



PEDESTRIANIZATION AND NON-MOTORIZED TRANSPORT ISSUE 3: INFRASTRUCTURE

Encroachment of a footpath along Jogoo road. © CDKN

In this pedestrianization series, we started out the **first issue** with examining the demography of pedestrians. This was useful in understanding the profile and needs of the average pedestrian in Nairobi. The majority of the needs that came to light were either safety- or infrastructure-related. Having dealt extensively with the safety-related concerns in the **second issue**, this **third and final issue** in the series will focus on infrastructure and how it affects the pedestrian experience.

A number of the challenges faced by pedestrians in Nairobi relate to inadequate pedestrian infrastructure. These include lack of footpaths, poorly maintained footpaths, lack of pedestrian crossings, lack of access for persons with disabilities, poorly-lit streets, and the encroachment on footpaths by other road

users. These infrastructure gaps compromise pedestrian safety and health, as well as making the pedestrian experience less enjoyable. In this issue, we examine the highlighted infrastructure challenges and make recommendations based on the standards presented in the Street Design Manual for Urban Areas in Kenya, 2019 (SDMUAK).¹

A survey using questionnaires, observation and photographs engaged with pedestrians on the challenges they faced on 12 busy pedestrian corridors. The survey was conducted in December 2020 by Nairobi Metropolitan Services (NMS), in partnership with the Climate and Development Knowledge Network.

PEDESTRIAN INFRASTRUCTURE CHALLENGES

Note: Where a 'tick' (✓) is indicated, the practice was observed. Non-observance of the practice during the survey does not imply the practice may not exist.

Table 1: Pedestrian infrastructure challenges observed on 12 busy Nairobi corridors

	 Inadequate pedestrian crossings	 Inadequate footpaths (including design shortcomings where footpaths are present)	 Lack of greenery and shade	 Poor street lighting
Park Road (near Guru Nanak)	✓	✓	✓	✓
Park Road (near Muslim Academy)	✓	✓	✓	✓
Likoni Road	✓	✓	✓	✓
Lunga Lunga Road (near Likoni Road)	✓	✓	✓	✓
Lunga Lunga Road (near Donholm)	✓	✓	✓	✓
Komarock Road	✓	✓	✓	✓
Muigai Kenyatta Road	✓	✓	✓	✓
Councillor Opudo Road	✓	✓	✓	✓
Mbagathi Way	✓	✓	✓	✓
Waiyaki Way	✓	✓	✓	✓
Isaac Gathanju Road	✓	✓		✓
Wambui Kenyatta Road	✓	✓		✓

 Lack of protected footpaths (separated lane for pedestrians with barriers such as vegetation on each side)	 Lack of street furniture, adequate litter bins and toilets	 Poor drainage facilities (open drains and/or visible sewage)	 Encroachment of footpaths	 Presence of litter on footpaths	 Inappropriate for persons with disabilities
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓		✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓		✓	✓	✓
✓	✓		✓	✓	✓
✓	✓		✓	✓	✓
✓	✓				✓
✓	✓			✓	✓
✓	✓		✓	✓	✓
✓	✓		✓	✓	✓

Survey findings

 **All corridors lack adequate pedestrian crossings,** making pedestrians vulnerable to road accidents while crossing the road. As per Kenya's street design manual mentioned above, **pedestrian crossings should be located where many people need to cross the street, such as a bus stop, at an entrance to a shopping mall, or where a path intersects the street.** In busy commercial areas, crossings should be spaced at more frequent intervals. **Pedestrians often prefer to cross at street level compared to climbing a stairway in order to cross the street.** In our past issue on safety, we highlighted that on some of the roads, footbridges are underutilized, as pedestrians find that they increase the length of their journeys and prefer to cross the road at street level despite the danger from oncoming traffic.

 **All corridors lack adequate and protected footpaths.** In most cases, footpaths have less than two meters of clear space and are, therefore, not compliant with the street design manual's minimum standard requirements. **Footpaths are also not continuous,** forcing pedestrians to walk on the road. Additionally, the **footpaths are not protected by barriers such as greenery on each side,** and most pedestrians feel exposed to the risk of road accidents especially from motorized traffic.

 **Eight out of the 12 corridors lack greenery and shade.** Eight corridors are located on the eastern side of the city, and the three corridors with some greenery and shade are located on the western side of the city – close to high and middle-income neighbourhoods. This correlates with the fact that the air quality in the western side of the city is better than the eastern side, as was highlighted in our previous issue on 'Air Quality'.²

Greenery plays an important role in providing shade, purifying the air by absorbing polluting gases, and has aesthetic value. The street design manual recommends that trees with high branches are preferable, and medium-height vegetation should be trimmed next to pedestrian crossings to improve the visibility of pedestrians. As pointed out in the 'Users' issue, **unnecessary cutting down of trees to accommodate road expansion is rampant and should be addressed.**

 **Poor street lighting is observed on all corridors.** All corridors have some street lighting, but **pedestrians do not consider these streets to be adequately lit, especially at night.** This increases safety concerns such as risk of traffic accidents, muggings, and tripping on unseen objects. The street design manual recommends that the spacing between two street-light poles should be approximately three times the height of the fixture, and the poles should be no higher than 12 meters. In residential areas, the poles should be significantly lower than 12 meters to reduce undesirable illumination of private properties. The

placement of street lighting should be coordinated with other street elements so that trees or billboards do not affect proper lighting.

 **All corridors lacked street furniture, adequate litter bins and toilets.** Streets serve many functions in addition to being paths to get from one point to the next. **Streets can be places to sit and relax, enjoy a snack, socialize, and enjoy activities such as street art.** Street furniture should be placed in areas that receive shade, to make them comfortable for users. Street furniture can also be used as advertising space by companies, for example the adoption of benches. Partnership with private sector and government institutions can also save on costs for infrastructure, while making the streets more user-friendly. **Other amenities such as toilets, litter bins, and water taps are equally important to support streets as spaces that can be enjoyed as places to socialize and enjoy activities.** Litter, and in some instances dumped garbage, was present in all corridors due to the lack of adequate litter bins.

 **Poor drainage facilities.** Five out of the 12 streets observed had poor drainage facilities. According to the street design manual, footpaths should be raised to permit storm water runoff to flow away from/under the footpath. Stormwater should be carried through closed drains to free up road space for pedestrians. **NMT facilities, bus stops, and street vending areas should be at a higher level to avoid flooding,** which is a common sight in Nairobi streets during rainy seasons.

 **All corridors observed had elements that make them unfriendly to persons with disabilities.** These include a **lack of ramps on footpaths,** which force persons with disabilities to be dependent on others to access the footpath. Lack of continuous footpaths often force people with disabilities to use the road or rough surfaces, which exposes them to physical discomfort, road accidents and generally uncomfortable journeys. **Narrow footpaths of less than two meters pose a challenge to those using wheelchairs.** Footbridges make it very difficult for people with disabilities to navigate the street and they are often at the mercy of others to help them across footbridges.

 **Encroachment** is rampant on all corridors observed. **The most common forms of encroachment are street vending, cars parked on footpaths and bodabodas using the footpaths.** There are efforts to address encroachment, such as the notice by NMS of harsh penalties for florists, *bodabodas* and vehicles that block footpaths. Street vending is trickier to manage as a form of encroachment. It often seeks to provide essential goods and services. The street design manual states that **well-planned streets should accommodate street vending.** It recommends that vending spaces should be placed where

they will not interfere with pedestrian movement. It also notes that **vendors will be attracted to areas with shade and areas with high visibility to pedestrians.** Supporting infrastructure, such as cooperatively managed water taps, electricity points, litter bins, and public toilets, should also be provided to encourage hygienic practices.

DID YOU KNOW?



Good walking is good business! Retail spending is often higher in walkable areas. A welcoming walking environment attracts strolling visitors and local customers running daily errands. People on foot are more likely to see street vendors or window displays, encouraging them to go into more stores and to stay longer, all of which offers the potential of increased sales.³

NMS, Kenya Urban Roads Authority (KURA) and Kenya National Highways Authority (KeNHA) are responsible for addressing these infrastructure challenges depending on whether it is a county road, urban road, or highway, respectively. For street lighting, NMS is responsible for all street lights in Nairobi. For matters dealing with greenery, NMS has a mandate over environmental matters in Nairobi and should collaborate with KURA and KeNHA to protect trees during road works. NMS should also collaborate with the National Environment Management Authority for strategies to increase and maintain greenery in the city.



Cars parked on a lane along downtown Nairobi. © Edna Odhiambo

The multiple benefits of a walkable city

This three-part series has taken us through the pedestrian experience in Nairobi and highlighted the need to improve walking as a safer and more enjoyable mode of transport. As we end the series, it is worth recapping some of the many benefits of walking:

-  Being an active mode of transport, those who walk realize **improved health**, compared to those living sedentary lifestyles.
-  Walking can **increase economic productivity** as those walking are more likely to purchase goods and services from shops along their journey. A study that evaluated the effects of walkability on housing prices concluded that walkability had a statistically significant positive impact on housing values.
-  Walking facilities can improve the lives of many citizens through **better access to economic opportunities** – for example well-lit streets can allow someone to stay later at work, and thus earn more money – as well as easier access to healthcare services and social engagements. It can also reduce the amount of money spent by families on public transport, particularly in the low-income bracket.
-  Lastly, walking is a form of **clean transport** and is a quick win to address the **climate crisis and air pollution in cities.** The more citizens that choose walking over cars, the more we avoid harmful greenhouse gas emissions from vehicles and abate air pollution.

As you look out for our next issue on cycling, let's walk to secure the green city under the sun!



MEET YOUR CITY CHAMPIONS



Hon. Mary Mwami

Member of Nairobi County Assembly, Gender/persons with disabilities representative & transport committee member.

“A great city with a vibrant economy that serves her citizens”



Martin Eshiwani

Administration Director, Directorate of Transport Roads and Public Works, Nairobi Metropolitan Services.

“At NMS, delivery of a well-designed, safe and convenient network of infrastructure that serves the needs of Nairobians is our priority”



Poorly maintained footpath in downtown Nairobi. © Edna Odhiambo

ENDNOTES

1. Institute of Transport and Development (2019). 'Street Design Manual for Urban Areas in Kenya'. Retrieved from: <https://africa.itdp.org/publication/street-design-manual-for-urban-areas-in-kenya/>
2. Climate & Development Knowledge Network (2020). 'Air Quality and Non-Motorized Transport'. Retrieved from: <https://cdkn.org/wp-content/uploads/2020/06/NMT-Newsletter-June-2020.pdf>
3. Walk Boston (2012). 'Good walking is good business'. Retrieved from: <https://walkboston.org/resources/handouts/good-walking-is-good-business/>
4. Litman (2010). 'Quantifying the Benefits of Non-Motorized Transportation for Achieving Mobility Management Objectives', *Victoria Transport Policy Institute* 22.

ABOUT CDKN

CDKN works to enhance the quality of life for the poorest and most vulnerable to climate change. We support decision-makers in designing and delivering climate compatible development.

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