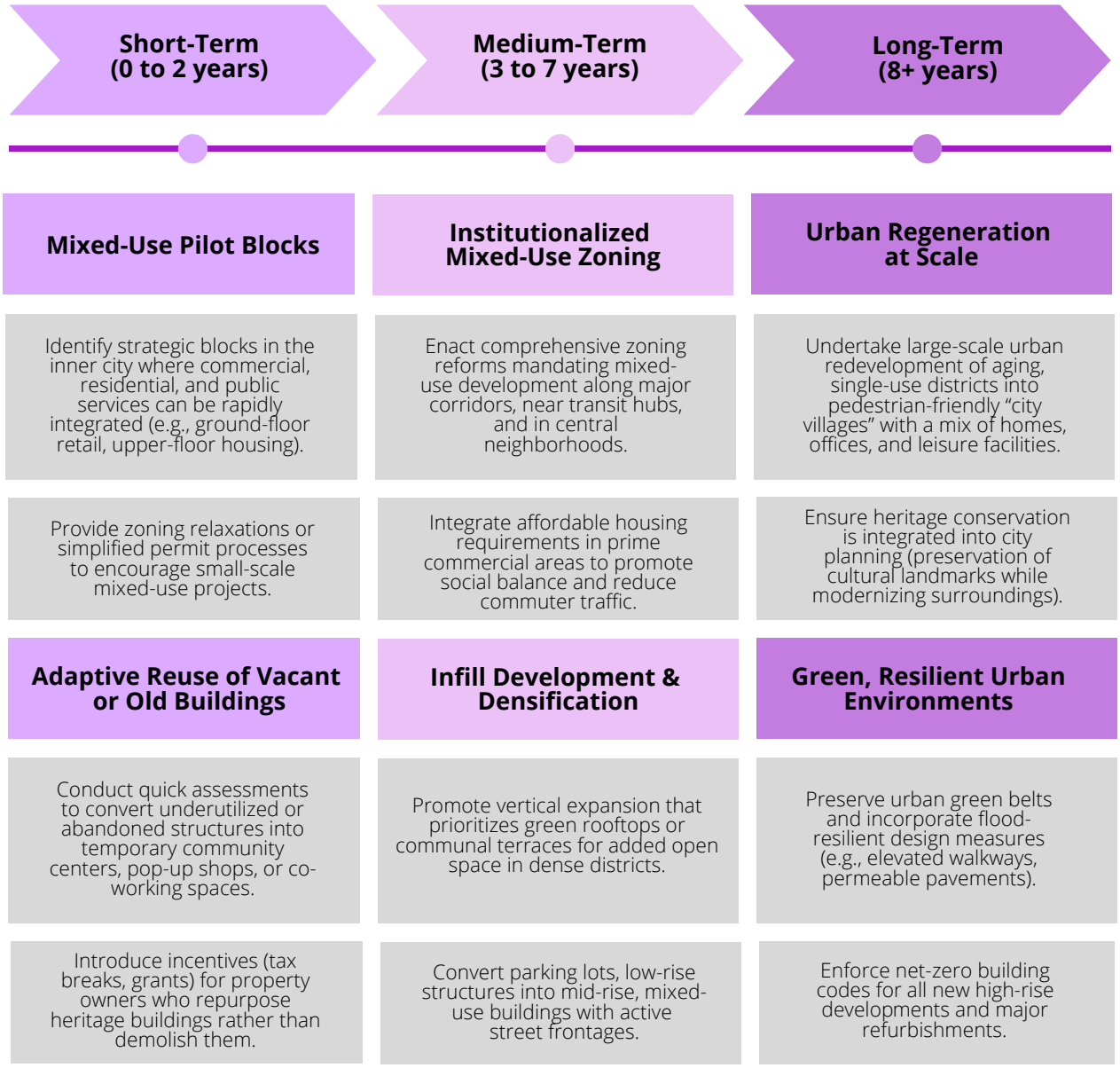

Figure 19: Phased Policy Strategy for Land Use & Zoning in Inner Cities

Simultaneously, short-term transport and mobility efforts emphasize immediate pedestrian and bicycle improvements. Reclaiming sidewalk space by clearing obstructions, painting bike lanes, and designating car-free weekends helps test the potential of people-centric streets. Traffic management can improve when agencies such as the Metro Manila Development Authority coordinate bus or jeepney routes to reduce duplication, ensure timely departures, and introduce smarter traffic signals. These adjustments pave the way for a culture that prioritizes walkability and streamlined public transit, encouraging even more residents to leave their cars at home.

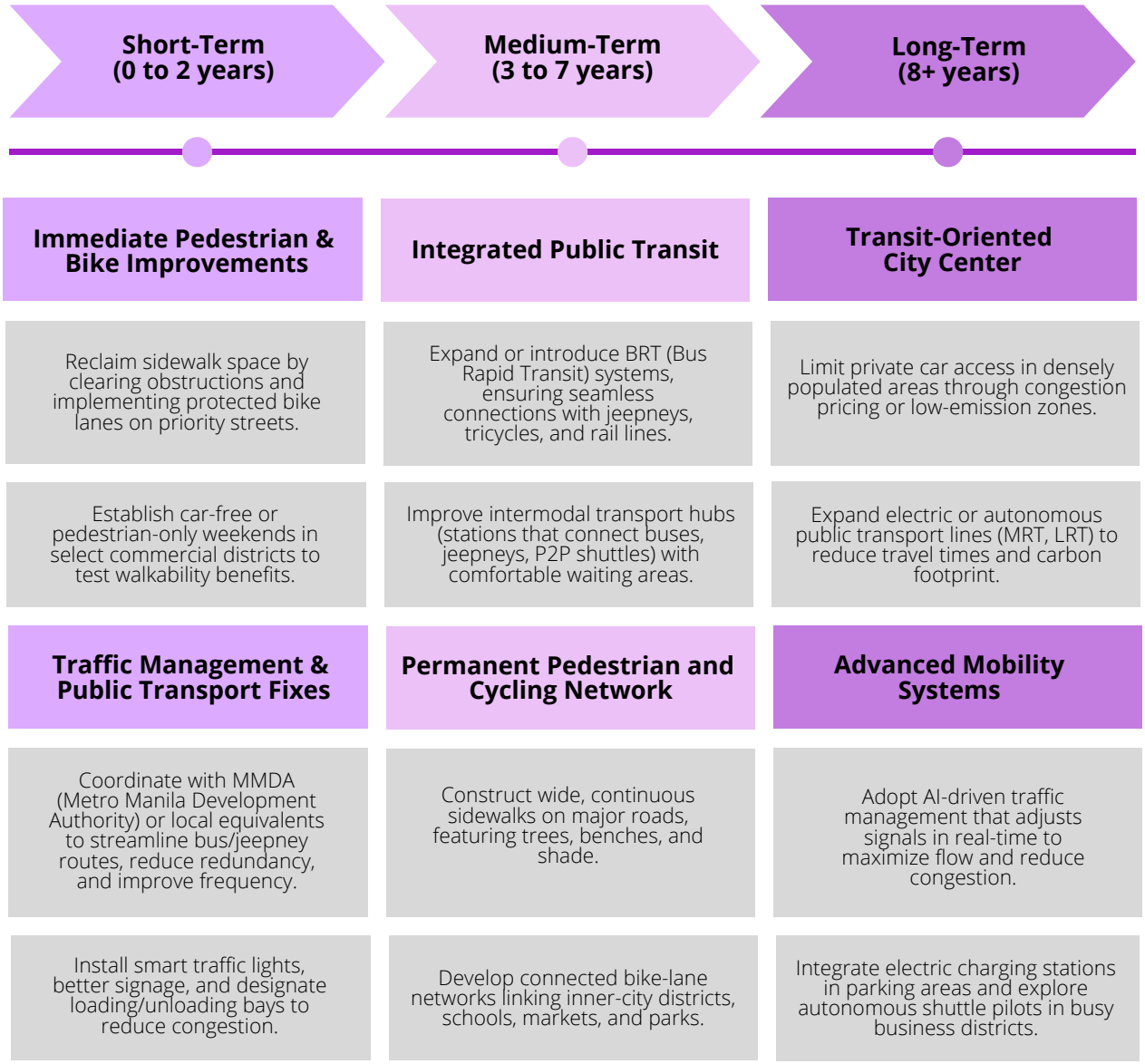

Figure 20: Phased Strategy for Transport and Mobility in Metro Manila's Inner Cities

As these initial steps take root, the medium-term strategy scales up. Comprehensive zoning reforms mandate institutionalized mixed-use development along major corridors and near transit hubs, ensuring that new construction includes a blend of commercial spaces, affordable housing, and communal amenities. Infill development on parking lots or underutilized land enhances density while promoting vertical expansion, often complete with green rooftops or shared terraces that help mitigate the urban heat island effect. In the realm of mobility, Bus Rapid Transit (BRT) systems emerge, complemented by improved intermodal hubs where jeepneys, rail lines, and other shared services converge. Pedestrian and cycling networks become permanent, with wide sidewalks and dedicated lanes connecting key destinations such as schools, markets, and government offices.

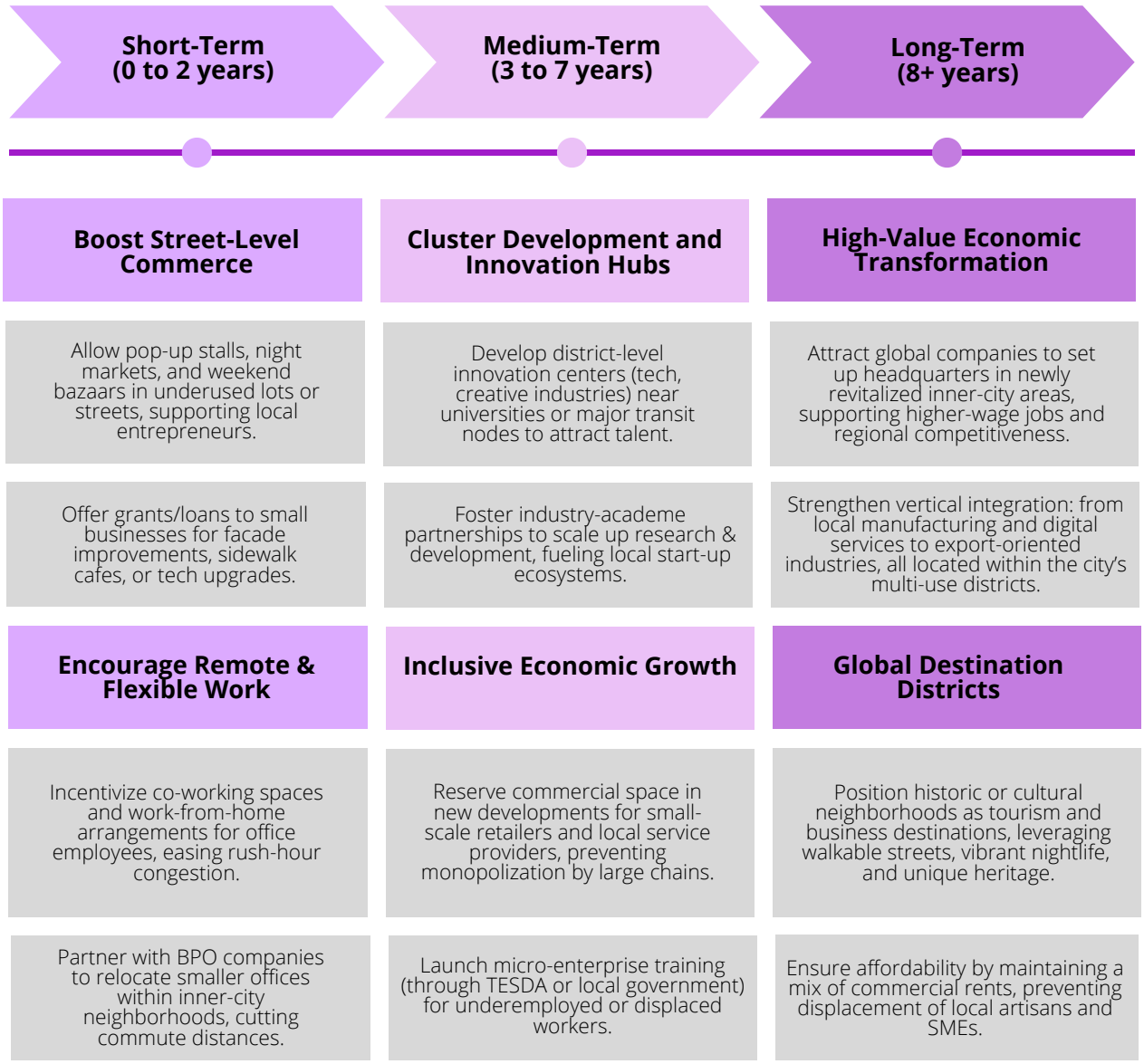

Figure 21: Phased Strategy for Local Economic Development in Metro Manila's Inner Cities

In the long term, a sweeping urban regeneration materializes. Single-use districts transform into pedestrian-friendly city villages (Adonis and Davies, 2015), blending housing, workplaces, parks, and cultural venues. Net-zero building codes become the norm for all new high-rises, ensuring energy efficiency and climate resilience. Transportation evolves into a car-lite systemthrough congestion pricing, low-emission zones, and electric or autonomous public transport expansions. Meanwhile, local economies scale to attract global companies, spurring higher-wage jobs, while preserving affordability for independent retailers and artisans. The social fabric strengthens with climate resilient community centers that can double as disaster shelters, and with education and healthcare facilities equipped with green roofs, solar panels, and rainwater harvesting systems

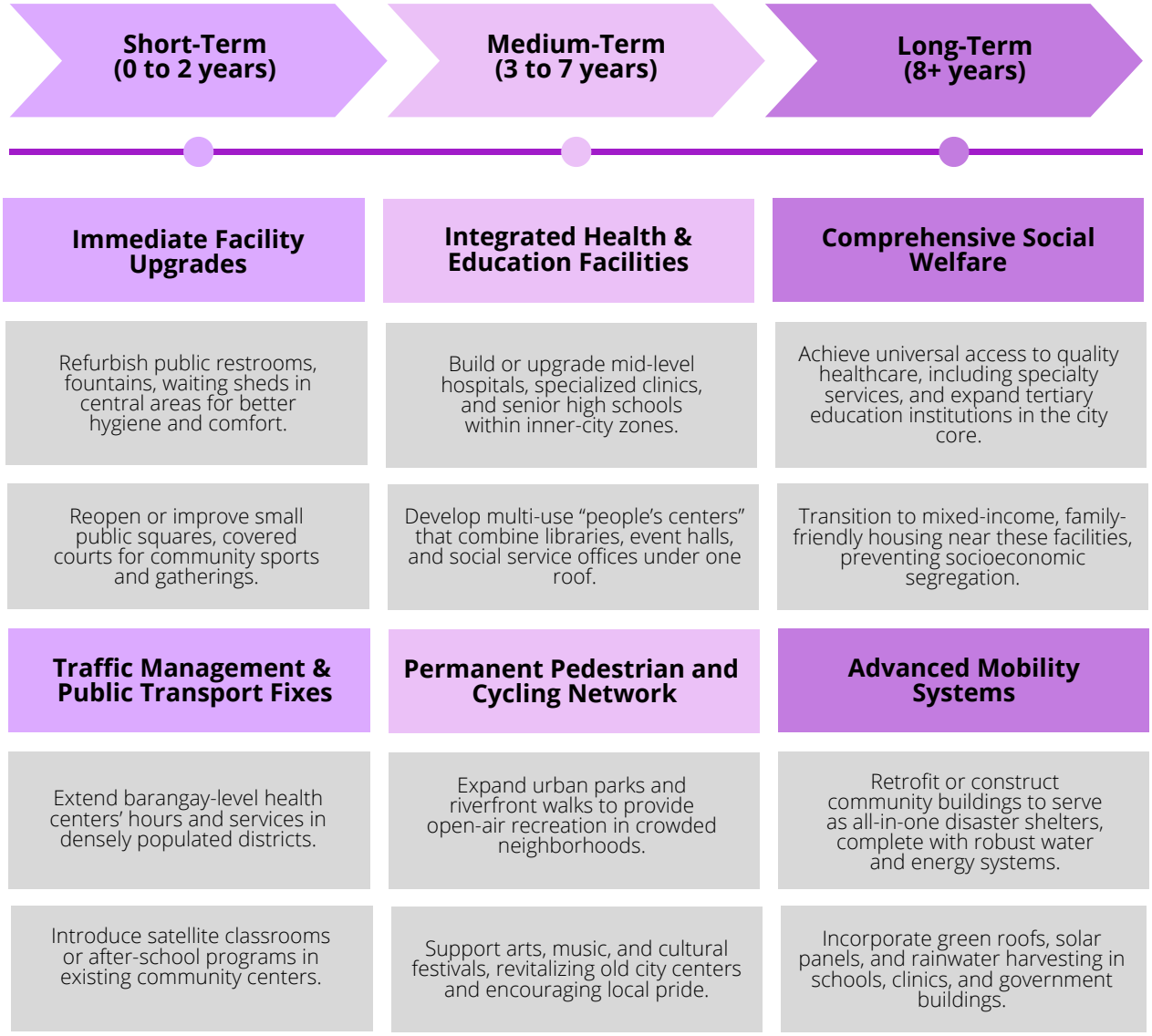

Figure 22: Phased Strategy for Social and Community Infrastructure in Metro Manila's Inner Cities

Throughout each phase, digital connectivity underpins decision-making and service delivery. Short-term initiatives include free public Wi-Fi in major public spaces and mobile apps for citizen feedback, enabling quicker fixes to everyday problems. Medium-term programs integrate e-governance platforms, IoT sensors for monitoring traffic and air quality, and cashless fare systems for public transport. By the final phase, AI-powered traffic management, real-time flood monitoring, and digital IDs converge to create a modern, efficient urban environment that is both responsive and responsible.

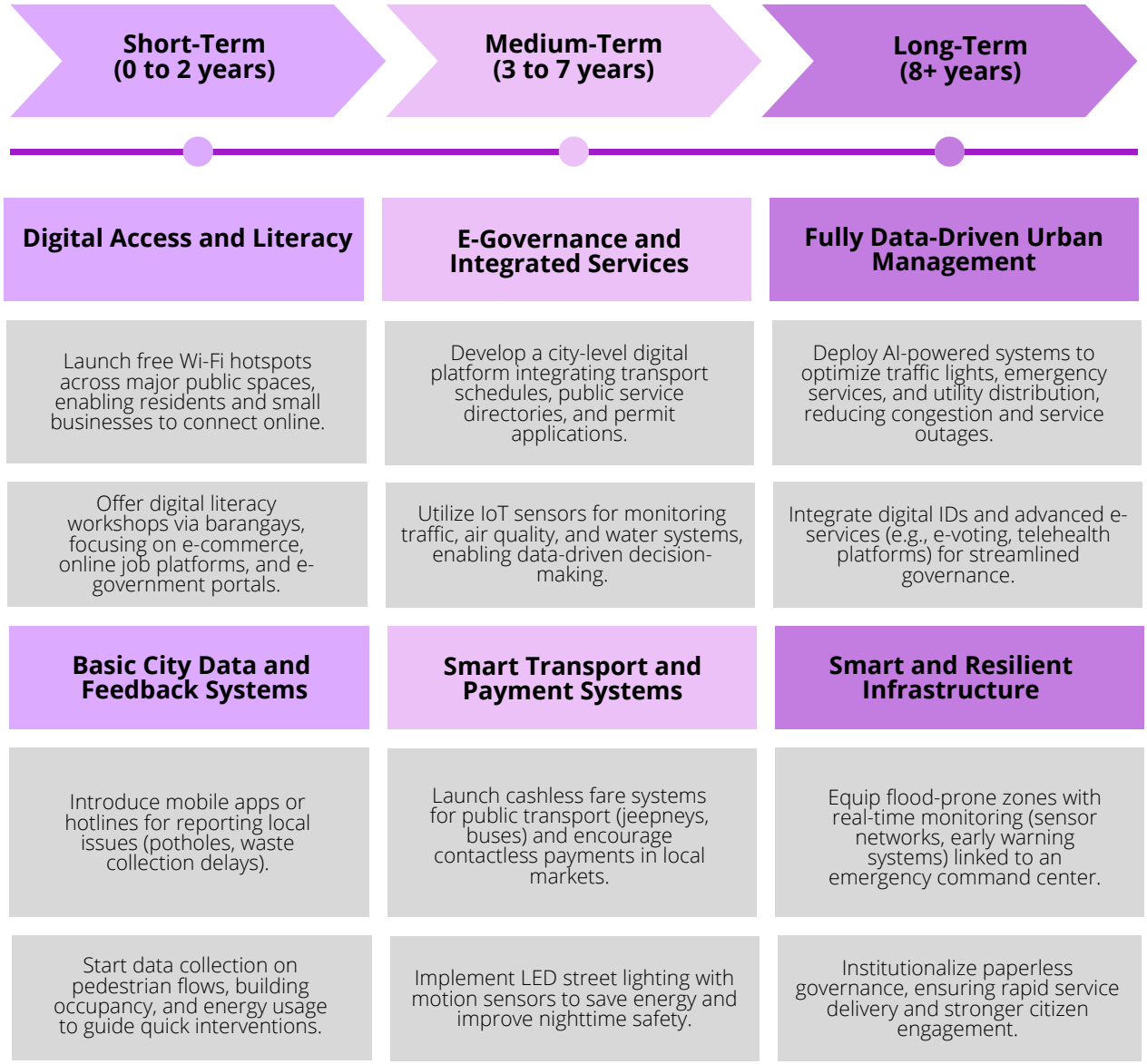

Figure 23: Phased Strategy for Digital Connectivity in Metro Manila's Inner Cities

C. Phased Policy Strategy for Metro Manila's Outer Suburbs

Transforming the Philippines' outer suburbs into 15-minute communities requires a carefully planned, phased approach that tackles land use and zoning, transportation and mobility, localized economic activity, social and community infrastructure, and digital and smart city integration. This strategy recognizes the unique challenges suburban areas face—often marked by car-dependent layouts, scattered residential developments, and limited access to essential services. By aligning short-term (0–2 years), medium-term (3–7 years), and long-term (8+ years) actions, local governments, private stakeholders, and communities can collectively reshape suburban environments into vibrant, inclusive, and sustainable districts.

In terms of land use and zoning, the short-term focus is on adaptive policies and community-based planning. Allowing small mixed-use "pocket hubs" within residential subdivisions ensures that everyday necessities—like small clinics or stores—are close by. Collaborating with HOAs to map underutilized lots for community parks and urban gardens is a simple but impactful step. Over the medium term, the creation of suburban town centers, complete with mid-rise, mixed-use complexes, encourages a higher density of housing and commerce near transport corridors. Formalizing existing informal settlements and incorporating flood-resilient features become essential to avoid both social inequities and climate-related risks. In the long run, master planning ensures alignment with regional growth, converting large tracts of land or industrial zones into walkable districts guided by net-zero and climate-resilient design standards.

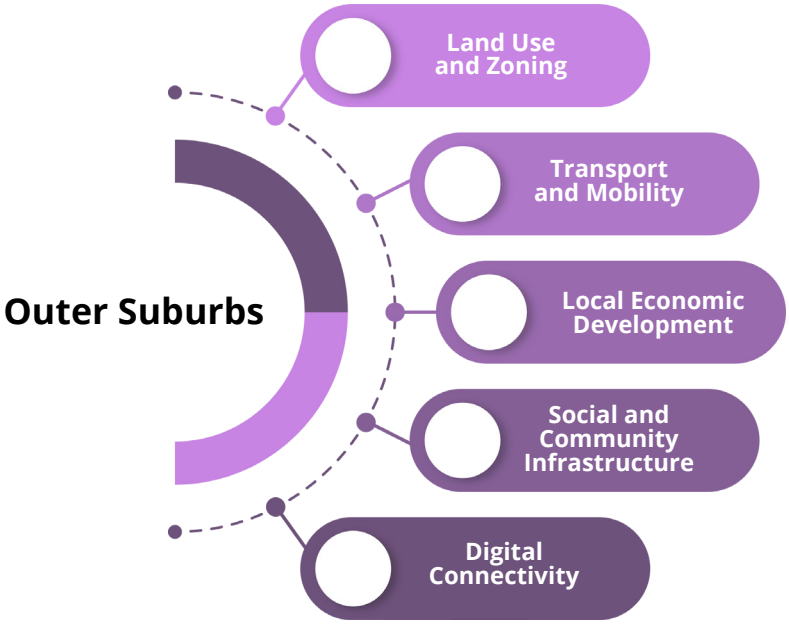

Figure 24: Priority Areas for Outer Suburbs

Short-Term (0 to 2 years)	Medium-Term (3 to 7 years)	Long-Term (8+ years)
Adaptive Zoning Policies	**Institutionalized Mixed-Use Zoning**	**Urban Regeneration at Scale**
Collaborate with LGUs (Local Government Units) to allow small mixed-use "pocket hubs" (e.g., local stores, small clinics) inside residential subdivisions.	Enact comprehensive zoning reforms mandating mixed-use development along major corridors, near transit hubs, and in central neighborhoods.	Undertake large-scale urban redevelopment of aging, single-use districts into pedestrian-friendly "city villages" with a mix of homes, offices, and leisure facilities.
Introduce temporary zoning relaxations for pop-up markets or community retail centers near transport nodes	Integrate affordable housing requirements in prime commercial areas to promote social balance and reduce commuter traffic.	Ensure heritage conservation is integrated into city planning (preservation of cultural landmarks while modernizing surroundings).
Community-based Land Planning	**Infill Development & Densification**	**Green, Resilient Urban Environments**
Conduct barangay-level mapping to identify vacant or underutilized lots for quick, small-scale development (urban gardens, pocket parks)	Work with national housing agencies to formalize informal settlements through site-and-service schemes or in-place upgrading	Enforce net-zero building codes and require climate-resilient design (e.g., elevated structures in flood-prone areas)
Hold consultations with HOAs (Homeowners' Associations) to gauge support for future densification or commercial spaces	Integrate flood resilience (e.g., mandatory green corridors, set-back rules along waterways) in local land use plans.	Establish long-term land trusts or green belts to protect agricultural land and natural habitats

Figure 25: Phased Strategy for Land Use & Zoning in Outer Suburbs

Transportation and mobility solutions begin with short-term improvements to public transport routes and the introduction of “park-and-ride” hubs to encourage residents to leave their cars behind. Tactical urbanism initiatives—such as painting temporary bike lanes and improving sidewalks—help test the viability of pedestrian- and cyclist-friendly spaces. By the medium term, more robust infrastructure is put in place. Bus Rapid Transit (BRT) corridors can connect major suburban areas to central business districts, supported by feeder services like minibuses and e-trikes. Overpasses, footbridges, and multi-modal terminals further enhance the convenience of public transport. Ultimately, long-term mass transit expansions, including extended MRT or LRT lines, create reliable links to the urban core. A car-lite future featuring electric or green public transport, along with smart traffic systems, fosters a cleaner, more efficient suburban landscape.

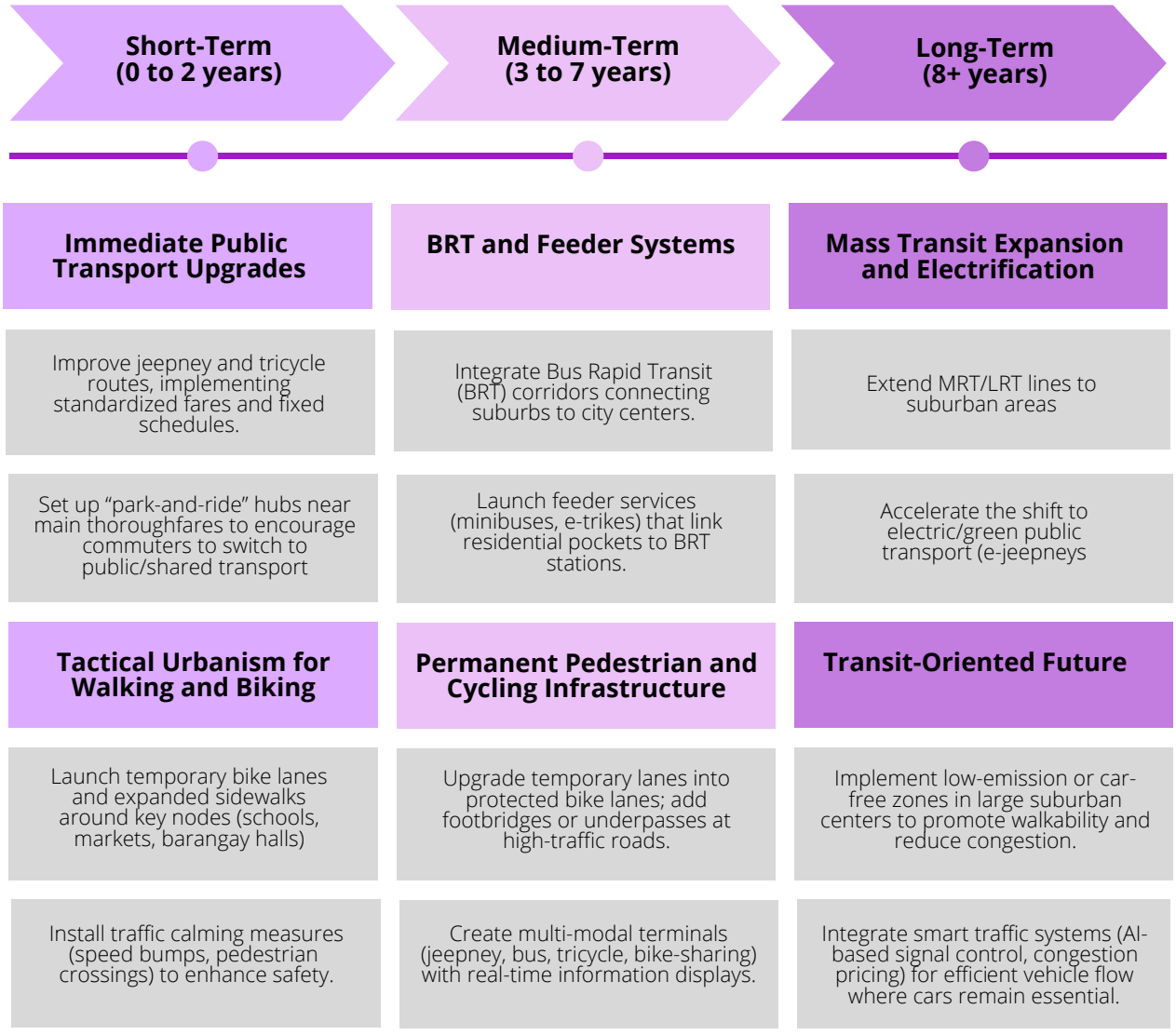

Figure 26: Phased Strategy for Transport and Mobility in Metro Manila’s Outer Suburbs

Local economic development is critical to ensuring that outer suburbs offer employment and business opportunities on par with urban centers. Short-term efforts concentrate on encouraging pop-up commerce, weekend markets, and micro-finance for small enterprises, while simultaneously promoting remote work setups through coworking hubs. Over the medium term, suburban town centers evolve into local business incubators, attracting new offices or small tech start-ups eager to tap into a suburban workforce. Light industrial parks near major roads provide local manufacturing jobs and help diversify the economic base. In the long run, fully mixed-use districts emerge, featuring a blend of residential, commercial, and creative industries tied closely to mass transit nodes. These transformations allow suburbs to become competitive economic satellites, attracting both domestic and international investments.

Figure 27: Phased Policy Strategy for Local Economic Development in Metro Manila's Outer Suburbs

On the social infrastructure front, initial steps focus on improving the basics: healthcare stations, satellite classrooms, and safe public spaces. Street lighting, CCTV coverage, and community courts help create a sense of security and cohesion. As the strategy matures, the building or upgrading of suburban clinics, mid-level hospitals, and schools means residents spend less time traveling for essential services. Green and recreational spaces also expand, integrating playgrounds, sports complexes, and even urban agriculture to boost well-being and foster community bonds. Eventually, the goal is to guarantee comprehensive access to healthcare, education, and cultural amenities, all within a 15-minute radius—while preserving mixed-income developments to prevent socioeconomic segregation.

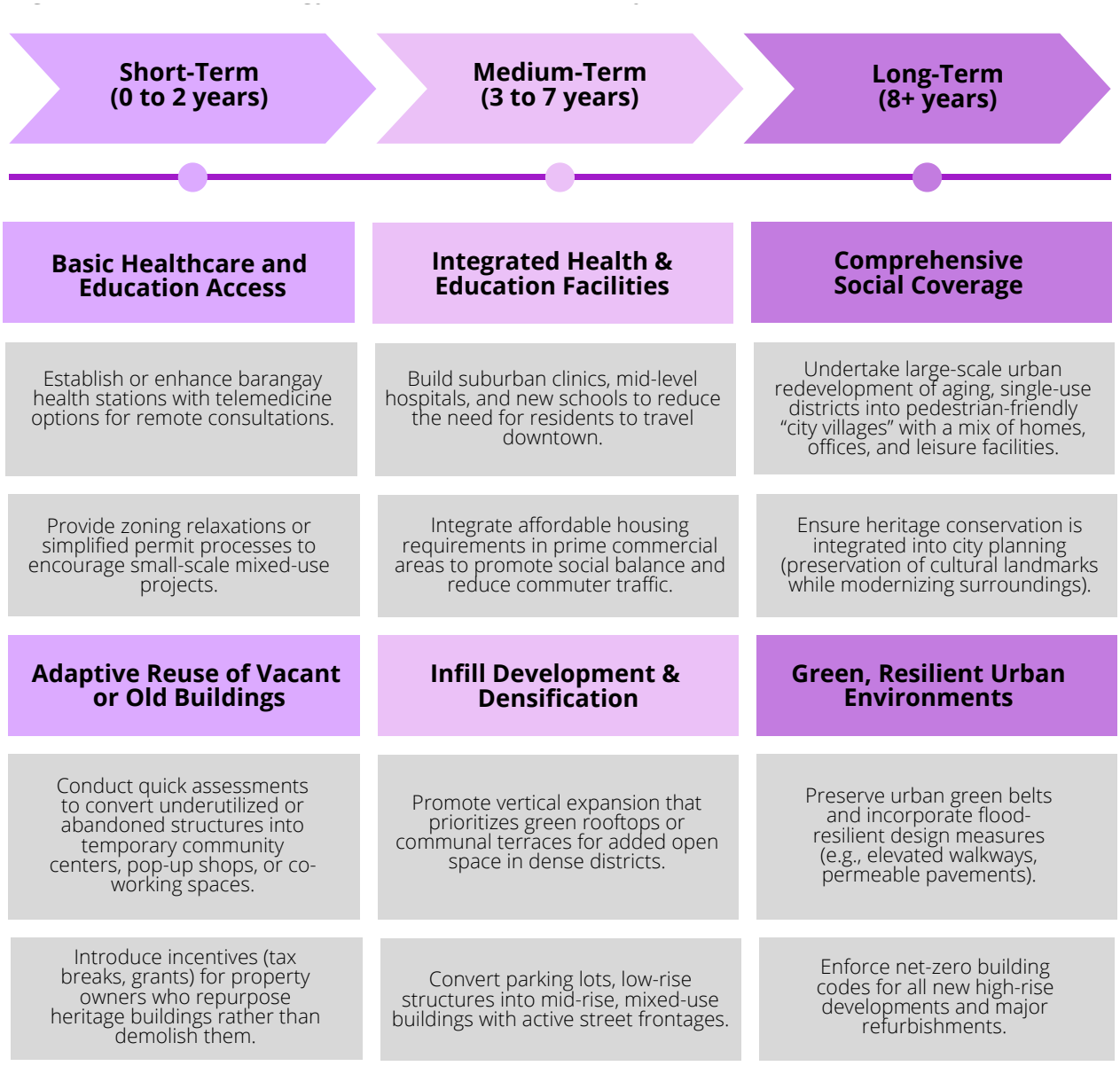

Figure 28: Phased Strategy for Social and Community Infrastructure in Outer Suburbs

Digital and smart city integration underpins each of these categories, beginning with short-term public Wi-Fi hotspots and data collection tools that inform policymakers about real needs. Introducing digital literacy programs opens doors for residents to engage with e-services, job portals, and online education. By the medium term, integrated city service platforms and IoT-based solutions for traffic and flood management streamline local governance. In the long run, AI-driven infrastructure, autonomous public vehicles, and blockchain-secured land registries help outer suburbs become truly smart communities—capable of adapting to population growth, climate changes, and evolving economic demands.

D. Phased Policy Strategy for Metro Manila's Informal Areas

Informal areas in the Philippines often emerge as densely populated neighborhoods with limited infrastructure, insecure tenure, and inadequate access to public services. Transforming these settlements into healthy, thriving, and walkable 15-minute communities requires a holistic, community-driven strategy implemented in phases: short term (0–2 years), medium term (3–7 years), and long term (8+ years). By focusing on land use and zoning, transportation and mobility, localized economies, social infrastructure, and digital integration, local governments, non-governmental organizations, and residents can collaboratively foster safer living environments and expand opportunities for social and economic growth.

A crucial first step is improving land use and zoning by engaging community members in participatory mapping exercises. In the short term, rapid data collection helps identify where urgent needs—like water, sanitation, or day-care corners—are most pressing. Negotiating interim occupancy permits or imposing moratoriums on eviction gives residents immediate security while formal land tenure processes are still underway. Over the medium term, site-and-service schemes begin providing basic infrastructure such as roads and drainage, which allow people to incrementally upgrade their homes without fear of sudden displacement. Gradually, local governments integrate these settlements into comprehensive land use plans, enforcing flood-resilient zoning rules that protect residents from environmental hazards. By the long term, large-scale redevelopment programs ensure the rebuilding of hazard-prone areas into climate-resilient housing clusters, guided by net-zero building standards and community land trusts, ensuring that affordability and heritage remain intact even amid urban renewal.

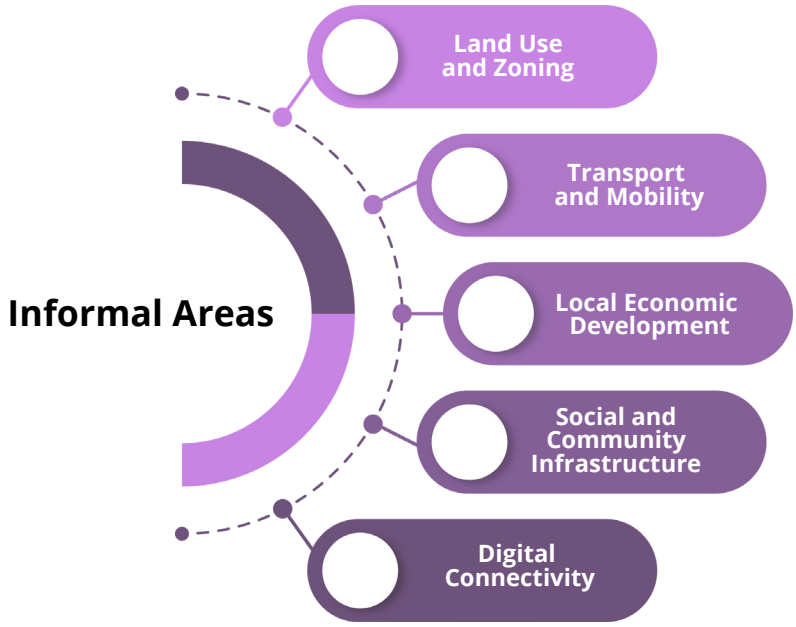

Figure 29: Priority Policy Areas for Informal Areas

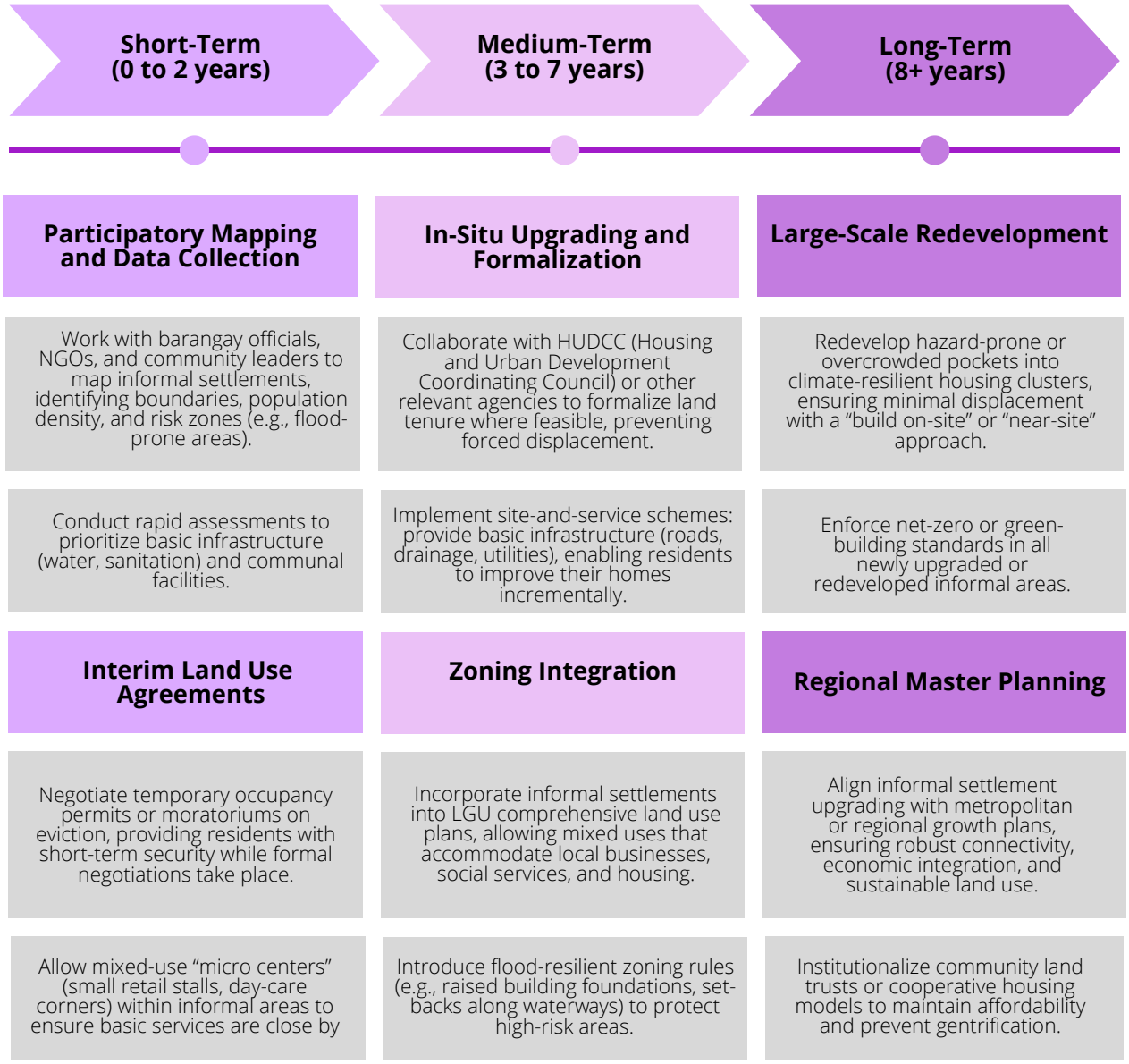

Figure 30: Phased Strategy for Land Use and Zoning in Informal Settlements

In tandem with land use reforms, short-term transport interventions focus on immediate access and safety. Simple measures such as better lighting, footbridges, and signposting in alleys can make a profound difference for people navigating their neighborhoods by foot. Weekend street closures might encourage safe recreation, while traffic calming measures along busy roads reduce collisions. Medium-term steps connect informal areas to broader city networks by integrating them into feeder routes linked to major transit lines like BRT or MRT. Secure, well-lit transport hubs near these neighborhoods make it easier to board public vehicles without long walks.

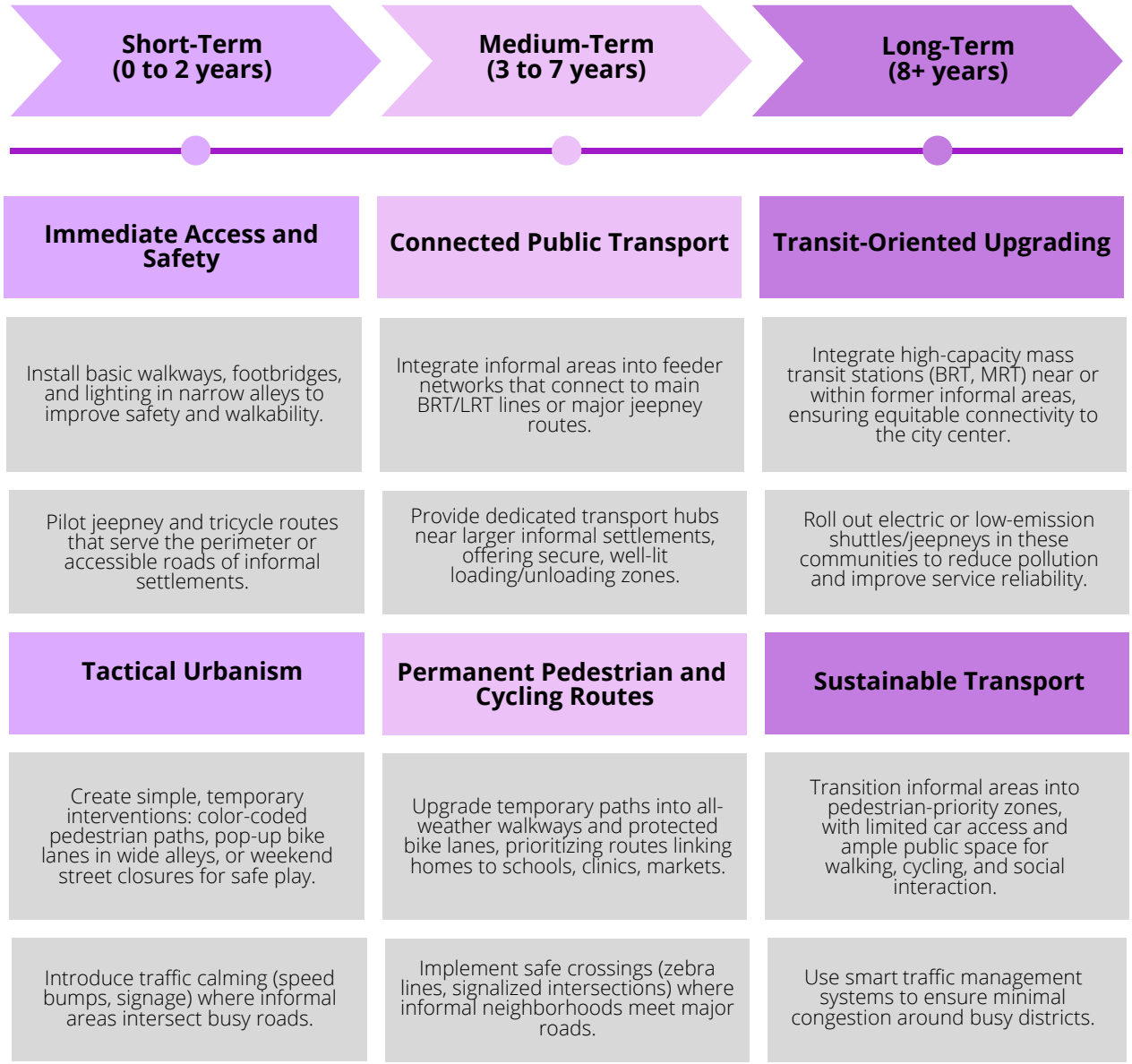

Figure 31: Phased Strategy for Transport and Mobility in Informal Settlements

Over time, these temporary pathways and bike lanes are upgraded into permanent, all-weather infrastructure for pedestrians and cyclists. Ultimately, in the long run, high-capacity transit stations are introduced directly into upgraded informal areas, coupled with electric or low-emission vehicles that reduce both congestion and pollution. These car-lite, pedestrian-priority spaces transform once-isolated informal settlements into well-connected and sustainable urban districts.

For many residents, securing a decent livelihood is as important as having stable housing. Short-term goals include providing micro-finance programs for sari-sari store owners or street vendors, thereby formalizing small businesses and enabling them to expand. Immediate skills training through partnerships with TESDA or NGOs helps people acquire trades in carpentry, sewing, or food preparation.

Over the medium term, these emerging entrepreneurs can thrive in shared workspaces or small business incubators set up within the community. Strengthened local supply chains connect produce from urban farms or handmade crafts to larger markets, generating a solid economic base. By the long term, formerly marginalized areas transition into busy commercial districts hosting a diversity of enterprises, from light manufacturing to digital services. As infrastructure and opportunities grow, informal settlements can become active participants in the metropolitan economy, attracting new industries without displacing existing businesses.

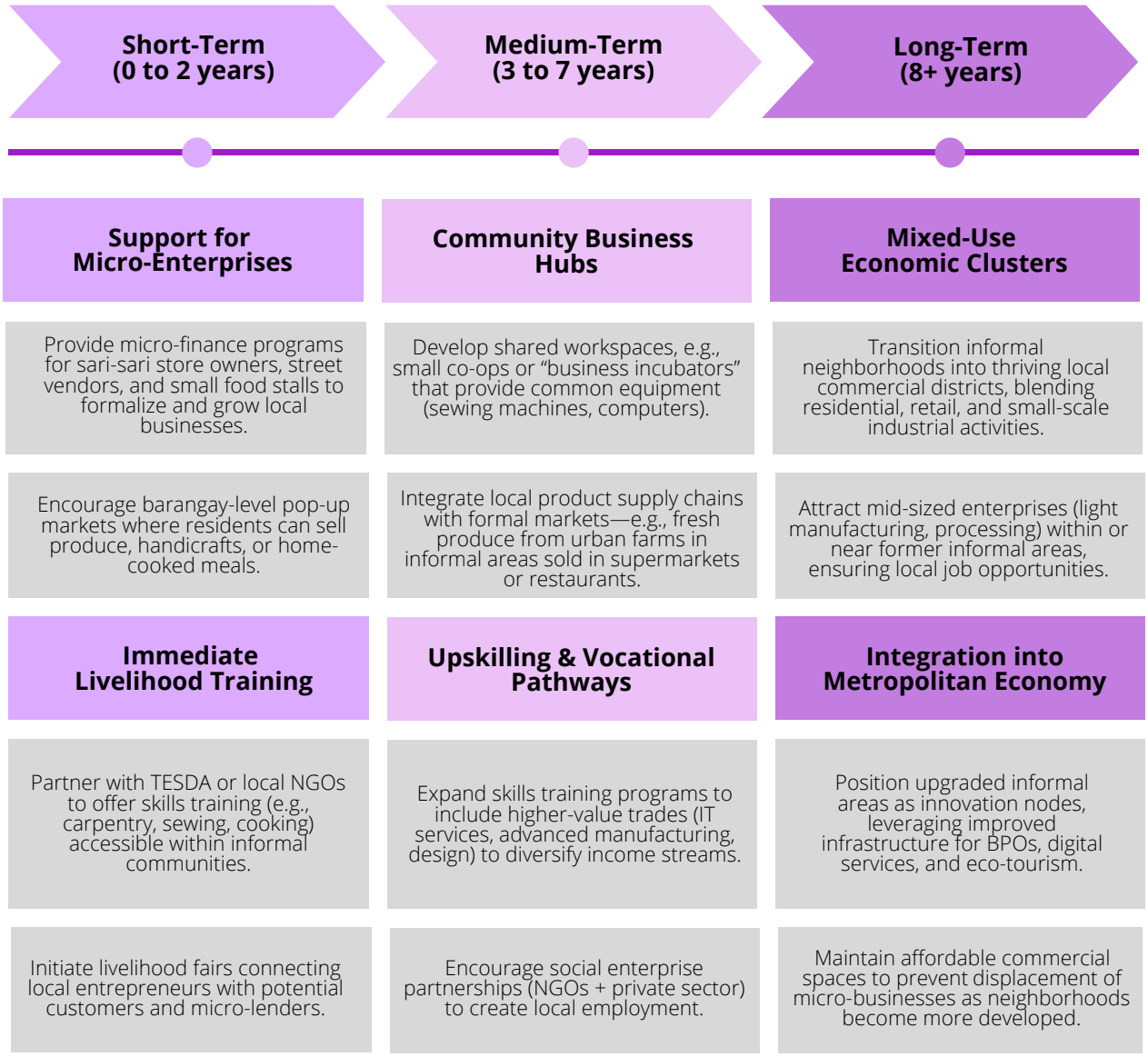

Figure 32: Phased Strategy for Local Economic Development in Informal Settlements

Social and community infrastructure supports these changes by addressing basic utilities, health, and education. In the short run, communal water points, sanitation blocks, and emergency electricity connections alleviate immediate hardships. Mobile clinics staffed by barangay health workers offer maternal and child health services, while temporary learning centers meet the urgent need for classroom space. Longer-term improvements come in stages: medium-term construction of satellite clinics and permanent classrooms enhances local capacity, while recreational areas and parks foster social cohesion. By the long run, comprehensive social coverage—universal healthcare access, high-quality education, and green public spaces—anchors residents within a safe, inclusive environment.

Figure 33: Phased Strategy for Social and Community Infrastructure in Informal Settlements

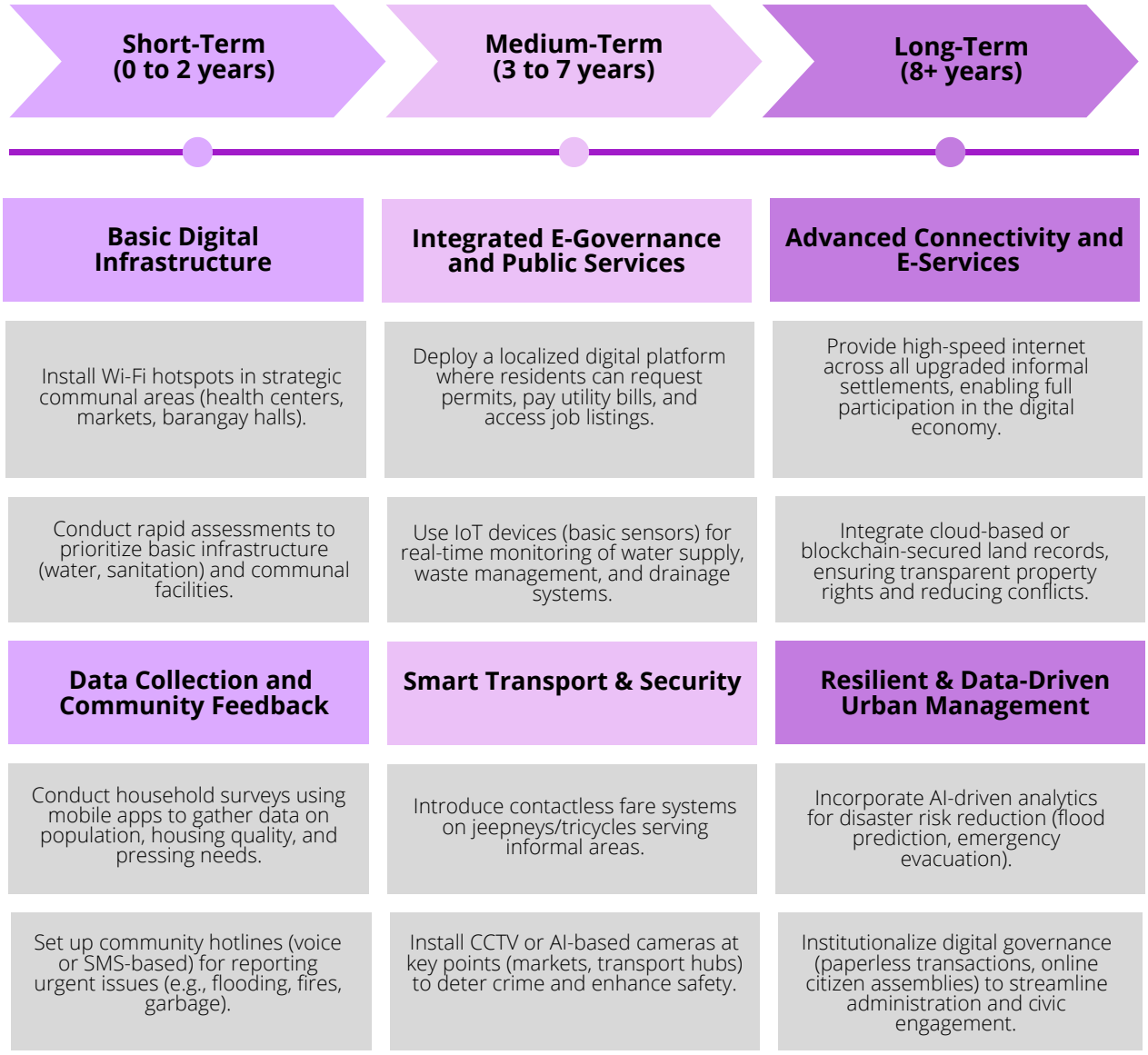

Figure 34: Phased Strategy for Digital Connectivity in Informal Settlements

Finally, digital connectivity ensures that no community is left behind in the information age. Early interventions include installing Wi-Fi hotspots in public gathering places and conducting household surveys to gather crucial data. Over the medium term, localized digital platforms simplify public services—allowing residents to process permits, pay utility bills, or find job listings online. By the long term, high-speed internet and advanced tools such as AI-driven analytics and blockchain-secured land records solidify these neighborhoods' place in a modern, efficiently governed city.

IV. GOVERNANCE AND POLICY IMPLICATIONS

The Philippines' adoption of the 15-minute city model—a hyper-local urban framework where essential services are within a 15-minute walk or bike ride—would require far-reaching governance reforms that leverage and more robustly enforce existing environmental and sustainability legislation. Although the country's decentralized system grants autonomy to local governments under the 1991 Local Government Code, many LGUs still lack the technical capacity to implement compact zoning, walkable streetscapes, and integrated mass transit. Moreover, fragmented coordination among barangays, city governments, and agencies like the Department of Public Works and Highways (DPWH) often impedes cohesive urban planning.

In parallel, a suite of national laws—including the Climate Change Act (RA 9729), the Philippine Clean Air Act (RA 8749), the Energy Efficiency and Conservation Act (RA 11285), the Renewable Energy Act (RA 9513), and the Ecological Solid Waste Management Act (RA 9003)—already mandates critical measures for reducing emissions, improving air quality, optimizing energy use, and managing waste sustainably (Legarda, 2024). By integrating 15-minute city principles into the enforcement of these existing laws—rather than passing entirely new ones—LGUs can accelerate compliance with climate and environmental standards while enhancing quality of life. Strengthening metropolitan governance bodies (e.g., the Metro Manila Development Authority) and building LGU capacity through technical training programs will be vital to orchestrating cross-sectoral planning, from low-emission transport strategies to sustainable land-use policies. When effectively aligned, these legal frameworks and governance reforms can catalyze a resilient, people-centered urban landscape and help the Philippines reach its broader sustainability and climate goals.

Land use reforms pose another challenge, as over 30% of urban Filipinos reside in informal settlements, often in hazard-prone areas. The 15-minute city's emphasis on mixed-use zoning would require legalizing informal economies and upgrading slums while securing land tenure for marginalized communities. Resistance from landowners and political elites, who often prioritize commercial enclaves over inclusive development, complicates efforts to repurpose underutilized spaces. Integrating Community Land Trusts (CLTs) to protect informal settlers' rights and leveraging the Urban Development and Housing Act (Republic Act 7279, 1992) for in-situ upgrading could mitigate displacement risks. However, relocating communities from livelihood hubs, as seen in Manila's failed resettlement projects, underscores the need for participatory approaches that prioritize proximity to jobs and services.

Transportation equity is equally pressing. The model's focus on walkability and public transit clashes with the Philippines' car-centric infrastructure, where only 3% of Metro Manila's road space is dedicated to sidewalks. Jeepneys and tricycles, which provide critical last-mile connectivity, are often excluded from formal planning. A National Active Mobility Act could mandate walkable streets and protected bike lanes, while formalizing informal transport networks through subsidies and route optimization. For example, Marikina City's bike lane network and Iloilo City's pedestrianized Calle Real demonstrate localized successes, but scaling these initiatives nationally demands reallocating budgets from road-widening projects to pedestrian upgrades.

A successful 15-minute city requires seamless integration of multi-modal transportation systems—walking, cycling, jeepneys, buses, and rail—to ensure efficient connectivity between hyper-local hubs. Currently, the lack of coordination between modes leads to fragmented journeys; for instance, commuters often face long waits transferring from jeepneys to the MRT. Governance bodies must prioritize intermodal hubs that centralize transfers, such as linking jeepney terminals with future Metro Manila Subway stations. The Public Utility Vehicle Modernization Program (PUVMP) could be expanded to formalize routes and schedules, while digital tools like unified fare cards (e.g., Beep Card) and real-time apps could streamline travel across modes. Lessons from Medellín's cable cars and Curitiba's BRT systems show how integrating informal and formal transit can reduce travel time and costs. However, this demands centralized oversight, potentially through a National Transport Authority, to harmonize competing interests between LGUs, transport cooperatives, and national agencies.

Participatory governance is vital to prevent the 15-minute city from exacerbating inequality. Without safeguards, walkable neighborhoods risk becoming enclaves for elites, as seen in Bonifacio Global City. Weak enforcement of inclusionary zoning and limited community engagement in planning—often due to bureaucratic or political capture—heighten gentrification risks. Establishing People's Councils to co-design projects with residents and urban poor groups, as piloted in Surabaya, Indonesia, could foster inclusivity. Linking 15-minute city projects to the UDHA's Balanced Housing Development requirements, which mandate affordable housing in new developments, would further ensure equity.

Climate resilience must also be integrated, given the Philippines' extreme vulnerability to floods and heatwaves. Aligning 15-minute city plans with the National Climate Change Action Plan (NCCAP) and RA 10121 (Disaster Risk Reduction Act) would prioritize flood-resilient infrastructure, green spaces, and decentralized utilities. For instance, permeable pavements and micro-grids in hyper-local hubs could mitigate flooding and power outages, as tested in flood-prone cities like Jakarta.

Financing remains a hurdle. LGUs' reliance on the Internal Revenue Allotment (IRA) limits fiscal autonomy, while corruption risks, such as overpriced bike lane projects, undermine public trust. Creating a 15-minute City Fund supported by national grants, public-private partnerships (PPPs), and carbon credits, alongside blockchain-based transparency tools, could enhance accountability.

In Metro Manila, applying the model would require converting underused spaces—such as Quezon City's vacant lots—into mixed-use hubs and expanding pedestrian zones in commercial districts like Makati's Población. However, success hinges on political will to challenge car-centric norms and elite interests. Without reforms to decentralize power, prioritize equity, and integrate climate resilience, the 15-minute city risks replicating exclusionary urban fantasies rather than fostering inclusive, sustainable communities.

V. CONCLUSION

The findings of this study underscore the importance of adapting the 15-minute city concept to Metro Manila's diverse urban conditions: informal settlements, inner-city districts, and outer suburbs. Despite the theoretical appeal of ensuring all essential services are within a short walk or bike ride, Metro Manila's fragmented urban landscape and deeply rooted socioeconomic disparities create a unique set of challenges and opportunities. Nonetheless, by employing a time-phased strategy—encompassing short-term (0–2 years), medium-term (3–7 years), and long-term (8+ years) measures—local governments, urban planners, and private stakeholders can gradually transform these typologies into more inclusive and sustainable neighborhoods.

For informal areas, which are often typified by high population densities, constrained dwelling sizes, and limited access to basic services (UN Habitat, 2016), initial improvements focus on strengthening basic infrastructure and participatory land use planning. Short-term interventions include secure interim occupancy agreements, micro-finance support for local entrepreneurs, and the implementation of walkways, lighting, and tactical urbanism to enhance connectivity. Over the medium and long term, the goal shifts toward formalizing these settlements—providing in-situ upgrading, robust transport links, and incremental site-and-service improvements to ensure residents can readily access healthcare, education, and job centers within their immediate vicinity. Comprehensive redevelopment, flood resilience, and net-zero building standards follow to create equitable, safe, and climate-adaptive communities.

In inner-city districts, which are typically high-density cores blending commercial, institutional, and residential uses (UN Habitat, 2016), the 15-minute city approach hinges on leveraging existing density while mitigating congestion. Short-term measures might include car-free weekends, pop-up bike lanes, and mixed-use pilot blocks to encourage walking and cycling. Medium-term strategies emphasize integrated public transit systems—such as expanded BRT lines or improved rail connections—and the conversion of underutilized buildings or parking lots into pedestrian-friendly, mixed-use developments. Over time, ensuring affordable housing, inclusive zoning reforms, and robust social infrastructure becomes paramount to preserve socioeconomic balance. The final outcome is an economically dynamic, culturally vibrant district where daily needs and employment are conveniently located close to residential areas.

Outer suburbs in Metro Manila face a different set of challenges, often exhibiting low-density sprawl and dependency on private vehicles. Here, short-term initiatives include flexible zoning that enables small "pocket hubs" of commercial activity within subdivisions, as well as "park-and-ride" facilities to entice commuters to use public transport. Medium-term strategies revolve around developing suburban town centers with mixed-use mid-rise buildings near transit nodes and expanding feeder systems to connect residential pockets with major transport corridors. By the long term, these efforts culminate in comprehensive, transit-oriented neighborhoods featuring high-value industries, green spaces, and advanced digital integration, all while maintaining sufficient open areas and adopting climate-resilient design.

Ultimately, the application of the 15-minute city concept in Metro Manila demands a nuanced, inclusive framework that addresses the specific constraints and strengths of each urban typology. The interplay of short-, medium-, and long-term solutions ensures that smaller, immediate gains in walkability, access to services, and economic opportunities can scale into broader structural shifts, from reformed land use policies to advanced transit systems. Through sustained collaboration between government agencies, local communities, and the private sector, Metro Manila can transition toward a more equitable, efficient, and resilient metropolitan region—one in which all residents, regardless of where they live, can enjoy the benefits of a 15-minute city.

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