

Title Towards Mobility Justice in Cape Town

Completed in November 2025

Author Dr. Ruth Joan Nelson

Design Agata Smok

Disclaimer This project has received funding from

©TU Delft | Global Initiative, 2025.

For any use or reproduction of elements that are not owned by the TU Delft | Global Initiative, permission may need to be sought directly from the respective right holders.

This document has been prepared for the TU Delft | Global Initiative however it reflects the views only of the author, and the TU Delft | Global Initiative cannot be held responsible for any use which may be made of the information contained therein.

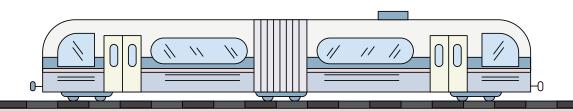


Science for the benefit of people. All people. Worldwide.

TOWARDS MOBILITY JUSTICE IN CAPE TOWN

Author Dr. Ruth Joan Nelson

> Design Agata Smok





Dr. Ruth Joan Nelson has a Master's in Architecture (Nelson Mandela University), MRes. in Space Syntax (University College London) and PhD from Delft University of Technology. Her practice and research are embedded in systems thinking approaches and evidence-based on methods that draw on data science,

digital technologies, AI, complex network science, urbanism, architecture and sociology. Her skills lie in linking data analysis and computational methods with decision-making for urban planning, design and policy. She frequently collaborates with public organisations such as TU Delft Global (Netherlands), Urban AI (France), the Local Government Information Unit (UK) and Young Urbanists (South Africa). Her aim is to support the development of more equitable policies and design solutions through participatory processes by harnessing the power of digital technologies and spatial data science.



Agata Smok is a communication designer with focus on visual storytelling that translates technical concepts into accessible formats. She frequently collaborates with government agencies, and research institutes working on topics such as renewable energy, climate change, impact finance, and social justice. Her aim is to support

sustainable development through strategic visual communication that informs, inspires, and drives change.

Contents

- 8 Introduction
- Why public transport matters in Cape Town
- Framing the problem
- Research approach
- Recommendations: Towards transport justice in Cape Town
- Concluding reflection on actionable pathways

Introduction

Inequality is one of the greatest challenges facing cities today. Over 70% of the world's population lives in countries where inequalities have increased in the past three decades (World Inequality Report, 2022). While income disparities are a central issue, inequality is increasingly understood as a multidimensional problem (Nelson et al., 2024). Cities make inequalities visible and enduring through spatial segregation, unequal access to services, and barriers to opportunity (Nijman & Wei, 2020). These patterns result in certain populations and regions being denied access to economic, social and educational opportunities that have the potential to improve their well-being and livelihoods.

World Inequality Report, 2022

Global and national frameworks such as the United Nations' Sustainable Development Goals (SDGs), and South Africa's Spatial Planning and Land Use Management Act (SPLUMA, 2013) call for more just, inclusive, and sustainable cities. In Cape Town, the Comprehensive Integrated Transport Plan (CITP, 2023:3) lays out a vision for a fully multimodal transport system that offers all residents "efficient access to a range of opportunities in a sustainable and dignified manner."

However a gap remains between these policy visions and the lived experience of daily commuters. With the decline of rail services and growing urban pressures, most South Africans now rely on road-based transport. Daily commutes are often long, costly, and unpredictable. Simultaneously, the City of Cape Town faces limited jurisdiction over key transport modes, budget constraints, and institutional fragmentation (Nelson et al., 2025a).

Despite these challenges, this policy brief focuses on areas where the City does have agency, where practical decisions have the potential to shape a more equitable urban future. The brief draws on research conducted by Ruth Nelson and colleagues at Delft University of Technology, which explores equitable transport planning in Cape Town. The full paper is available here.

Research conducted by Ruth Nelson and colleagues at Delft University of Technology is available here

This brief is intended for municipal officials and elected representatives in the City of Cape Town, but it may also be relevant to other cities facing similar challenges, especially in the global South. It covers:

- 1. Why public transport matters in Cape Town
- 2. A reframing of the core policy problem
- 3. A summary of the research approach
- 4. Key findings
- 5. Recommendations
- 6. A concluding reflection on actionable pathways



Open Access Paper: **Constructing Just Mobility Futures**

Why public transport matters in Cape Town

Cape Town's transport crisis was brought into sharp focus during the 2023 minibus taxi strike. The city-wide shutdown lasted seven days, following a breakdown in negotiations between the City of Cape Town and the South African National Taxi Council [1] (SANTACO). The strike disrupted public life, halted businesses, and drew national and international attention. With no viable alternatives, many workers lost wages, and approximately 287,000 learners missed school. For Cape Town's poorest communities, those most dependent on public transport, mobility came to a standstill.

The strike disrupted public life, halted businesses, and drew national and international attention

With no viable alternatives, many workers lost wages, and approximately 287,000 learners missed school

The strike highlighted the central role that minibus taxis play in Cape Town's transport system. These services emerged informally under Apartheid to meet the needs of those classified as the "non-White" urban population. They have since become a dominant mode, growing from 12% of modal share in 2013 to 26% in 2020 (National Household Travel Survey, 2020). Despite their importance, minibus taxis remain under-requlated and are the only public transport system that is not subsidised. Each operator requires an operating route license, issued for free by the provincial government to taxi associations - but internal fees charged by taxi associations for each can reach up to R100,000. This has fostered intense competition, rivalry, and informal control over routes. Furthermore it is well known that the minibus taxis operate without paying tax.

^{» 1} SANTACO is South Africa's national representative body for the minibus taxi industry, established in 2001.

At a structural level, the strike exposed:







The strike underscored that public transport is not only critical for economic productivity, but is essential for citizens'daily access to education, employment, and healthcare. For Cape Town to become a more inclusive and resilient city, a more coordinated, equitable, and robust public transport system is essential.

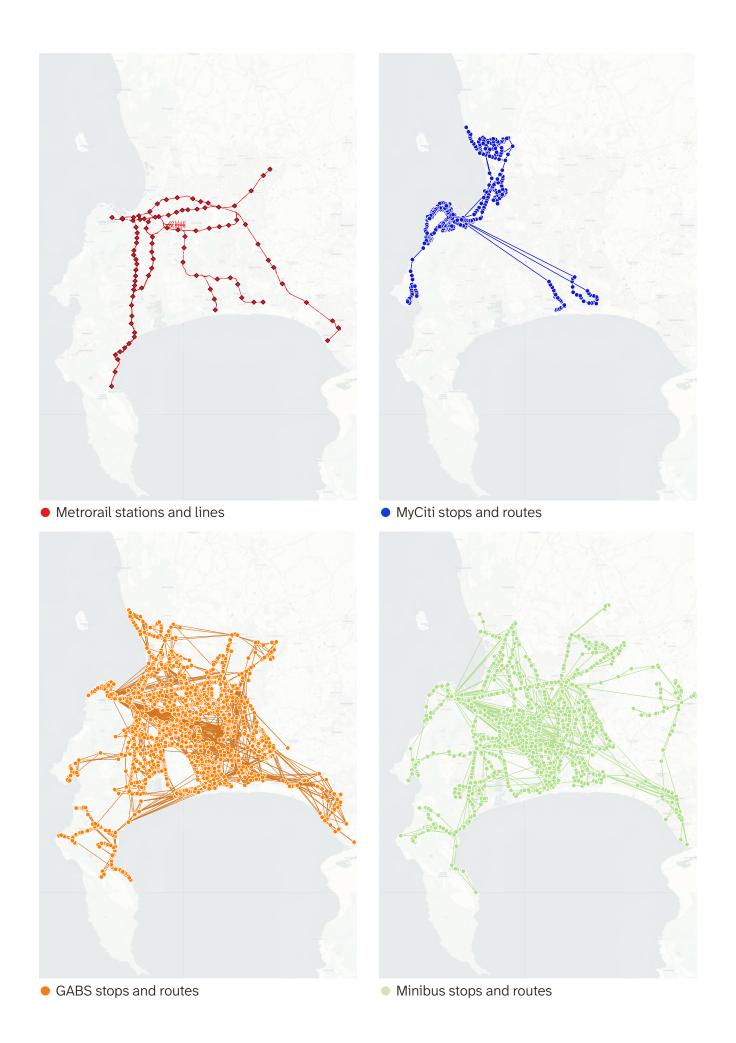
Framing the problem

The 2023 taxi strike made clear that minibus taxis are not a supplementary mode of transport; they are essential to Cape Town's transport system. Composed of hundreds of independent operators, the sector has scaled rapidly to meet growing demand. Meanwhile, the formal railway system, run by the state-owned PRASA, has seen continued operational and financial decline.

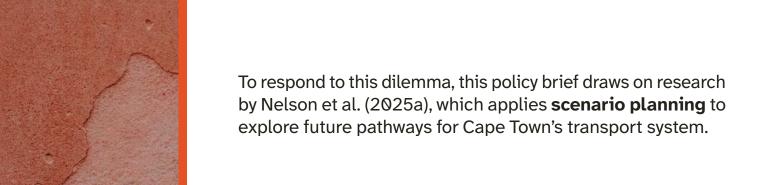
Golden Arrow Bus services (GABs), a privately operated but publicly subsidised service, offers an extensive network but struggles to maintain high-frequency service. This is due in part to budget constraints and mono-directional travel patterns - buses run full in one direction and empty in the other. Both GABs and minibus taxis face heavy congestion, as they share road space with private vehicles and lack priority lanes or signal systems.

The MyCiTi Bus Rapid Transit (BRT) system, the only mode directly operated by the City of Cape Town, serves mainly the City Bowl and northern suburbs. The historically disadvantaged south-eastern neighbourhoods, by contrast, have limited access to any high-quality public transport options. Active travel is also poorly supported, with limited safe infrastructure for walking or cycling. Most residents are "captive users" of public transport relying on it because they simply cannot afford a private vehicle. See Figure 1 for visualisations of the distribution of stops and routes provided by the PRASA owned MetroRail, locally run MyCiti BRT, privately operated Golden Arrow Bus and Minibus Taxi Systems.

Figure on the next page illustrates the spatial coverage of Cape Town's four main transport systems: MetroRail, MyCiTi BRT, Golden Arrow Buses, and Minibus Taxis.



The current transportation system is fragmented, overstretched, and inequitable. How can we move toward achieving the Sustainable Development Goals, spatial justice (as articulated in SPLUMA), and equitable accessibility (as outlined in the CITP, 2023), when most citizens lack real mobility choices and the government lacks full control over the systems in operation?



Scenario planning is particularly useful in contexts of deep uncertainty, such as transport governance in Cape Town. Rather than predicting one outcome, it allows planners and policymakers to examine multiple possible futures based on key development drivers, helping design policies that are robust and adaptable under a range of conditions.

Spatial justice aspects:



Distributive:

Equitable allocation of public transport resources.



Procedural:

The fairness of the processes through which mobility is negotiated planned, and designed.



Context:

Values differ across contexts.



Research approach

This policy brief draws on the research conducted by Nelson et al. (2025a). The full methodology and findings can be accessed here. Below is a summary of the approach used to generate the recommendations in Section 6 "Recommendations: Towards transport justice in Cape Town" on page 32.

The full methodology and findings can be accessed here

The research aimed to assess the equity impacts of different transport futures in Cape Town by combining stakeholder insights with spatial modelling. The process involved four key steps:

Governance analysis

A review of Cape Town's transport institutions and policies to understand who shapes mobility decisions and how.

Stakeholder engagement

Eight semi-structured interviews and a participatory workshop were conducted to identify the drivers of change in urban accessibility. Key themes were developed into four exploratory scenarios.

llysing a number of the proposential strength of the proposed strength y highlights how transportation accessibility is not only an engineering problem, but a human them related to institutional capacity, trust, coordination, community agency and political vision. their implications both for the broader field and the CoCT. We conclude by reflecting on areas for future note, comprising four stages. Subsequently the Results are presented, followed by a discussion of the Methodological and the Coff Was conclude he collections are presented. y words: transport scenarios, urban modelling, stakeholder engagement, accessibility, equity Linking scenario planning and equity accessibility research United Nations' Sustainable Development Goals (SDGs) call for planning that fosters a more eq-United Nations' Sustainable Development Goals (SDGs) call for planning that fosters a more eq-ble and socially inclusive urban future. Central to the United Nations' approach to human and aliable development is Amertya Sen's Capabilities framework, which proposes that development aliable development is Amertya Sen's capability to lead the life they choose by ensuring meaning and focus on expanding each person's capability to lead the life they choose porary scenario planning emerged as a strategic foresight tool developed by the think tank.

D Corporation, in the 1950's, to support the United States Military in investigating policy and their consequences to improve decision making in the highly uncertain Cold Way eliments. aliable development is Amartya Sen's Capabilities framework, which proposes that development all focus on expanding each person's capability to lead the life they choose by ensuring meaning. Second the life they choose by ensuring meaning and focus on expanding each person's capability to lead the life they choose by ensuring meaning. Empirical studies consistently access to opportunities that improve their well-being (Sen, 1999). Empirical studies disadvantage when the proposed in the contract of the con Corporation, in the 1950's, to support the United States Military in investigating policy and their consequences to improve decision making in the highly uncertain Cold War climate (1998). The technique focused on developing alternative "narratives" of the future, written penals in the future, referred to as scenarios. In the 1970s, scenario. access to opportunities that improve their well-being (Sen, 1939). Empirical studies consistently
ow that barriers to accessibility can trap individuals in a cycle of poverty, reproducing disadvantage
ross generations (Nijman and Wei, 2020). Consequently realising more socially inclusive and just deleon generations (Nijman and Wei, 2020). Consequently realising more socially inclusive and
leon generations (Nijman and Wei, 2020). 1998). The technique focused on developing alternative "narratives" of the future, written expectives of different people in the future, referred to as scenarios. In the 1970s, scenarios are popularity as a business strategy tool, when it was famously adopted by the oil company enior management think about the long-term challenges the business could face (Menzies 2020; 42). Over the last fifty years, many different schools of thought and a multitude generations (Nijman and Wei, 2020). Consequently realising more socially inclusive and just de-plopment requires addressing the factors that will improve access to socio-economic (Troost et al., 2023). as employment (Zhu and Shi, 2022), besithcare (Pereira et al., 2016), and education (Troost et al., plopment requires addressing the factors that will improve access to socio-economic opportunities such as employment (Zhu and Shi, 2022), bealthcare (Pereira et al., 2016), and education (Troost et al., 2023). enior management think about the long-term changings the business could face (Menzies 2020; 42). Over the last fifty years, many different schools of thought and a multitude a scenario planning have arisen within different research groups, geographical locations any kinds of problems (Bradfield et al., 2005). In the 1990s scenario planning began Transportation and urban development takes place within a complex institutional context and thus can be considered a wicked problem as it is not only technical in nature, but also political (Machies can be considered a wicked problem as it is not only technical in nature. scenario pianning nave arisen within different research groups, geographical locations any kinds of problems (Bradfield et al., 2005). In the 1990s scenario planning began attack urban planning approach to devote desired relative for the future (Assistant Research planning began attack as the future (Assistan Transportation and urban development takes place within a complex institutional context and thus can be considered a wicked problem as it is not only technical in nature, but also political (Machiels et al., 2023; Rittel and Webber, 1973). Multiple forces, ranging from private investment, policy decisions any kinds of problems (Bradfield et al., 2005). In the 1990s scenario planning began ategic urban planning approach to develop desired urban visions for the future (Avin 120). More recently, the focus has shifted to create scenarios that stakeholders may bable (Avin and Goodspeed, 2020). The purpose being to deepen an understanding can be considered a wicked problem as it is not only technical in nature, but also political (Machiels et al., 2023; Rittel and Webber, 1973). Multiple forces, ranging from private investment, policy decisions to elimate change drive development in ways that are often difficult to predict leading to high degrees et al., 2023; Rittel and Webber, 1973). Multiple forces, ranging from private investment, policy decisions to elimate change drive development in ways that are often difficult to predict leading to high degrees of uncertainty. This complexity poses a challenge when planning for a more just future, as traditional of uncertainty. This complexity poses a challenge when planning for uncertainty in the predictive data and modelling techniques struggle to account for uncertainty. (20). More recently, the focus has shifted to create scenarios that stakeholders may table (Avin and Goodspeed, 2020). The purpose being to deepen an understanding future development, such as changing levels of economic growth or the public's scaling towards carbon nearrality (Lyons et al. 2018). In this paper we employ scenario planning as a planning support tool, as it explicitly embraces un-certainties, with the intent of preparing organisations to adapt to multiple outcomes. Scenario planning certainties, with the intent of preparing organisations to adapt to multiple outcomes. Scenario planning has a long history of being applied across different sectors such as the military (Ringland, 1998), energy along history of being applied across different sectors such as the military (Ringland, 1998), energy (Ringland, 1998), and water management (Dong et al., 2013). It has become a common approach (Blondeel et al., 2024) and water management In this paper we employ scenario planning as a planning support tool, as it expli-certainties, with the intent of preparing organisations to adapt to multiple outcomes has a long bistory of being applied across different success which as the military (Rich has a long bistory of being applied across different success such as the military (Rich bis a long history of being applied across different sectors such as the military (Ringland, 1998), energy (Blondeel et al., 2024) and water management (Dong et al., 2013). It has become a common approach within transportation research to understand the varying impacts of transportations which shape the future conditions (Lyons et al., 2021). By focusing on the uncertainties which shape the future conditions (Lyons et al., 2021). within transportation research to understand the varying impacts of transportation planning under dif-ferent future conditions (Lyons et al., 2021). By focusing on the uncertainties which shape the future and how they could change, scenarios generate a representation of a system and are not an exact science ferent future conditions (Lyons et al., 2021). By focusing on the uncertainties which shape the future and how they could change, scenarios generate a representation of a system and are not an exact science (Paddeu and Lyons, 2024).

Scenario development

The scenarios were validated through expert input and designed to reflect diverse political, institutional, and spatial pathways.

Equity-based accessibility modelling

Each scenario was evaluated using the MAP comparative equity framework, see Figure 2 (Nelson et al, 2025b). This involved building Urban Network Models (UNMs) — spatial network models which combine transport and land use systems to assess how many employment opportunities are reachable from each neighbourhood in Cape Town.

Equality framework

prioritises equal access for all neighbourhoods.

Utilitarian framework

emphasises access for the neighbourhoods with the largest working populations.

Rawlsian framework

focuses on improving access for the most socio-economically disadvantaged neighbourhoods.







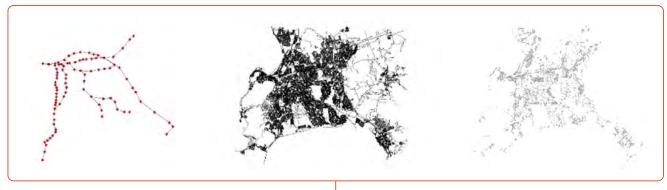
This analysis provides insight into how specific transport interventions affect spatial equity in Cape Town, particularly access to employment — a longstanding measure of urban opportunity and social mobility.

MAP: Mapping Accessibility for Ethically Informed **Urban Planning**

Figure below presents MAP, which is composed of three stages: 1. Development of an Urban Network Model (UNM) for each case, 2. Calculating Neighbourhood Reach Centrality (NRC) for every neighbourhood and 3. Developing and applying metrics for Spatial Justice based on three ethical perspectives of Equality, Utilitarianism and Rawls' Egalitarianism for comparative purposes. Reference: Nelson et al, 2025b.

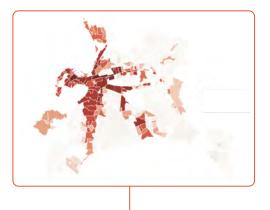
Creation of Urban Network Model:

links transport, land use and streets



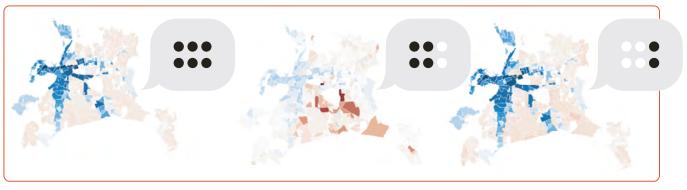
Neighbourhood Reach Centrality:

existing access



Spatial Justice Metrics:

gap between existing and ideal



Equality Reach Gap

Utilitarian Reach Gap

Rawls 'Reach Gap

Based on thematic analysis of interviews and a stakeholder workshop, four scenarios were developed to model potential trajectories for Cape Town's transport system:

- 1. Current Scenario the present-day system, serving as a baseline scenario.
- 2. Business as Usual continuation of past trends without reform.
- 3. Integration Scenario a fully integrated, multimodal transport network.
- 4. Active Travel Scenario prioritisation of walking and cycling in a low-carbon future.

For each scenario, models were created to assess:

- Cumulative accessibility to jobs within 15, 30, 45 and 60-minute travel times.
- **Equity of access**, evaluated across three ethical frameworks:
 - » **Equality** (equal opportunity),
 - » Utilitarian (greatest good for the greatest number),
 - » Rawlsian (prioritising the most disadvantaged).

Neighbourhoods were assessed based on whether they met minimum justice thresholds (coded as 0 and above for meeting requirements, below 0 for falling short). The following pages present each scenario.



This approach can be reproduced in other cities. An open-source MAP software package is available on GitHub. It allows for: 1) the creation of an urban network model, which links transport, streets and land use in one large graph; 2) the calculation of Neighbourhood Reach Centrality, a cumulative accessibility metric; 3) the calculation of three metrics of spatial justice.

CURRENT SCENARIO (BASELINE)

The current transport system is fragmented and poorly integrated, with parts of the railway being non-operational. Institutional frameworks lack coordination and political will, with strained relationships among stakeholders, particularly between the government and the minibus taxi industry.

This sector, though vital, is marked by internal conflict, high internal licensing costs, and limited support, disproportionately affecting the poor, who spend up to 40% of their income on transport.

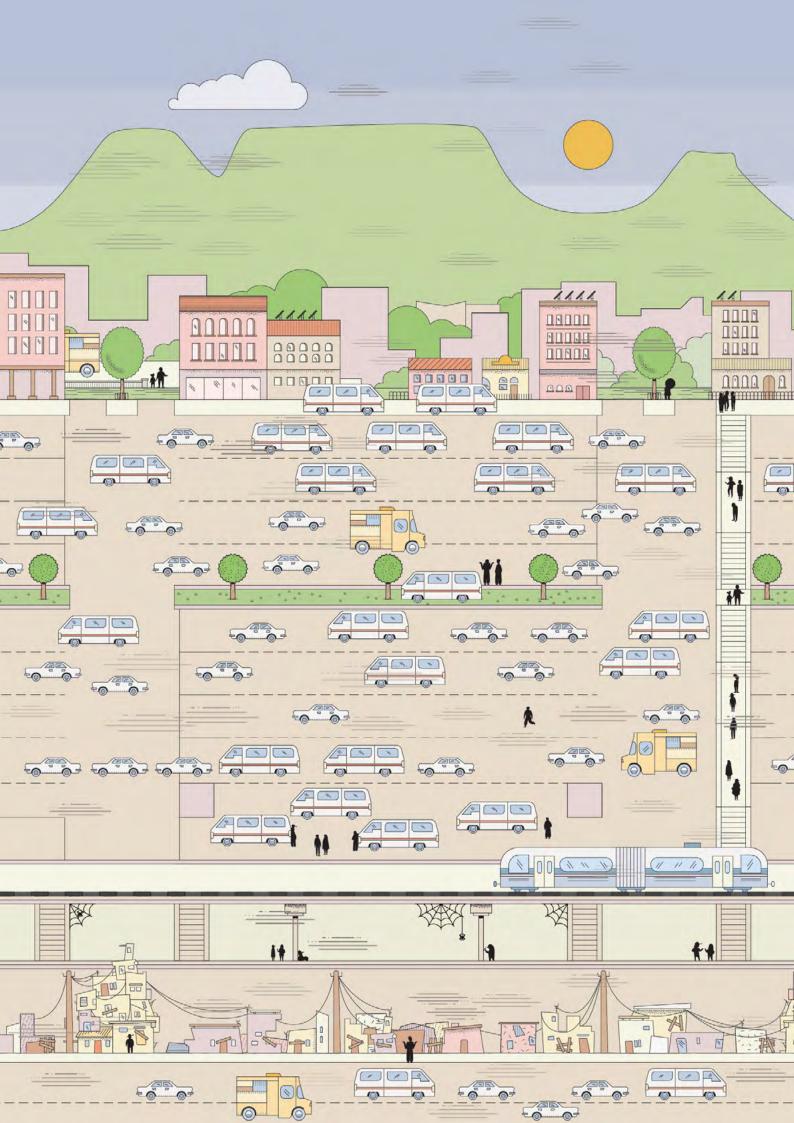
Public transport is perceived as unsafe, and unreliable. Local government and transportation stakeholders operate in silos resulting in inconsistent planning and service delivery. Although an integrated transport plan exists, it lacks actionable implementation and political backing, leaving the system reactive and disconnected from community needs.

See figure on the next page for a visual depiction of the Current Scenario.

Equity results:

Travel Time	Equality	Utilitarian	Rawlsian
60 minutes	42%	55%	44%
15 minutes	32%	47%	31%

Figure on the right illustrates a visual depiction of the Current Scenario, as described in the main text. Reference: Nelson et al. 2025



BUSINESS AS USUAL SCENARIO

The "Business as Usual" scenario reflects ongoing trends without major reforms. Transport remains fragmented, with no integration between modes, and the declining rail system is left unaddressed, increasing reliance on the overstretched minibus taxi sector.

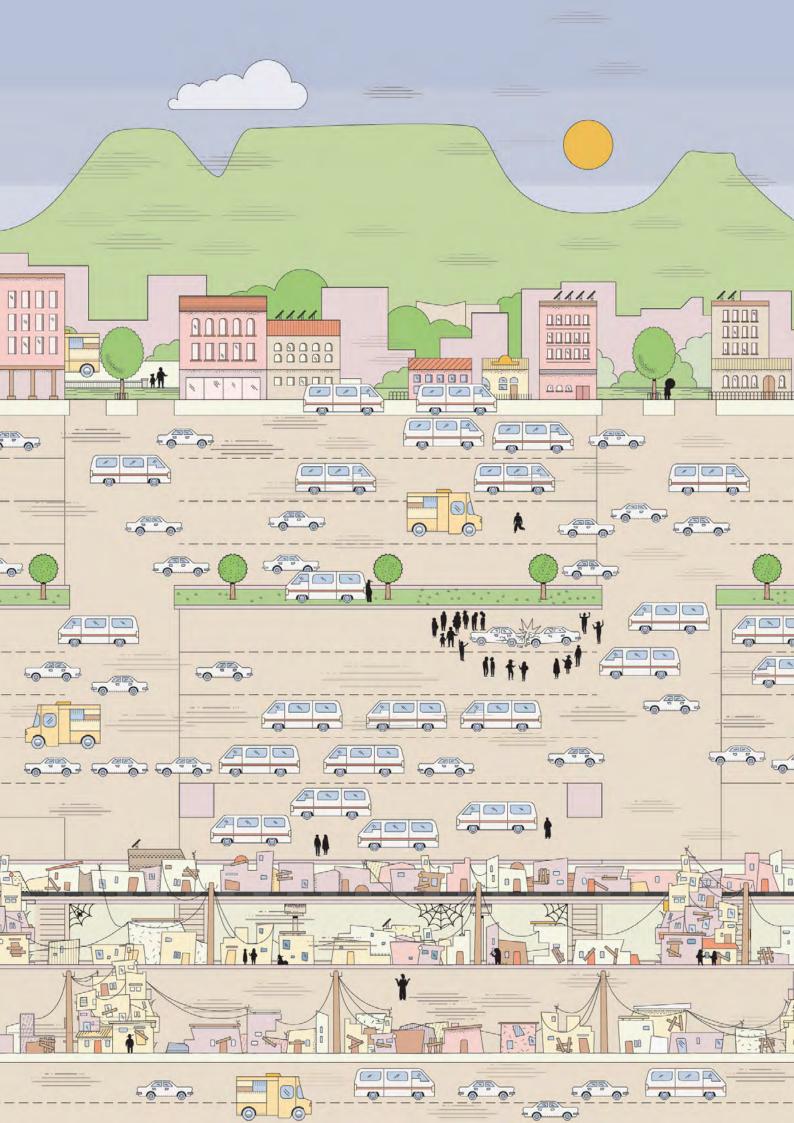
Political will and stakeholder trust continue to erode, and collaboration remains weak. Non-motorised transport is neglected, reinforcing car dependency and worsening congestion. Public transport funding fails to keep up with inflation, leading to underinvestment and deteriorating infrastructure. As a result, mobility becomes increasingly limited, unsafe, and inefficient - especially for the most vulnerable residents.

See figure on the next page for a visual depiction of the Business as Usual Scenario.

Equity results:

Travel Time	Equality	Utilitarian	Rawlsian
60 minutes	38%	50%	37%
15 minutes	29%	44%	27%

Figure on the right illustrates a visual depiction of the Business as Usual Scenario, as described in the main text. Reference: Nelson et al, 2025



INTEGRATED SCENARIO

The "Integration" scenario envisions a shift to a fully multimodal, user-friendly transport network in Cape Town. This requires both technical upgrades and stronger collaboration across all government levels, with meaningful community involvement.

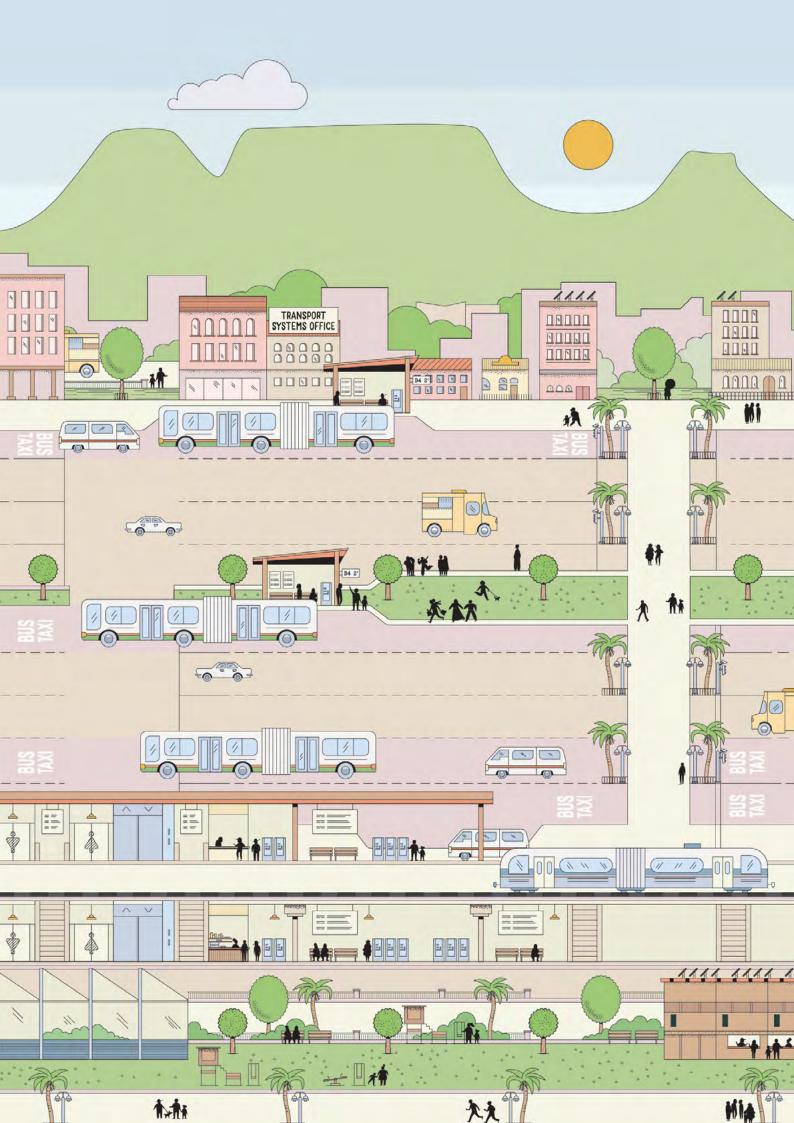
Key features include a unified fare system, synchronised timetables, and seamless transfers between modes like minibus taxis, GABs, and MetroRail. Priority lanes and smart signalling improve travel times and reliability. Institutional integration and trust results in meaningful partnerships between stakeholders ensuring consistent planning, policy, and funding. The result is a coordinated, efficient, and accessible network that encourages public transport use over private cars.

See figure on the next page for a visual depiction of the Integrated Scenario.

Equity results:

Travel Time	Equality	Utilitarian	Rawlsian
60 minutes	58%	63%	59%
15 minutes	28%	47%	28%

Figure on the right illustrates a visual depiction of the Integrated Scenario, as described in the main text. Reference: Nelson et al. 2025



ACTIVE TRAVEL SCENARIO

The "Active Travel" scenario centres on promoting walking and cycling as core modes of transport, supported by major investments in pedestrian and cyclist-friendly infrastructure. Streets are redesigned with wider sidewalks, dedicated bike lanes, safe crossings, and amenities like bike-sharing and secure parking.

This shift supports Cape Town's carbon neutrality goals by reducing car dependence and emissions. Safety, community involvement, coordination and trust across diverse stakeholders is key. Rail remains the backbone for longer trips. with improved reliability and integration into the low-carbon network. Private and public stakeholders collaborate transparently, creating an inclusive, efficient, and resilient mobility system that enhances health, sustainability, and accessibility.

See figure on the next page for a visual depiction of the Active Travel Scenario.

Equity results:

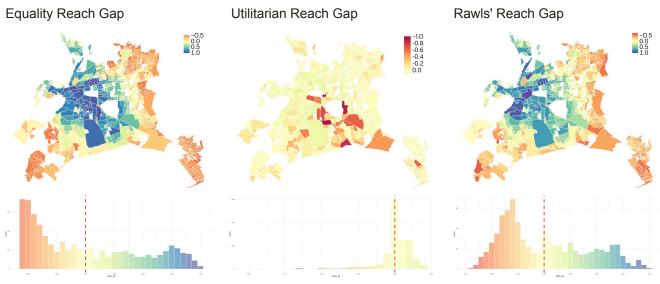
Travel Time	Equality	Utilitarian	Rawlsian
60 minutes	55%	74%	54%
15 minutes	39%	69%	43%

Figure on the right illustrates a visual depiction of the Active Travel Scenario, as described in the main text. Reference: Nelson et al. 2025

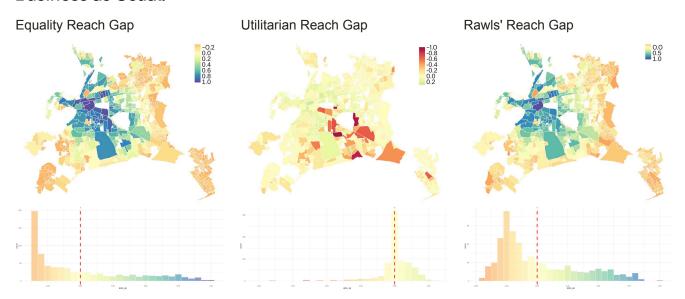


Figure below: Across all scenarios, the Integrated travel with priority lanes for buses and taxis and Active Cycling futures yield the most equitable outcomes. The Business as Usual scenario shows a decline in accessibility and justice, underscoring the consequences of inaction. Reference: Nelson et al, 2025a

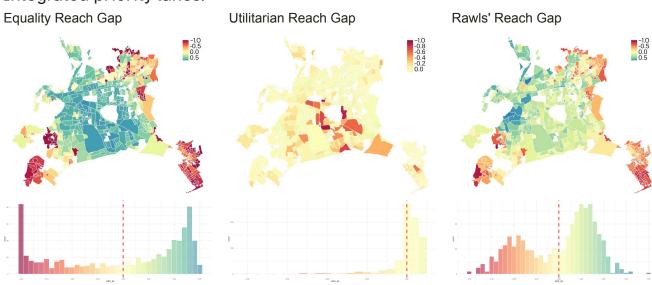
Current (normalised neighbourhood reach gap 60 minutes):



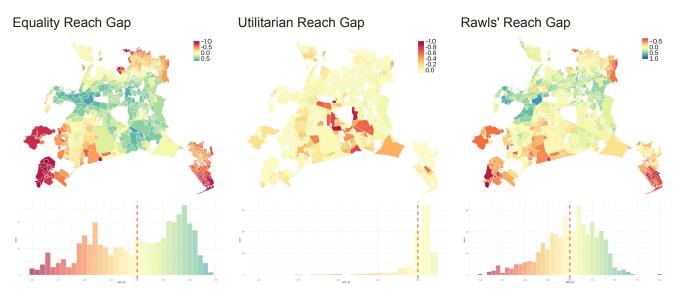
Business as Usual:



Integrated priority lanes:



Active Travel Cycling:



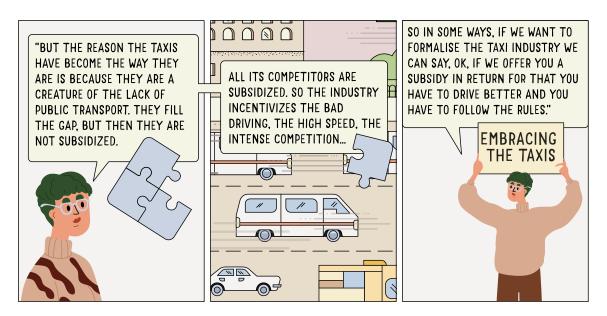
Recommendations: Towards transport justice in Cape Town

Turning now to the core of this policy brief, I outline three key recommendations for local government action. While these are not a comprehensive roadmap and won't solve all of Cape Town's transport challenges, they provide a focused starting point to advance mobility justice.

Rooted in the research of Nelson et al. (2025a) and aligned with the local government's current jurisdiction over infrastructure, these recommendations target critical areas for immediate impact:

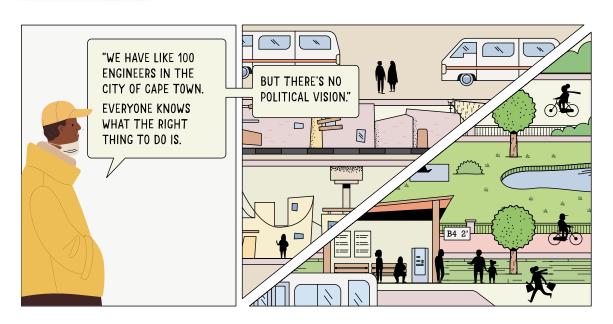


Establishing a Taxi-Government Reconciliation Process.

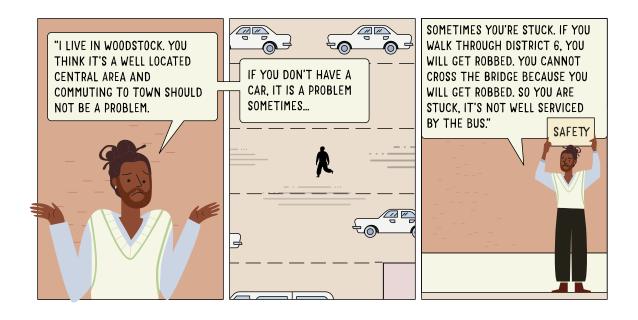




Prioritising cycling to support shorter commutes.

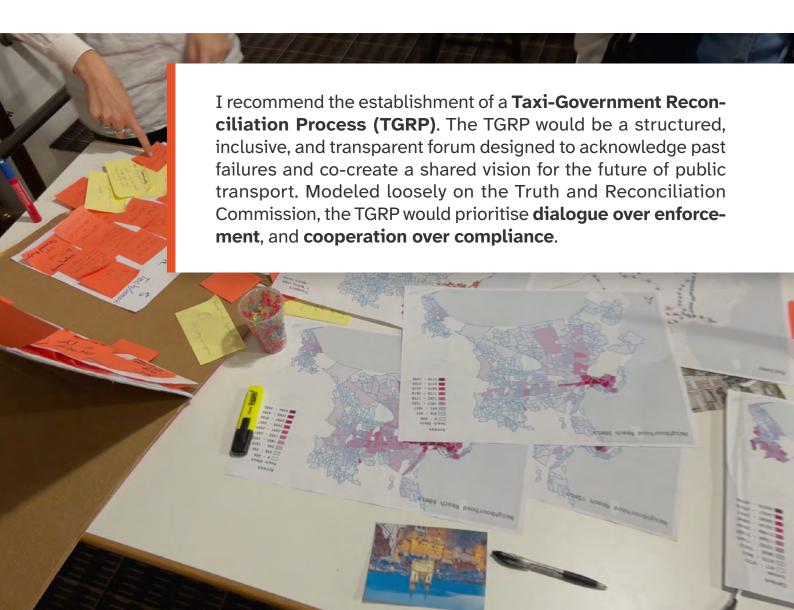


Prioritising dedicated lanes and signalling for Golden Arrow Buses and Minibus Taxis to improve longer commutes.



Recommendation 1: Establish a Taxi-Government Reconciliation Process as a Foundation for Integrated Urban Mobility

A precondition for achieving an integrated, safe, and sustainable transport system in South Africa is the repair of long-standing mistrust between government and the minibus taxi industry. Despite repeated reform efforts, fragmented governance, unresolved historical grievances, and adversarial relationships continue to hinder meaningful collaboration. This undermines progress toward the goals outlined in the Comprehensive Integrated Transport Plan (2023), which calls for multimodal integration across all transport providers.



This process should include:

- ► Thematic hearings and regional forums involving government (national, provincial, municipal), taxi associations, civil society, and commuters.
- Acknowledgment of past harms, including policy neglect, violence, corruption, and exclusion.
- ▶ **Negotiated outcomes** on key issues such as operating licenses, subsidies, safety protocols, taxation, and long-term infrastructure needs.
- Embedded mechanisms for ongoing collaboration, including reporting, monitoring, and trust-building indicators.

Evidence from the **Blue Dot Taxi Programme** shows that partnership-based approaches can incentivise safer, more reliable taxi services (Ribbonaar et al, 2023). Further, as Gordon and Mugar (2020) argue, civic innovation rooted in "relational, slow, and persistent" engagement, not transactional fixes, offers a durable path to rebuilding trust.

The TGRP would lay the groundwork for transitioning the minibus taxi industry from informal rival to formal partner in South Africa's public transport future. Without trust, technical integration will falter. This process is not a silver bullet, but it is a vital first step toward systemic alignment and mobility justice.

Recommendation 2: Unlocking Urban Equity through Cycling for shorter commutes

To complement structural reforms in governance (Recommendation 1), the City of Cape Town should prioritise cycling as a high-impact, low-cost intervention to advance equitable access to employment and public services. Spatial equity analysis shows that enabling all residents to safely cycle for trips of 15-45 minutes would produce the most equitable access outcomes across Cape Town's diverse neighbourhoods (Nelson et al., 2025a).

Unlike rail or bus systems, cycling requires no central operator and is largely within the jurisdiction of the City. It supports low-emission, low-cost, and healthy travel, and encourages modal shift away from private cars. However, Cape Town's current cycling environment remains fragmented, unsafe, and socially inaccessible for many residents.

International case studies show that uptake in cycling is achievable with clear policy leadership, consistent infrastructure investment, and inclusive programming:

- ▶ **London** expanded its cycle network to 400km, reduced speed limits for cars, and partnered with private e-bike firms, leading to a 26% increase in cycling since 2019.
- ▶ Mexico City almost doubled its cycle lanes from 274 kilometers in 2018 to 533 km in 2024 and runs Muévete en Bici, a weekly open-street program closing 50km of roads to cars on a Sunday. Daily cycling trips rose by 71% since 2018.

Based on these models, Cape Town could implement the following:

Short-Term Actions:

- Partner with private e-bike share providers to lower access costs.
- Pilot weekly "Open Streets" programs in target corridors to encourage cycling culture.
- Provide rebates or vouchers for low-income residents to purchase bikes.

Medium-Term Interventions:

- Convert selected car lanes to protected cycle lanes in key commuter routes.
- Expand safe bike parking and create secure charging lockers for e-bike batteries.
- ► Introduce local bylaws to strengthen cyclist protections and speed enforcement.

Long-Term Strategy:

- Develop a citywide cycling masterplan linked to public transport nodes.
- Create community cycling hubs managed by wards to localise maintenance, training, and engagement.



Recommendation 3: Prioritise Bus and Minibus Taxi Lanes to Expand Access for Longer Commutes

The equity analysis identifies faster travel times for buses and minibus taxis as a key lever for improving access to employment and opportunity, especially for longer commutes (Nelson et al., 2025a).





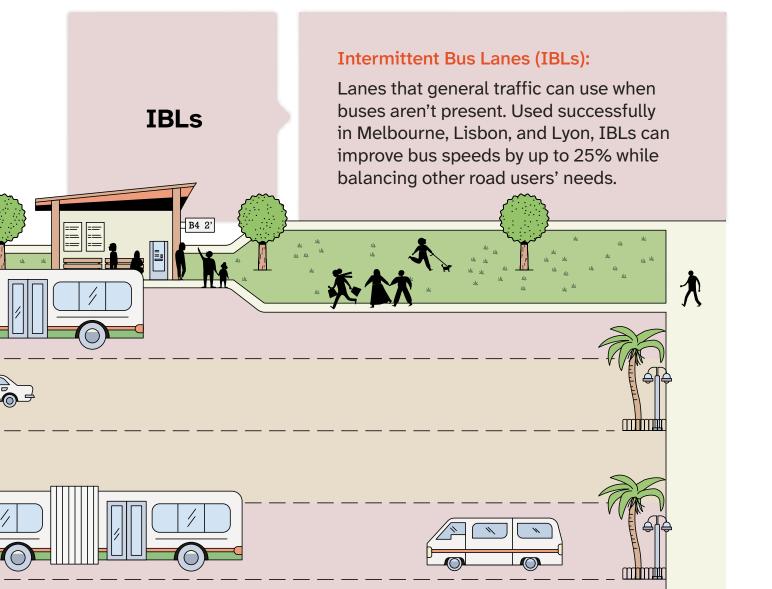
Improving journey time reliability through designated lanes and signal priority is a proven, cost-effective intervention used in cities like London, Paris, Sydney, and Seoul. It also has the potential to:

- ▶ Lower operating costs and fuel use for taxis and buses;
- ► Reduce fares by improving fleet efficiency;
- ▶ Incentivise adherence to road laws and shift car users to public transport.

Exclusive Bus Lanes (EBLs):

Fully reserved lanes for public transport. These offer maximum speed and reliability benefits, but may reduce general traffic capacity unless public mode share is high.

EBLs



Prioritise Bus and Minibus Taxi Lanes to Expand Access for Longer Commutes ▶ **Design considerations** for implementation

Aligning lane use with congestion and demand patterns can maximise efficiency while maintaining road flexibility.

Operating Hours

Lane Sharing Rules

Some cities allow taxis, cyclists, or turning vehicles limited access to bus lanes. These rules must be clearly defined and locally tailored.

International best practice includes a mix of signage, fines, patrols, and camera enforcement. Without enforcement, lanes are frequently ignored.

Enforcement Mechanisms

Prioritise Bus and Minibus Taxi Lanes to Expand Access for Longer Commutes ► Proposed Actions

Short-Term (0-2 years):

Identify 3-5 high-volume corridors for bus/taxi lane pilots.

Conduct feasibility assessments comparing EBLs and IBLs.

Launch a consultative process with taxi associations, GABS, and communities (aligned with Recommendation 1).

Medium-Term (2-5 years):

Install permanent bus/taxi lanes with signage, road markings, and smart signal control.

Pilot shared-use rules (e.g., allowing taxis, not cyclists).

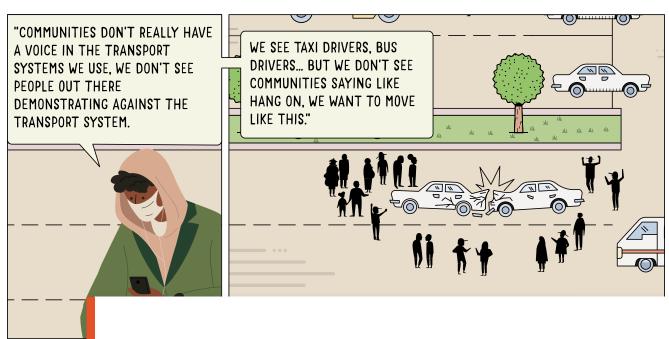
Deploy fixed and mobile enforcement technology.

Long-Term (5+ years):

Integrate priority lanes into all future road upgrades.

Develop a metropolitan bus/taxi speed index to track impact.

Explore integrating BRT-quality lanes for taxis through design adjustments.



Implementing priority lanes for buses and taxis is not just a transport improvement, it's an equity intervention. It brings dignity and reliability to daily commutes and directly addresses spatial inequality in Cape Town's urban form.



What does justice mean to you? Scan this QR code and make your voice count by completing the brief survey.

Concluding reflection on actionable pathways

This brief has outlined three strategic recommendations: fostering reconciliation between transport stakeholders, prioritising cycling for shorter commutes, and implementing designated lanes for buses and minibus taxis to support longer trips. They are grounded in an equity-driven accessibility analysis of Cape Town (Nelson et al, 2025a).

A crucial first step is establishing trust, negotiation, and shared governance among the City, Golden Arrow, taxi associations, and community stakeholders. Jurisdiction over key modes (cycling infrastructure, road regulation, and transit incentives) sits largely with the City, offering a practical foundation for action, but real progress requires collaboration and collective ownership of transport reform.

Equity in access is a contested and political notion, and for this reason, community involvement and transparent decision-making must shape the path forward. The accessibility data presented here is not prescriptive; rather, it should serve as a generative tool, supporting the difficult but necessary conversations required to deliver mobility justice.

The data shows significant potential for cycling to expand access for shorter commutes, while designated bus and taxi lanes could improve travel times for over a third of Cape Town's commuters, particularly the most transport-vulnerable. These targeted interventions, if pursued in parallel with inclusive governance processes, can shift Cape Town's transport system toward one that is more efficient, resilient, and just.

Links:

- Academic paper: doi.org/10.2139/ssrn.5141604
- ▶ Constructing Just Mobility Futures Open Access Paper.
- ▶ Magazine article about the research.
- Survey: What does justice mean to you? Click the link here to have your say! We will use this to directly inform future policy work in this area.

Acknowledgements

This policy brief would not have been possible without the support of many different organisations and people. Firstly I acknowledge and thank the TU Delft Global Initiative for the funding to conduct stakeholder engagement in Cape Town, South Africa and funding this policy brief. Secondly I thank Mark Zuidgeest at the University of Cape Town for sharing the GTFS transportation data used in this study. Thirdly I thank Young Urbanists South Africa and, particularly Roland Postma, for supporting the workshop and stakeholder engagement in Cape Town. Finally, these recommendations would not have been possible without the time given by the participants in the workshop and interviews.

References

- ▶ CITP, 2023. Comprhensive Integrated Transport Plan. Urban Mobility City of Cape Town.
- ▶ Gordon, E., Mugar, G., 2020. Meaningful Inefficiencies: Civic Design in an Age of Digital Expediency. Oxford University Press, Oxford, New York.
- Levinson, D.M., 1998. Accessibility and the journey to work. Journal of Transport Geography 6, 11–21. doi.org/10.1016/S0966-6923(97)00036-7
- National Household Travel Survey. 2020. Statistics South Africa. www.statssa.gov.za/publications/P0320/P03202020.pdf
- Nelson, R., Verma, T., Warnier, M., Pearce, B., 2025a. Constructing Just Mobility Futures. doi.org/10.2139/ssrn.5141604
- Nelson, R., Warnier, M., Verma, T., 2025b. Ethically informed urban planning: measuring distributive spatial justice for neighbourhood accessibility. doi.org/10.21203/rs.3.rs-4293613/v2
- Nelson, R., Warnier, M., Verma, T., 2024. Conceptualizing Urban Inequalities as a Complex Socio-Technical Phenomenon. Geographical Analysis 56, 187-216. doi.org/10.1111/gean.12373
- Nelson, R.J., 2021. The spatial and social logic of the Minibus Taxi network: how access may support social inclusion in Cape Town, South Africa. Applied Mobilities 0, 1–25. doi.org/10.1080/23800127.2021.1926054
- Nijman, J., Wei, Y.D., 2020. Urban inequalities in the 21st century economy. Appl Geogr 117, 102188. doi.org/10.1016/j.apgeog.2020.102188
- Ribbonaar, D., Martin, G., Hendricks, M., Jackpersad, Z., Grey, P., Weber, M., 2023. BLUE DOT TAXI SYSTEM IN THE WESTERN CAPE: SYSTEMS AND TECHNOLOGY OVERVIEW. Presented at the 41st Southern African Transport Conference.
- ▶ SPLUMA, 2013. Spatial Planning and Land Use Management Act.



TOWARDS MOBILITY JUSTICE IN CAPE TOWN

When Cape Town's minibus taxis went on strike in 2023, the city ground to a halt. Nearly 300,000 learners missed school, workers lost wages, and the fragility of South Africa's transport system was laid bare.

In this policy brief, Dr. Ruth Joan Nelson reveals how Cape Town's transport crisis is fundamentally a justice crisis, where your postcode determines your access to opportunity. Drawing on cutting-edge spatial modeling and extensive stakeholder engagement, Nelson maps four possible futures for the city's mobility and shows which pathways lead toward equity.

From reconciling decades of mistrust between government and taxi operators to unlocking the transformative potential of cycling infrastructure, this brief offers three concrete recommendations that municipal leaders can implement today. Nelson demonstrates that with political will and community partnership, Cape Town can move from transport segregation to mobility justice.

Essential reading for urban planners, policymakers, and anyone committed to building more equitable cities.



Dr. Ruth Joan Nelson is a leading expert in spatial data science and urban equity, with degrees from Nelson Mandela University, UCL, and TU Delft. She specializes in evidence-based planning solutions that harness digital technologies for social justice.



Global Initiative