



NAIROBI EXPRESSWAY AUDIT



INSTITUTE FOR TRANSPORTATION AND DEVELOPMENT POLICY
JAN 2023

TABLE OF CONTENTS

| | |
|--------------------------------------|-----------|
| 1. Background | 1 |
| 2. Objectives | 1 |
| 3. Footpaths..... | 2 |
| 3.1 Presence of footpaths | 2 |
| 3.2 Presence of shade | 5 |
| 3.3 Presence of obstructions | 8 |
| 3.4 Universal access | 10 |
| 3.5 Crossings..... | 13 |
| 3.6 Access to public transport | 18 |
| 3.7 Summary of challenges | 21 |
| 4. Recommendations..... | 22 |
| 4.1 Footpaths | 24 |
| 4.2 Crossings..... | 25 |
| 4.3 Cycle tracks | 27 |
| 4.4 Public transport..... | 28 |

1. BACKGROUND

In 2019, the Kenya National Highways Authority (KeNHA) initiated improvements of the A8 corridor from Mlolongo to James Gichuru through construction the Nairobi Expressway, a 26.8 km four-lane toll road. The toll road is now open to vehicle traffic. The Expressway has had a significant impact on non-motorised transport (NMT) access along the A8 corridor, which traverses key commercial, residential, and industrial districts of Nairobi. NMT offers basic mobility, affordable transport, access to public transport, and provides health benefits. Nairobi commuters make 40 percent of daily trips on foot and 41 percent by public transport. Given the widespread use of NMT, it is critical to provide a high-quality walking and cycling environment on all major corridors in the Nairobi Metropolitan Area.

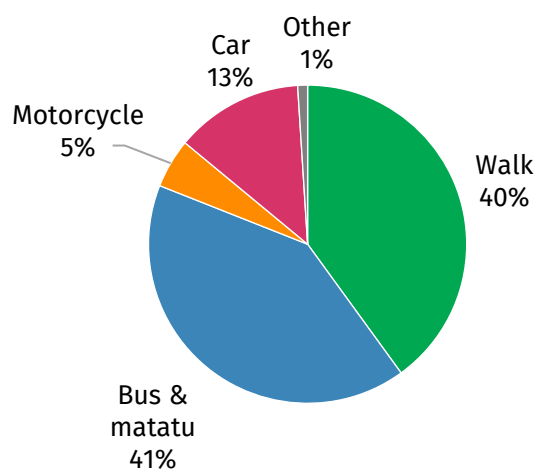


Figure 1. Nairobi modal split.

To identify opportunities to improve walking and cycling facilities along the A8 corridor, the Institute for Transportation and Development Policy (ITDP) and United Nations Human Settlements Programme (UN-Habitat) conducted a comprehensive NMT audit in collaboration with officials from Nairobi City County (NCC), Nairobi Metropolitan Area Transport Authority (NaMATA), and KeNHA. Participants observed the impact of the Nairobi Expressway on public transport, pedestrian, and cyclist movement. This report gives an overview of the existing NMT facilities along the Expressway and provides feedback on how to improve the facilities.

2. OBJECTIVES

The specific objectives of the design review are listed as follows:

- Assess the quality of existing NMT facilities along the A8 corridor.
- Observe movements of public transport users, pedestrians, and cyclist movements.
- Identify opportunities for improvements in NMT and public transport facilities.

3. FOOTPATHS

Streets not only facilitate pedestrian movement but also serve as public space that enhances social interaction, economic vitality, and the city image. Well-designed footpaths provide continuous space for walking and support other activities through the provision of public seating and comfortable waiting spaces at bus stops without compromising pedestrian mobility.

3.1 PRESENCE OF FOOTPATHS

Few footpaths are available along the A8 corridor. On street segments with footpaths, very few have 2 m of clear width, the minimum needed in urban areas. Most of the footpaths on Uhuru Highway and Waiyaki Way before the expressway constructed were demolished to pave way for construction of the Expressway, and few of the walkways have been reinstated.



Figure 2: Stretches of Uhuru Highway without footpaths.



Figure 3: Stretch of Mombasa Road without footpaths.

Where footpaths exist, the available clear width is inadequate, the footpaths often end abruptly, and there is no universal access.



Figure 4. Footpaths on Waiyaki Way that have been reinstated. In many cases, footpaths are not continuous.

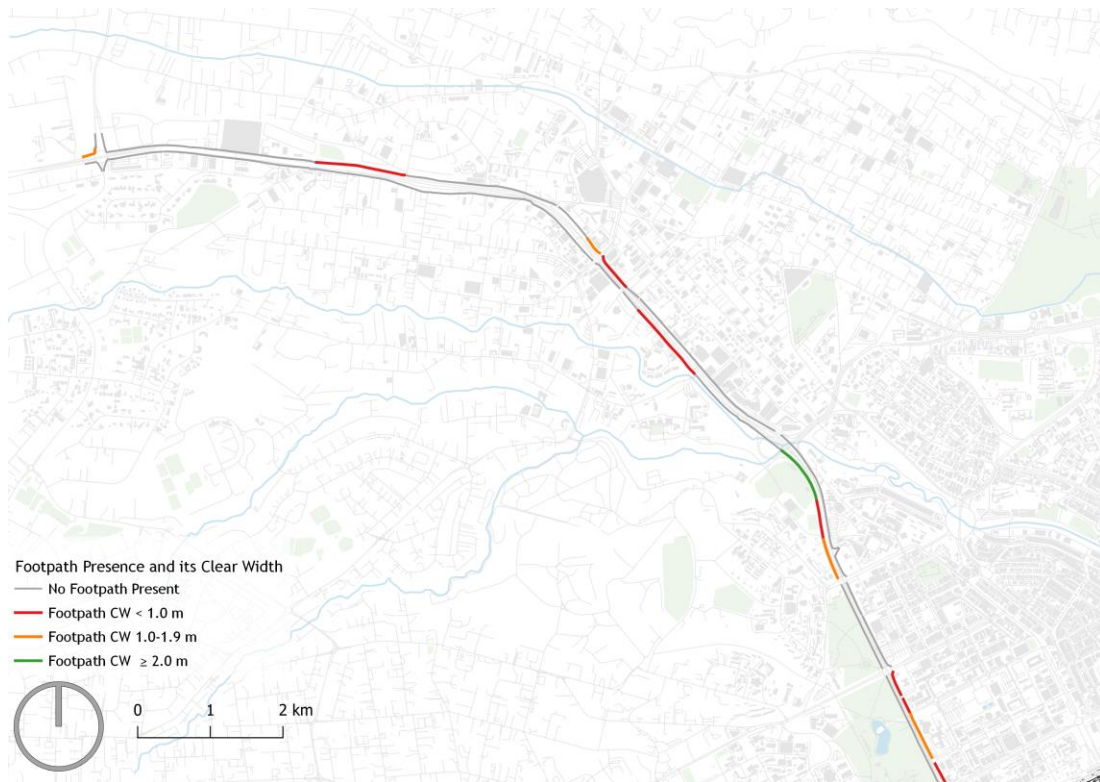


Figure 5. Footpath presence and clear width: James Gichuru to University Way.

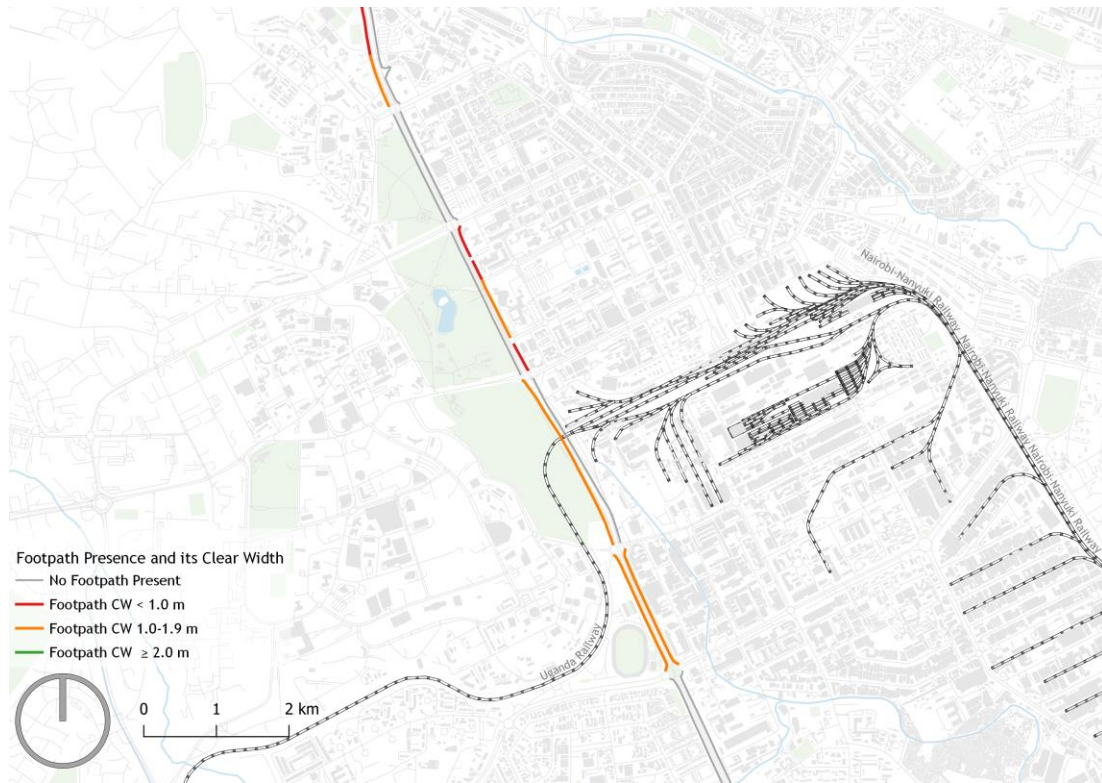


Figure 6. Footpath presence and clear width: University Way to Nyayo Stadium.

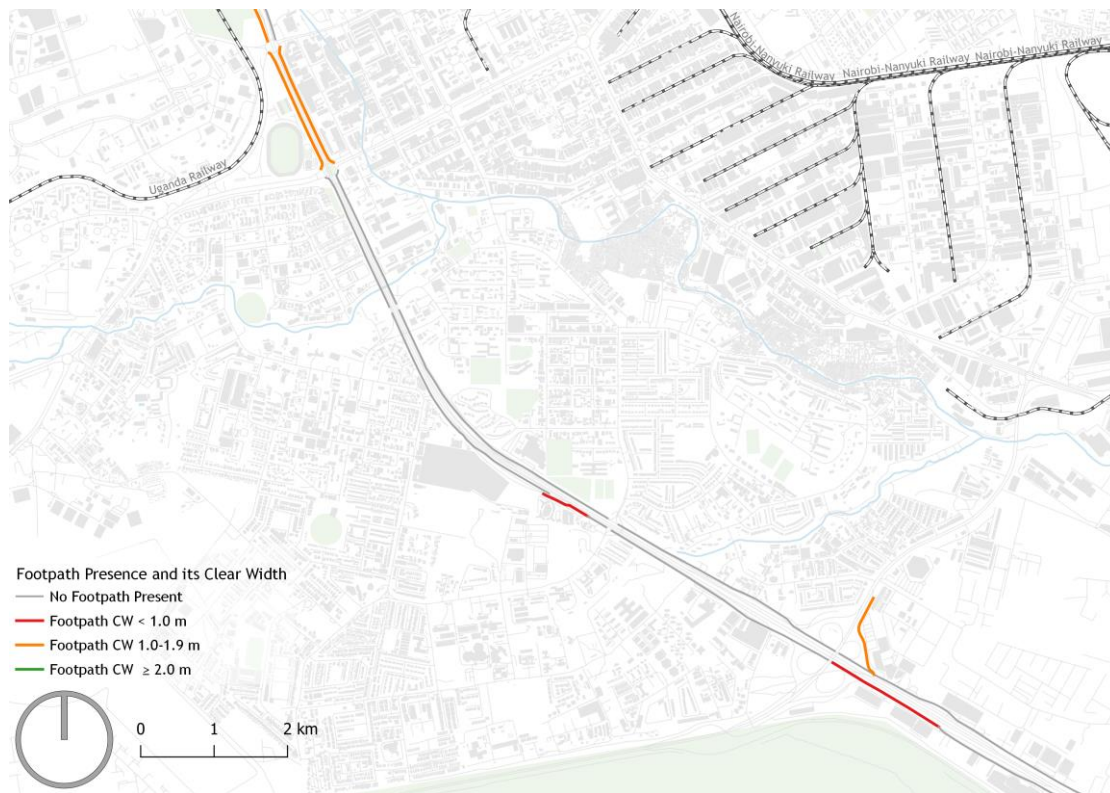


Figure 7. Footpath presence and clear width: Nyayo Stadium to Southern Bypass.

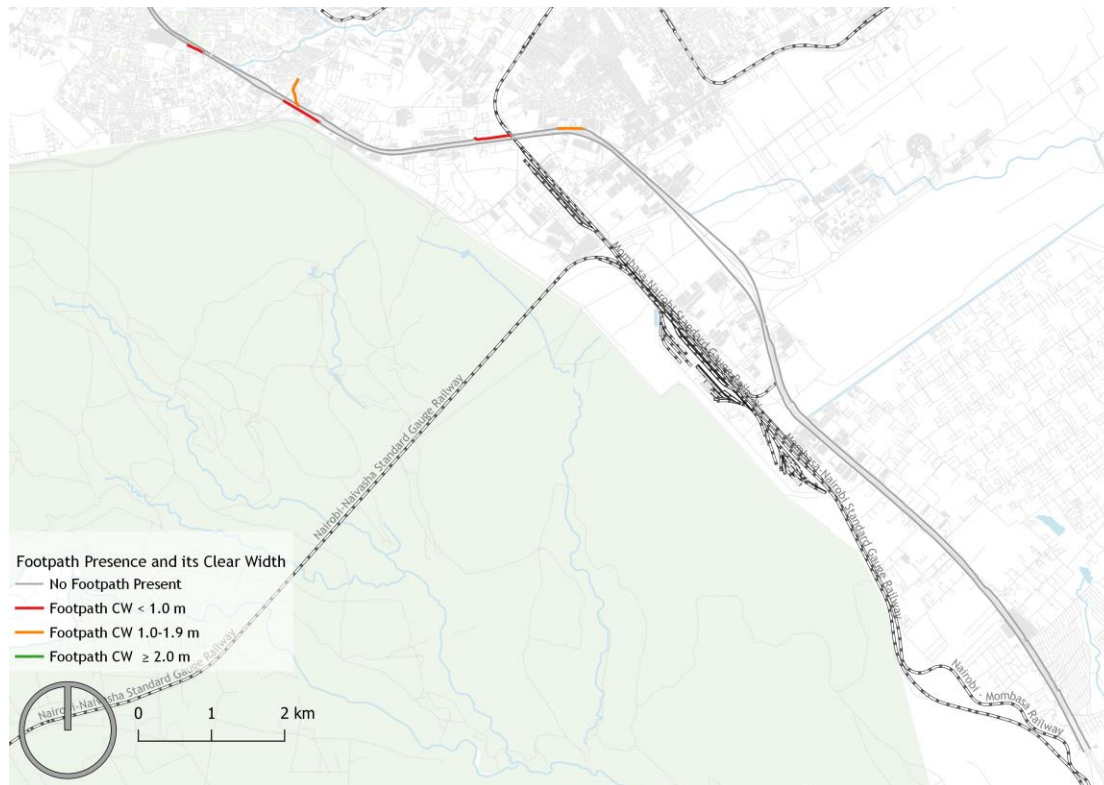


Figure 8. Footpath presence and clear width: Southern Bypass to Mlolongo.

3.2 PRESENCE OF SHADE

The construction of the Expressway resulted in the loss of at least 2,500 trees.¹ According to the National Environmental Management Agency (NEMA), the contractor was expected to plant 3,000 assorted seedlings along the 27 km stretch to compensate for the trees brought down during construction. The maps below show shade is very limited along the corridor.

¹ Amollo, C. (2022, February 17). 2,500 trees brought down to pave the way for expressway. *Business Daily Africa*. <https://www.businessdailyafrica.com/bd/economy/2500-trees-cut-down-in-expressway-construction-3719302>

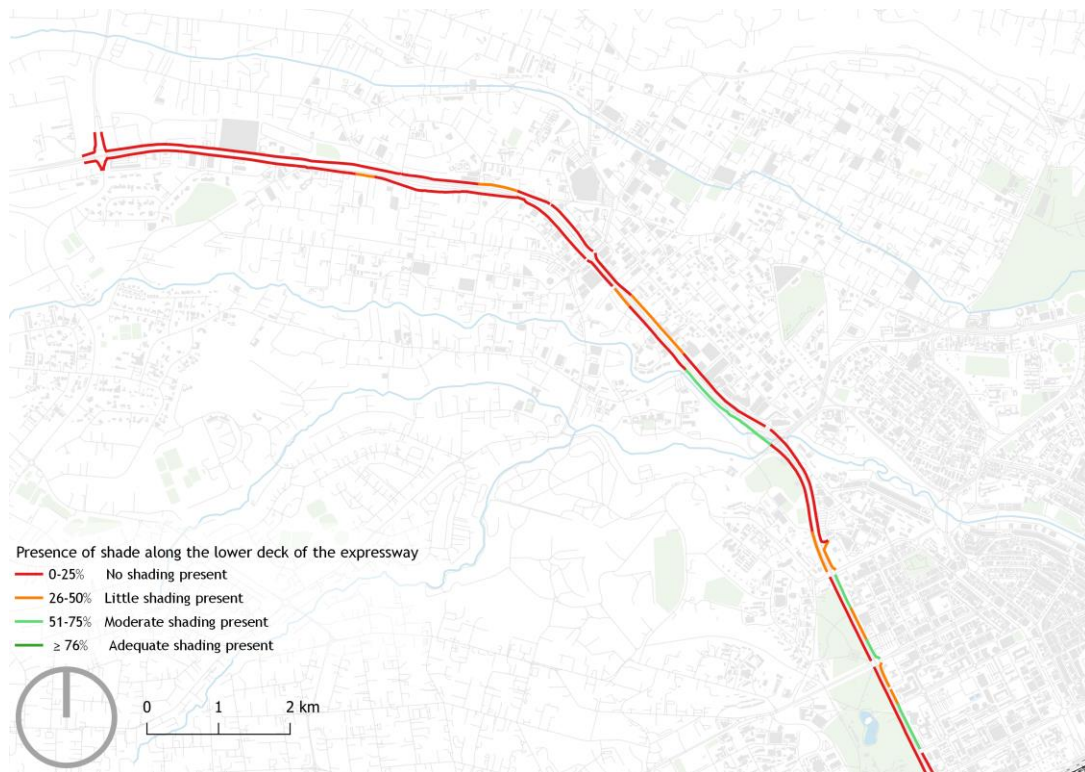


Figure 9. Presence of shade: James Gichuru Roundabout to University Way

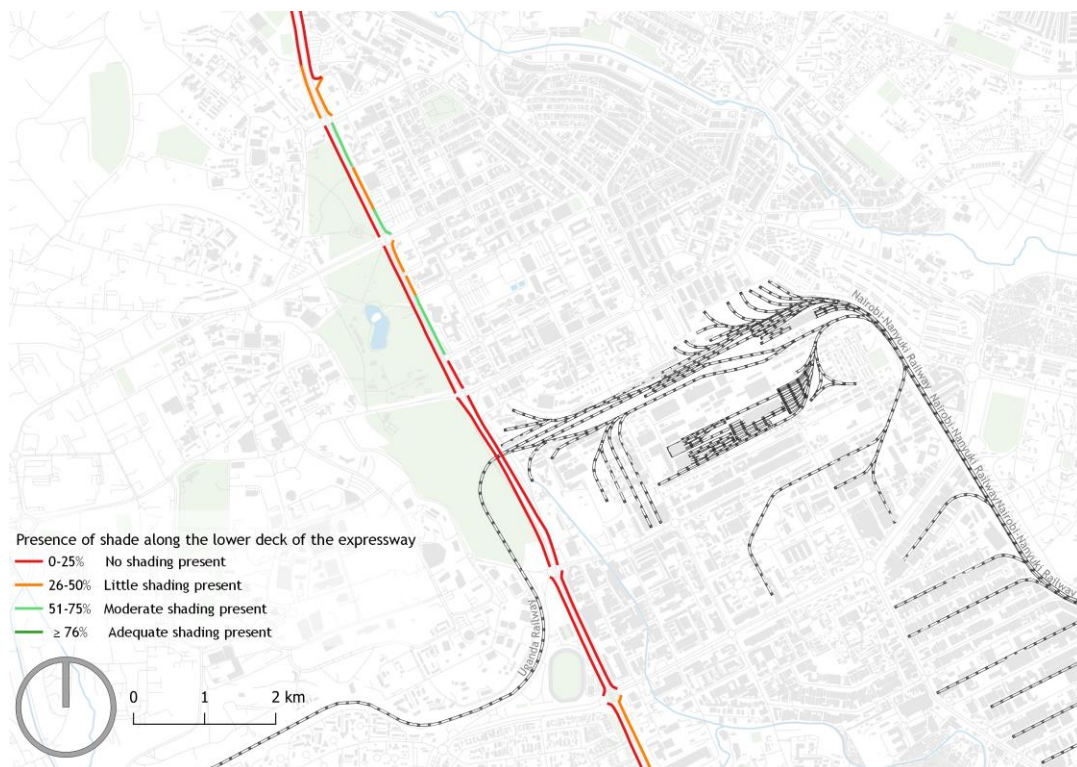


Figure 10. Presence of shade: University Way to Nyayo Stadium.

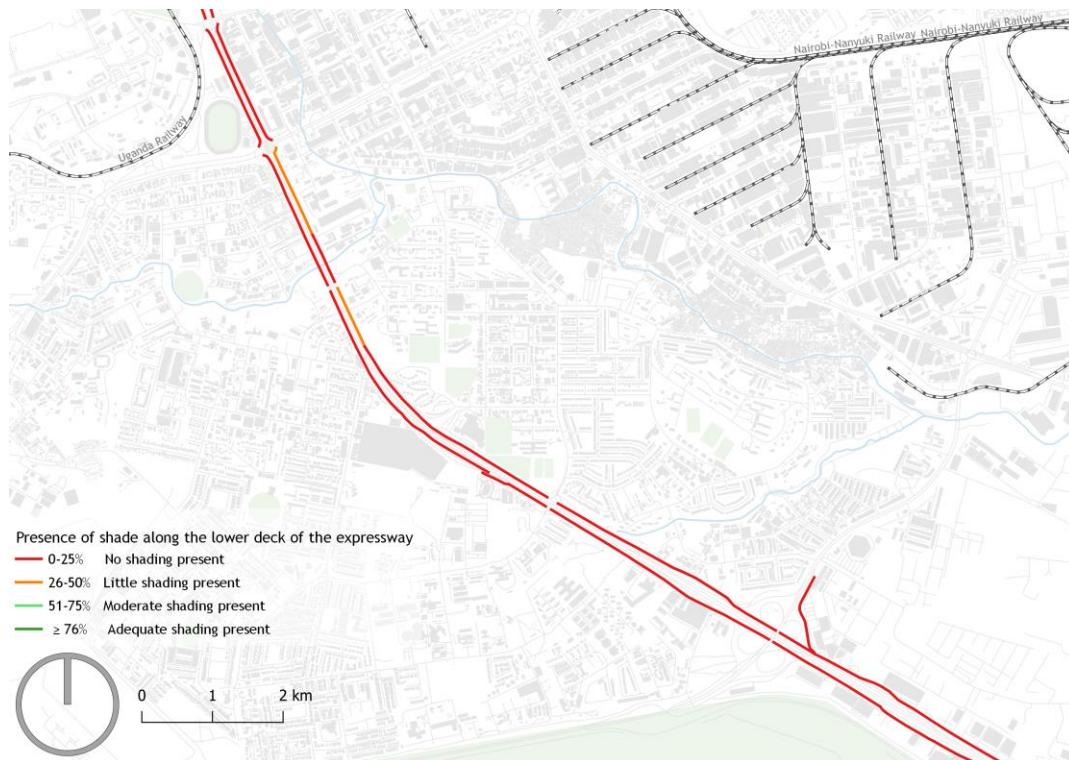


Figure 11. Presence of shade: Nyayo to Southern Bypass.

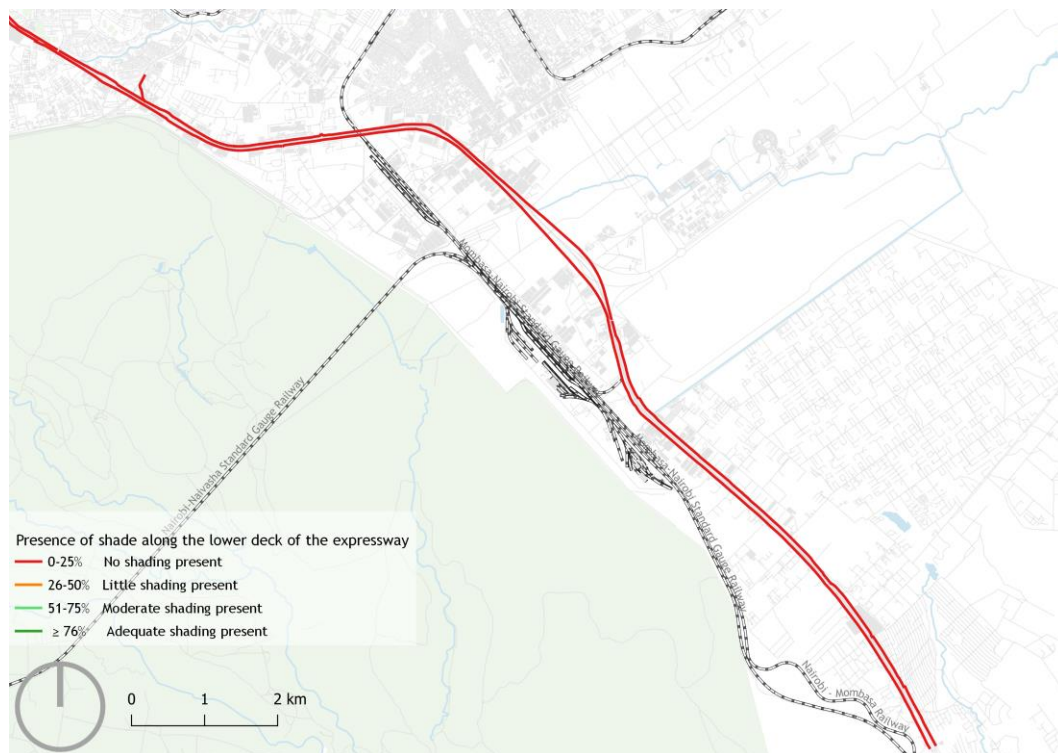


Figure 12. Presence of shade: Southern Bypass to Mlolongo.

3.3 PRESENCE OF OBSTRUCTIONS

Footpath obstructions along the corridor include expressway columns, utility poles, and and construction debris. The maps below display the presence of obstructions.



Figure 13. Some footpaths along the A8 have been reinstated, but the alignment of the footpaths did not account for the presence of Expressway columns.

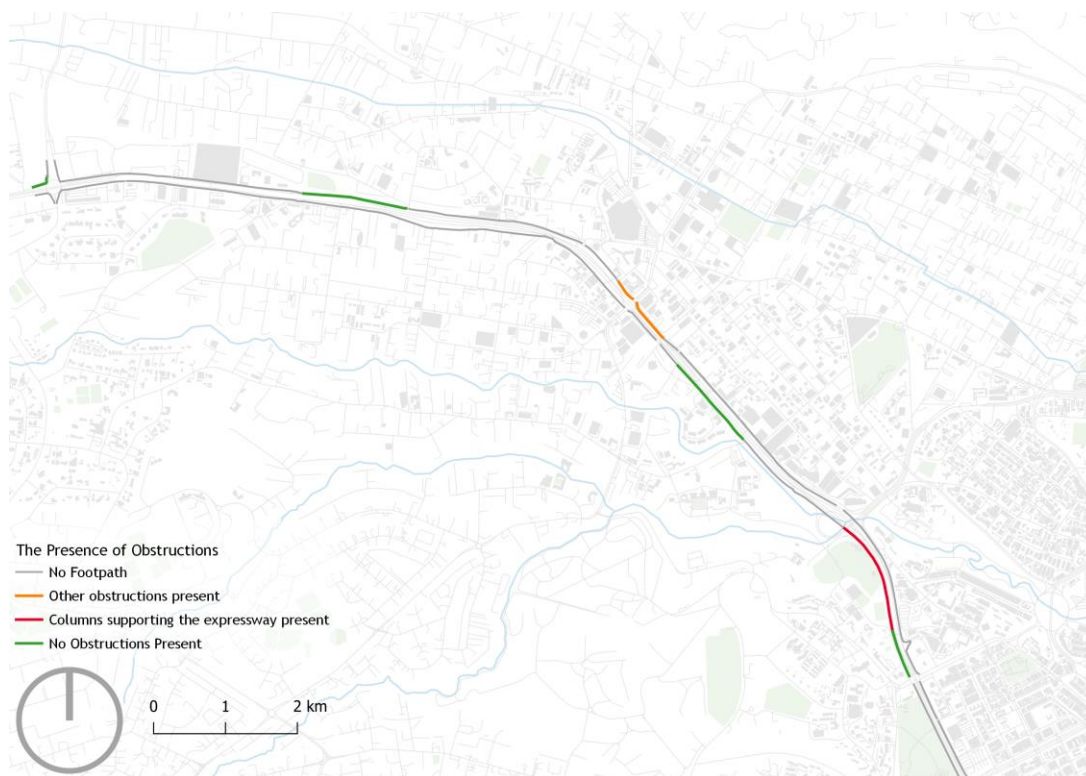


Figure 14. Footpath obstructions: James Gichuru to University Way.

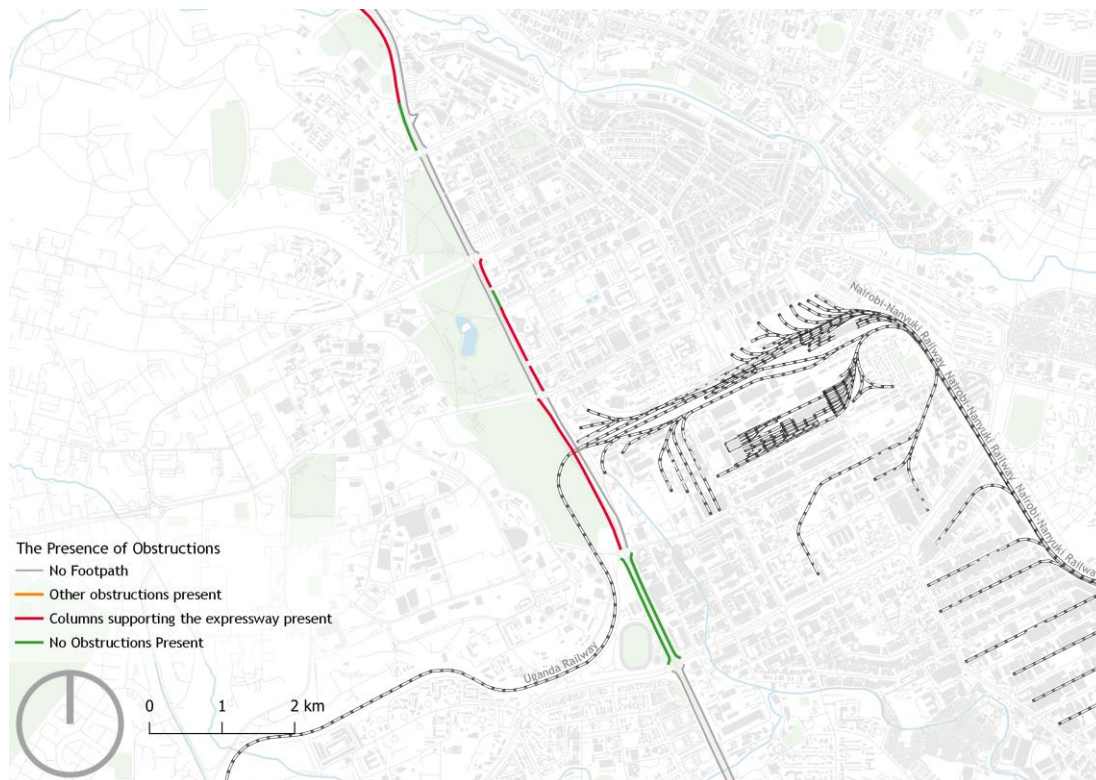


Figure 15. Footpath obstructions: University Way to Nyayo Stadium.



Figure 16. Footpath obstructions: Nyayo Stadium to Southern Bypass.

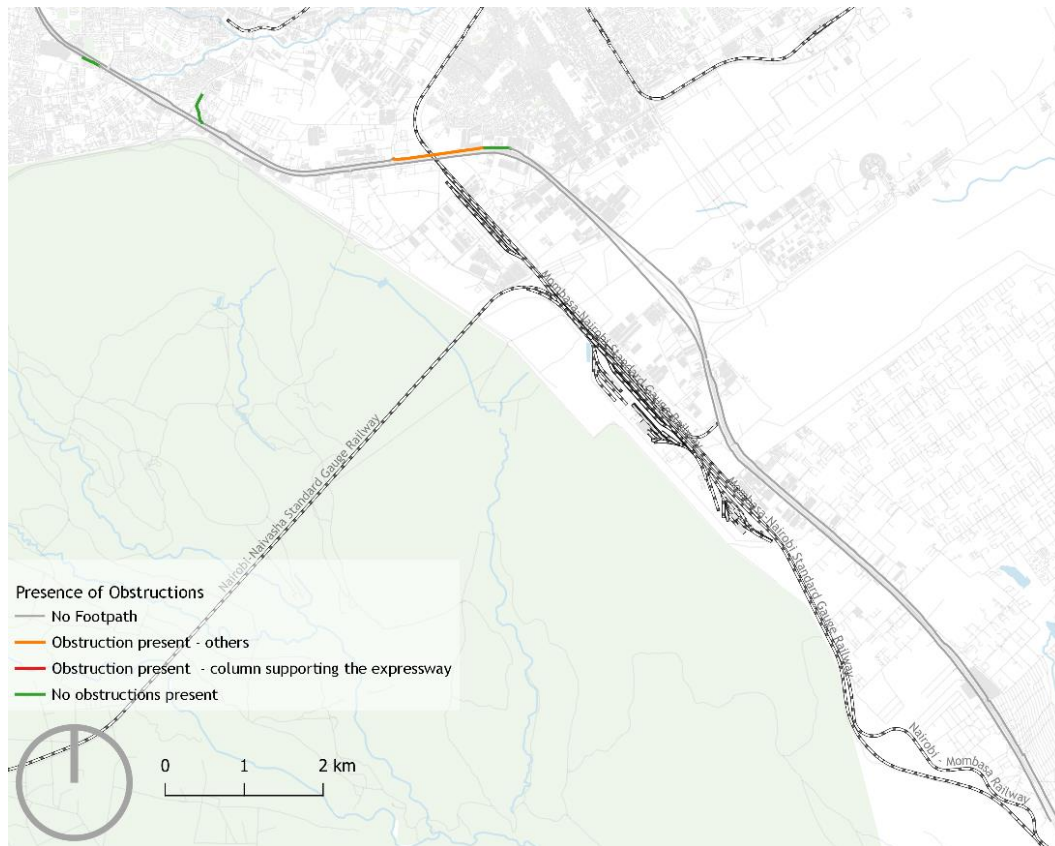


Figure 17. Footpath obstructions: Southern Bypass to Mlolongo.

3.4 UNIVERSAL ACCESS

There are few sections with footpaths that are universally accessible. Disabled pedestrians are forced to use the carriageway, forcing them to use the carriageway next to fast-moving vehicles.



Figure 18. Footpaths on Mombasa Road at Airtel.

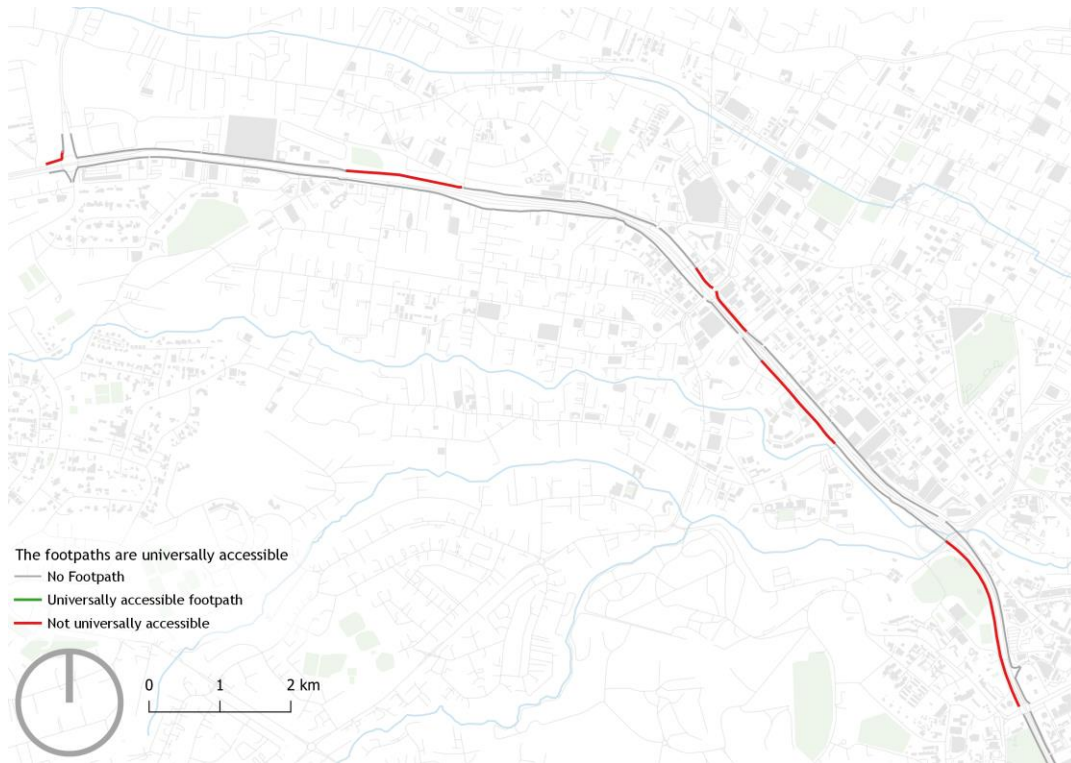


Figure 19. Presence of universal access: James Gichuru to University Way.

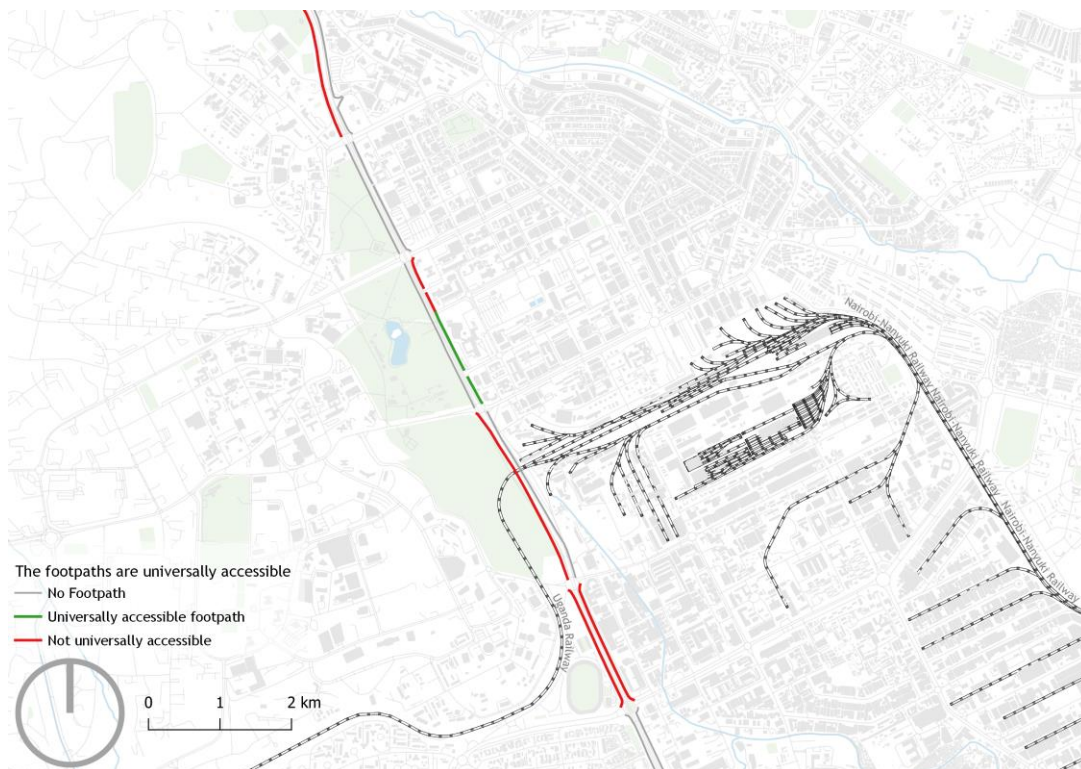


Figure 20. Presence of universal access: University Way to Nyayo Stadium.



Figure 21. Presence of universal access: Nyayo Stadium to Southern Bypass.

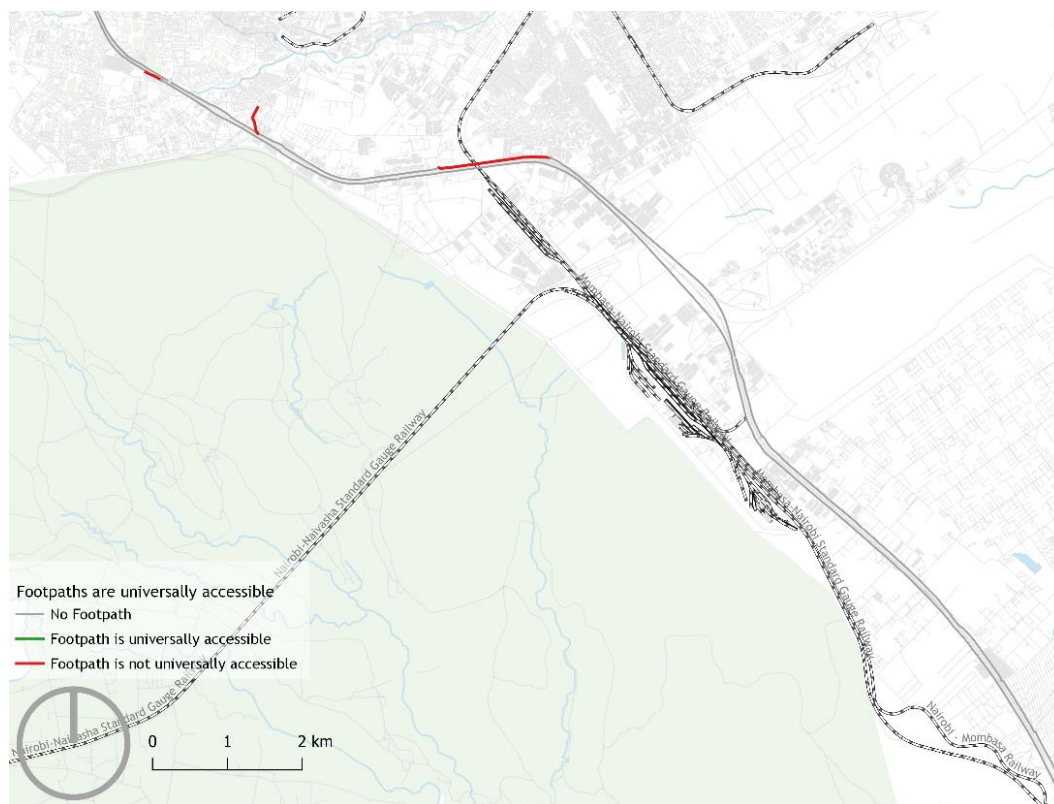


Figure 22. Presence of universal access: Southern Bypass to Mlolongo.

3.5 CROSSINGS

Construction of the Expressway has made it difficult for pedestrians and cyclists to cross the road, especially along sections where the expressway is not elevated. The only level crossings that exist after the expressway construction are on Uhuru Highway. One of the major crossing points on Uhuru Highway is at St. Paul's. The crossing is not marked and lacks universal access despite the high traffic of pedestrians, primarily students, crossing the road. Other important crossings at Airtel, Safaricom, and other locations no longer exist.

Two footbridges were demolished and reinstated: GM and Imara Daima. The tunnel at the University of Nairobi remained in place. The universally accessible footbridges are used by motorcycles, creating a nuisance for pedestrians and cyclists. The new footbridge at GM is not universally accessible and is very long, making it quite inconvenient for pedestrians to use.



Figure 23. Level crossings at James Gichuru.



Figure 24. Tunnel at the University of Nairobi (left) and footbridge at Mlolongo (right).



Figure 25. Footbridges at Nyayo Stadium and GM do not offer universal access.

The following maps display the different types of crossings on the surveyed stretch.



Figure 26. Crossing types: James Gichuru to University Way.

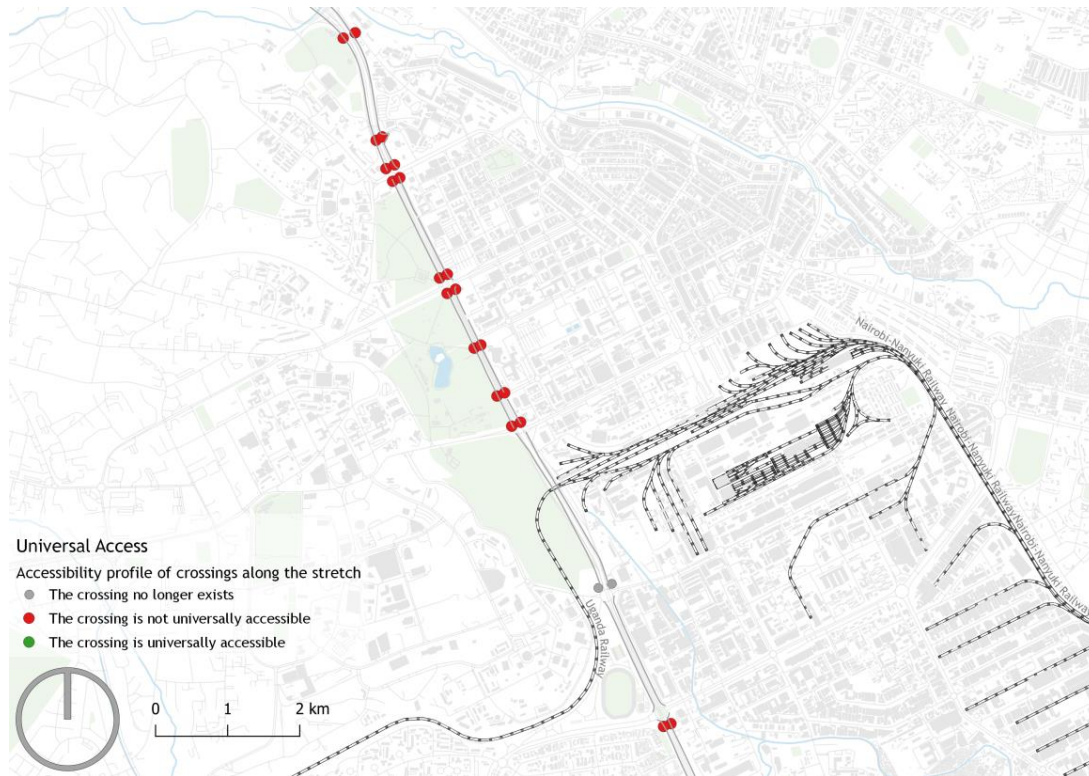


Figure 27. Crossing types: University Way to Nyayo Stadium.



Figure 28. Crossing types: Nyayo Stadium to Southern Bypass.

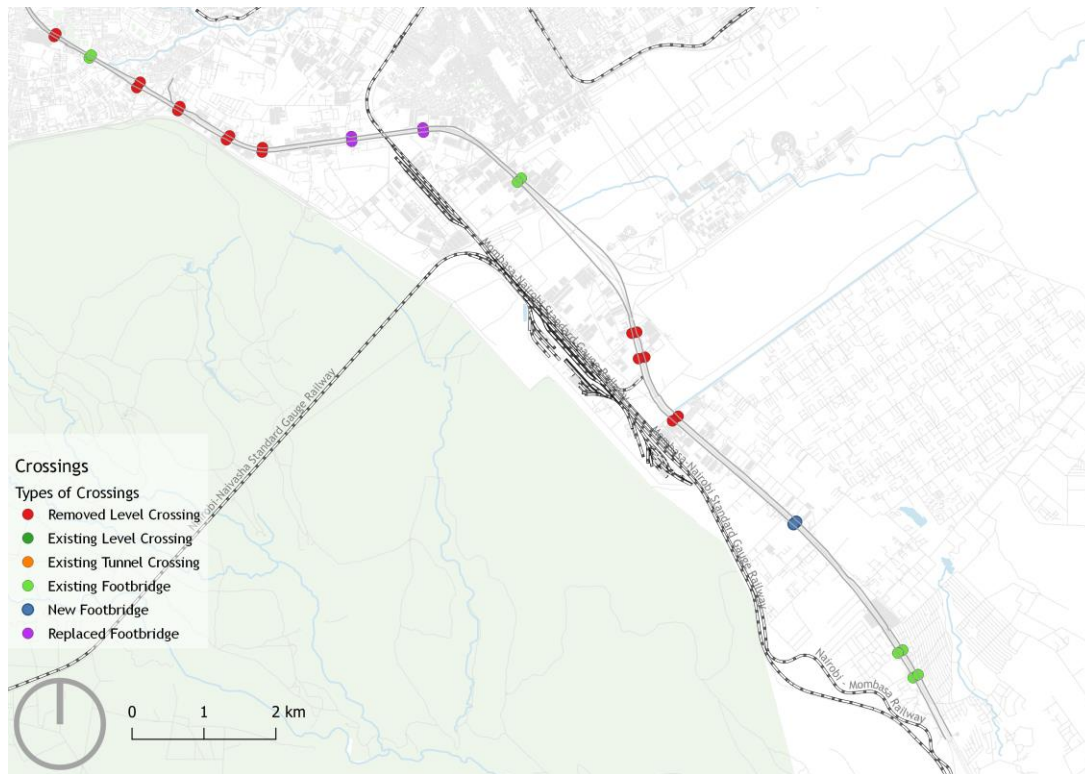


Figure 29. Crossing types: Southern Bypass to Mlolongo.

The following maps display the universal accessibility of different types of crossings on the surveyed stretch.

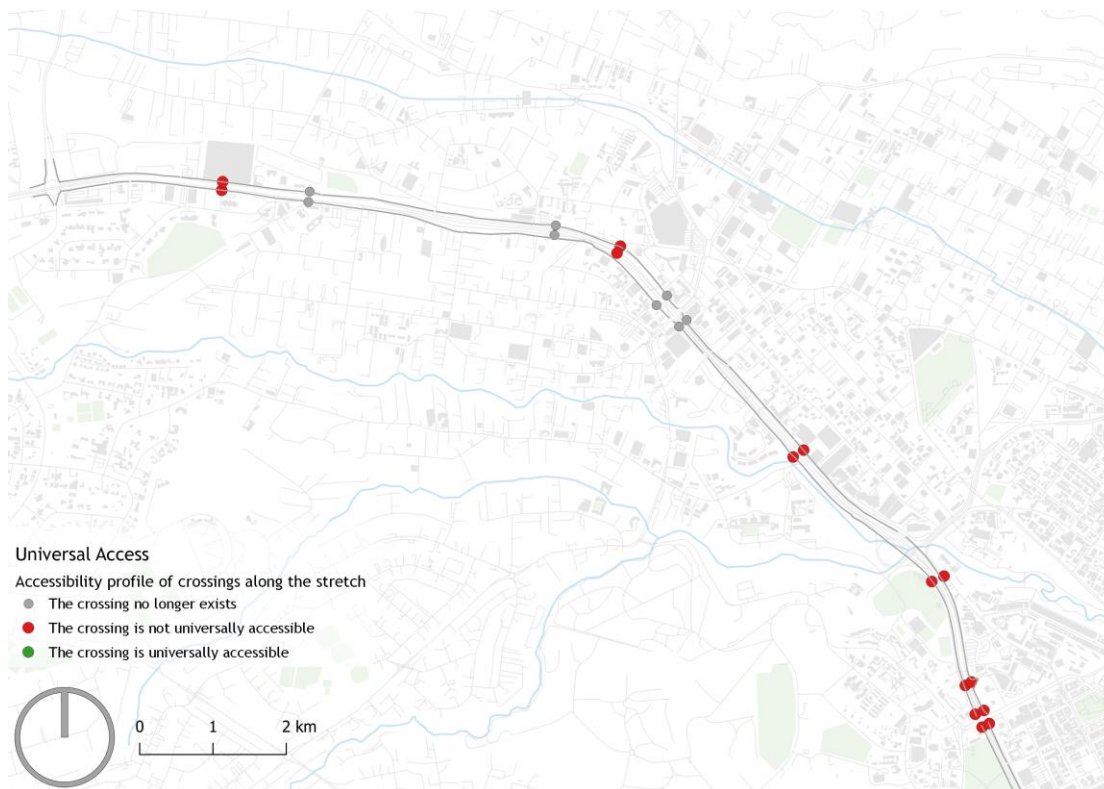


Figure 30: Universal accessibility of the different crossing types: James Gichuru to University Way.

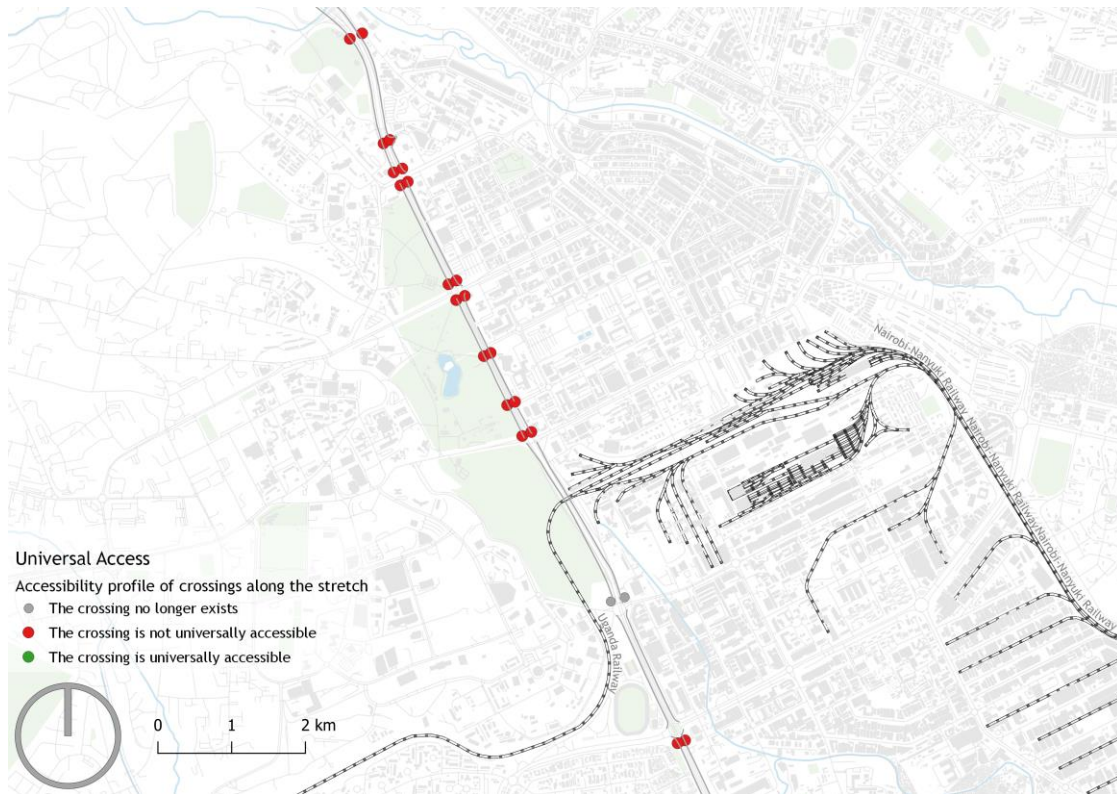


Figure 31: Universal accessibility of the different crossing types: University Way to Nyayo Stadium.



Figure 32: Universal accessibility of the different crossing types: Nyayo Stadium to Southern Bypass.

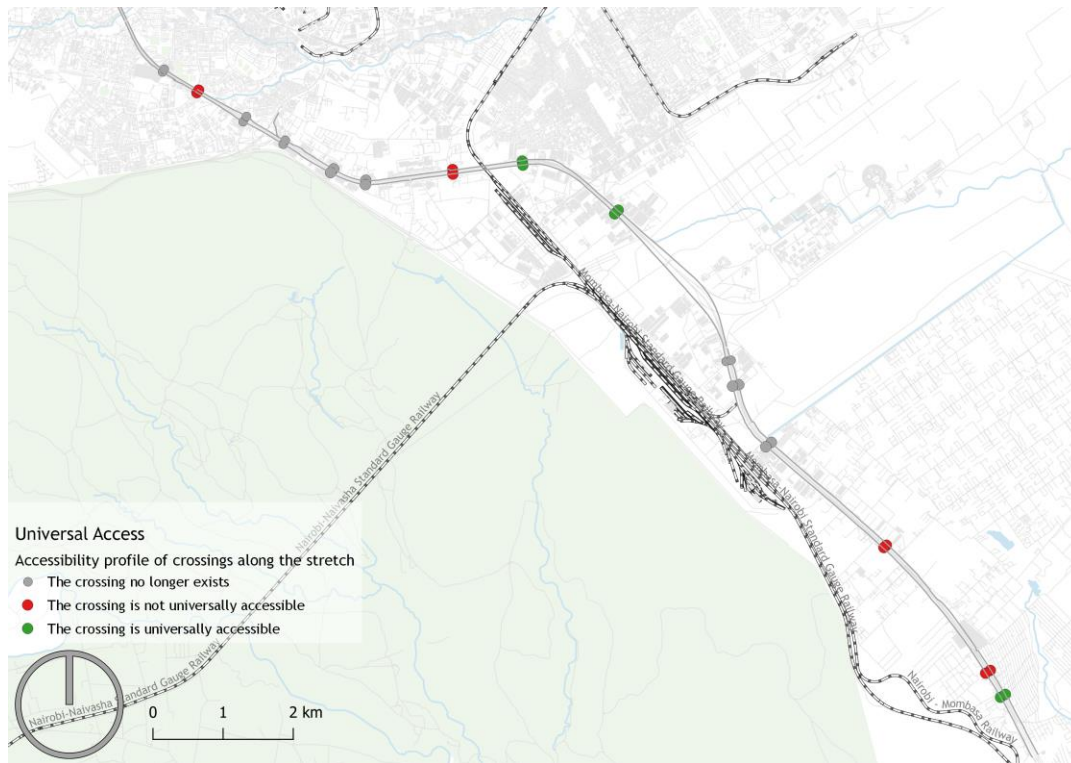


Figure 33: Universal accessibility of the different crossing types: Southern Bypass to Mlolongo.

3.6 ACCESS TO PUBLIC TRANSPORT

Public service vehicle (PSV) boarding, and alighting happens at informal stages along the corridor. There are few bus shelters with seating and other facilities that are important to improve convenience for public transport users.



Figure 34. Public transport stops along Mombasa Road.



Figure 35. Public transport facilities: James Gichuru to University Way.

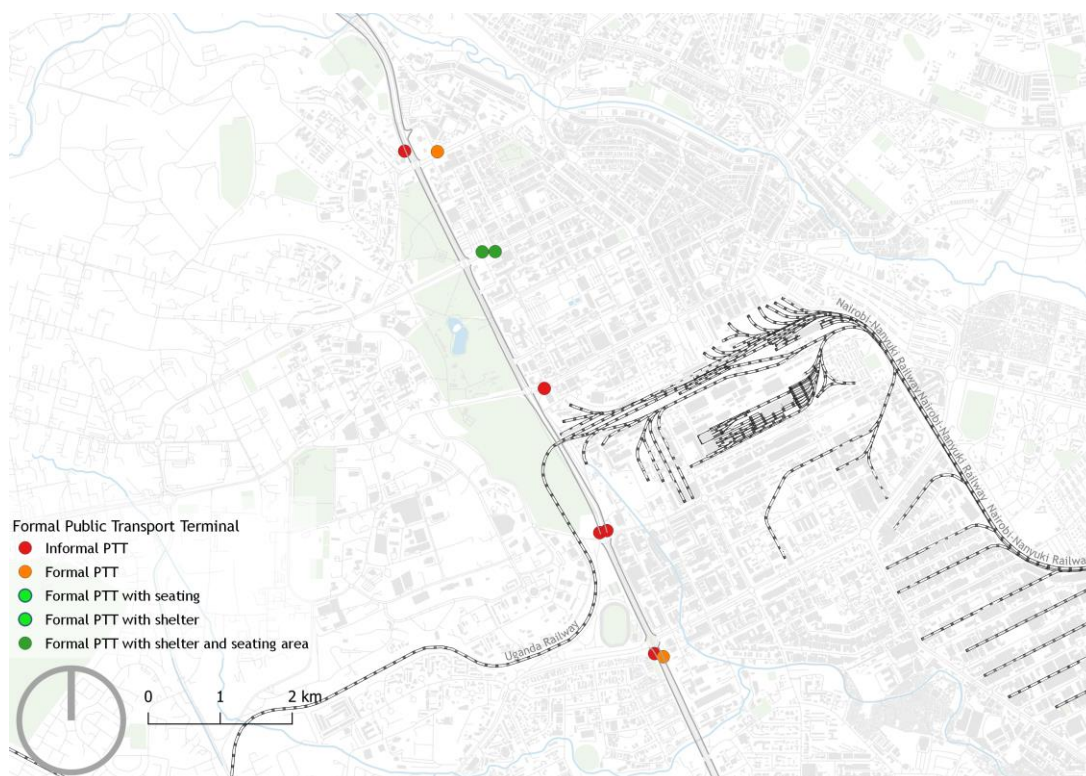


Figure 36. Public transport facilities: University Way to Nyayo Stadium.



Figure 37. Public transport facilities: Nyayo to Southern Bypass.

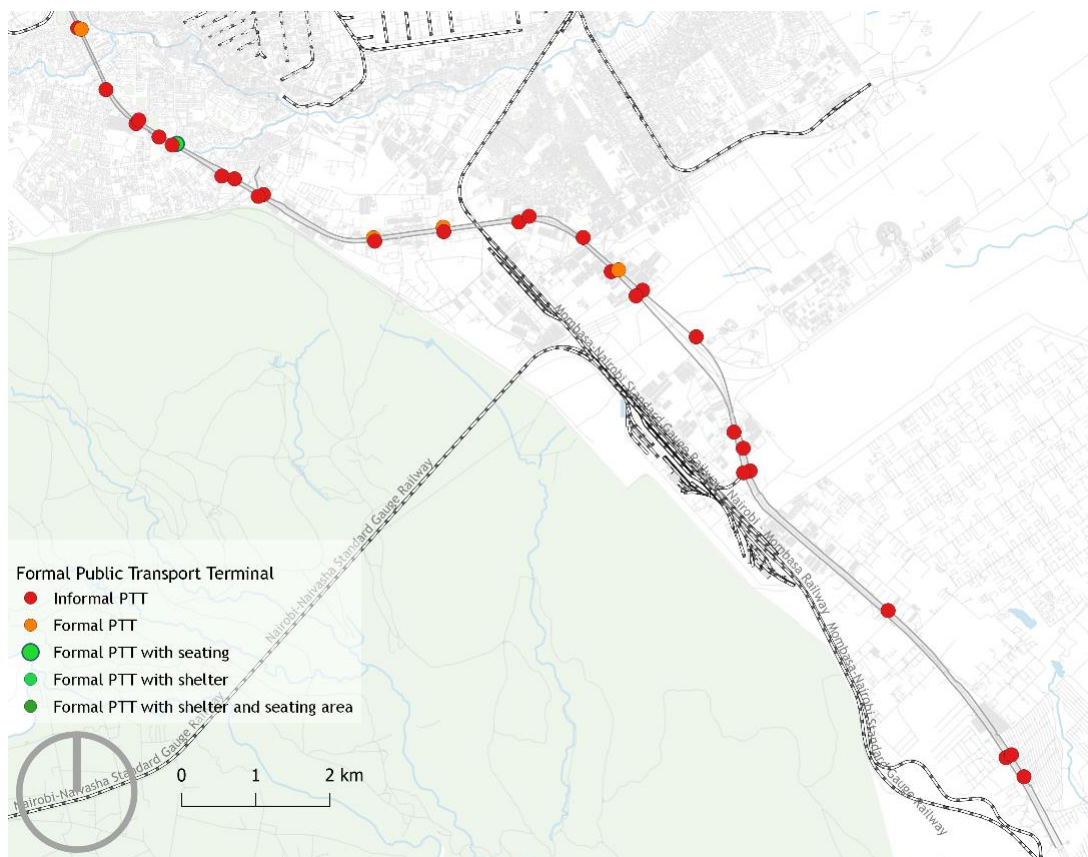


Figure 38. Public transport facilities: Nyayo Stadium to Southern Bypass.

3.7 SUMMARY OF CHALLENGES

The major challenges for NMT users alongside the newly constructed Expressway are as follows:

- There is a lack of proper pedestrian facilities throughout the corridor. Most of the street segments lack adequate walkways, shade, universal access, crossings, and safe intersection designs. Many of the new footpaths have serious obstructions.
- Most level crossings that existed before the expressway construction are no longer functional, other than those along Uhuru Highway in the CBD. There is an urgent need for convenient universally accessible crossing facilities, especially at locations with high crossing demand such as Airtel and Safaricom.
- The lack of dedicated cycle tracks on the entire surveyed stretch makes it difficult and unsafe to make short and safe trips by cycling. For example, cyclists cannot travel from South C to Nairobi West without cycling on the carriageway.
- There is a lack of formal and well-maintained public transport facilities with bus shelters and seating.
- Private cars and boda bodas use walkways for parking along some stretches of Waiyaki Way and Uhuru Highway, hindering pedestrian mobility.



Figure 39. Distance now covered by pedestrians who wish to cross the Expressway at Airtel on Mombasa Road.

4. RECOMMENDATIONS

Reports indicate that the government has set aside KES 9 billion for the rehabilitation and improvement of A8 adjacent to the Expressway.² We, therefore, recommend the following:

- The footpaths along the corridor should be continuous and free of obstructions, including permanent and temporary obstructions.
- Continuous tree cover is needed to improve comfort for pedestrians and cyclists.
- The entire corridor needs safe, continuous cycle tracks, with protected intersection designs.
- Level crossings at the University of Nairobi and other locations along Uhuru Highway should be signalised to improve safety. At locations without signals, tabletop crossings are needed to improve safety.
- All elements should be designed according to universal access standards.
- Any new NMT facilities should be compatible with the planned BRT Line 1 corridor to avoid the need for future reconstruction.

² Mugambi, H. (2022, May 15). <https://www.citizen.digital/news/After-Expressway-Launch,Old-Mombasa-Road-Now-Set-for-Ksh.9B-Facelift>. Retrieved from Citizen Digital: <https://www.citizen.digital/news/after-expressway-launch-old-mombasa-road-now-set-for-ksh9b-facelift-n298253>.

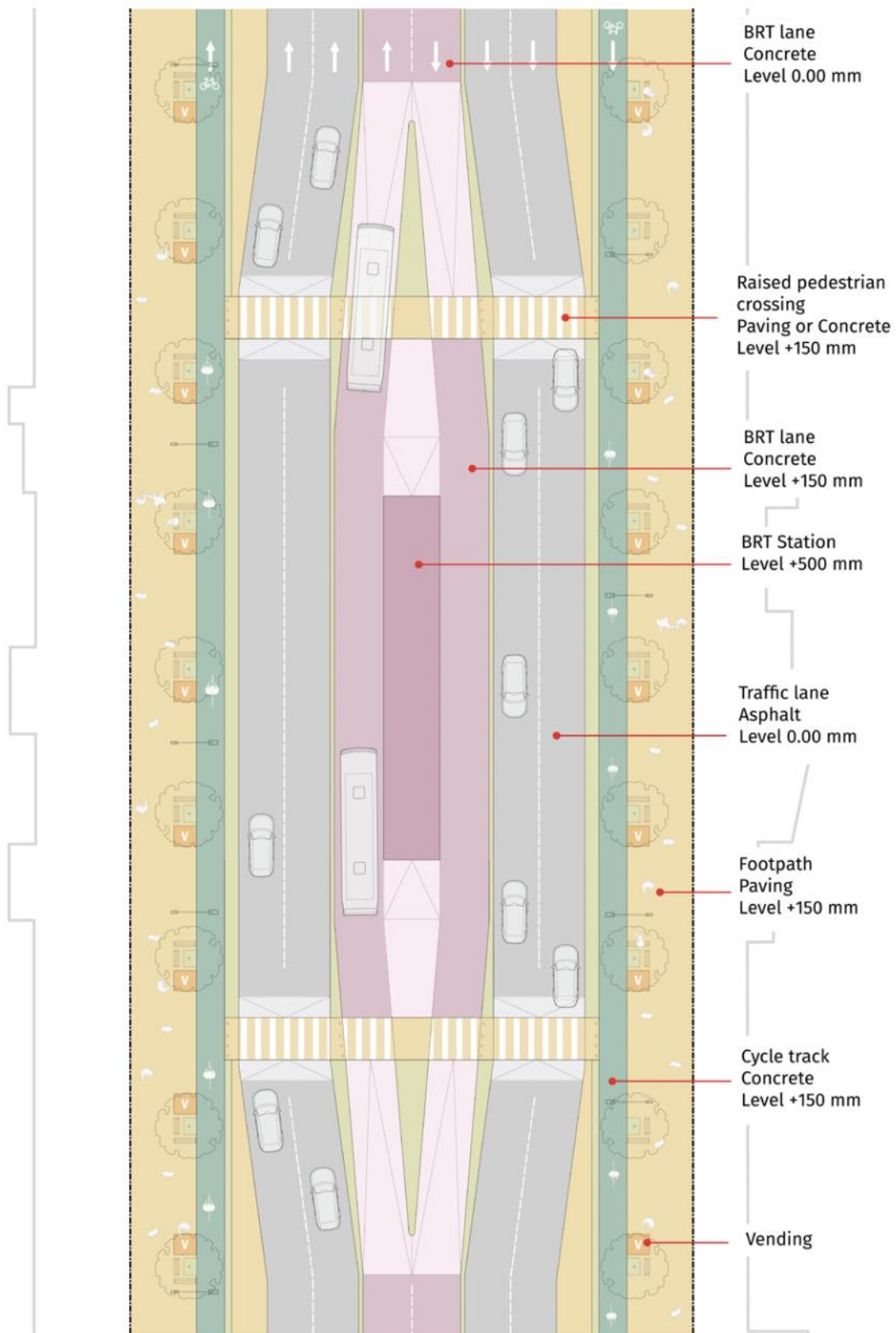


Figure 40. The Expressway corridor needs a complete design with walkways, cycle tracks, and at-grade crossings.

4.1 FOOTPATHS

Comfort, continuity, and safety are the governing criteria for the design and construction of pedestrian facilities. For this reason, the footpaths are divided into three main zones:

- **Pedestrian zone.** This zone provides continuous space for walking and should be clear of any obstructions. It should be at least 2 m wide.
- **Frontage zone.** Provides a buffer between street-side activities and the pedestrian zone. Next to a compound wall, the frontage zone can become a plantation strip.
- **Furniture zone.** This is a space for landscaping, furniture, lights, bus stops, signs, and private property access ramps.

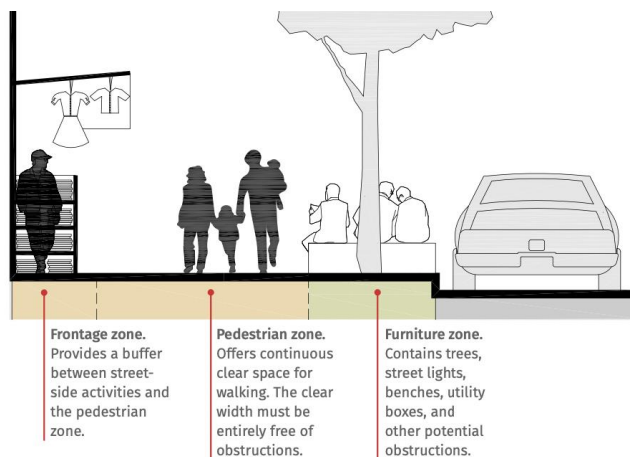


Figure 41. Footpath zones.

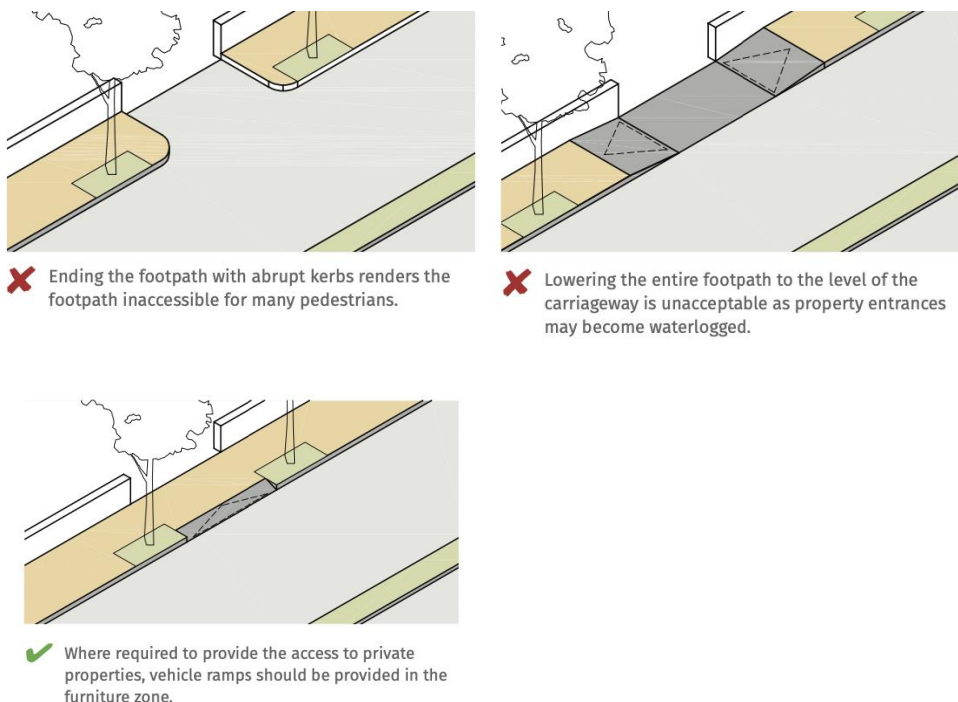


Figure 42. Footpaths should remain at the same level at property entrances and small side streets, with ramps for vehicles, to improve convenience for pedestrians and to maintain universal access.

4.2 CROSSINGS

Good crossings allow pedestrians and cyclists to cross busy streets safely and conveniently. A formal pedestrian crossing should be located wherever there is a concentrated need for people to cross the street (e.g., at a bus stop, at an entrance to a shopping mall, or where a path intersects the street).

The following design standards are applicable to pedestrian crossings:

- Located at pedestrian desire lines.
- Signalised or raised to the level of the footpath to provide universal access and traffic calming. People can cross a street with up to two lanes, low vehicle volumes, and slower speeds (i.e., 30 km/h or below). If a street has two or more lanes per direction, higher volumes, or faster speeds, crossings are made safer through median refuge islands combined with traffic calming and/or signal control.
- For tabletop crossings, the height should match the height of the adjacent footpath. A ramp slope of 1:8 is preferred.
- If a speed hump is used, the hump should be placed 5 m before the crossing.
- Drainage inlets should be provided upstream of the tabletop crossing to prevent waterlogging.
- The pedestrian crossing should have a width of 5 m or equivalent width to the adjacent footpath, whichever is larger.
- Bulb-outs should be added in parking lanes to reduce the crossing distance.

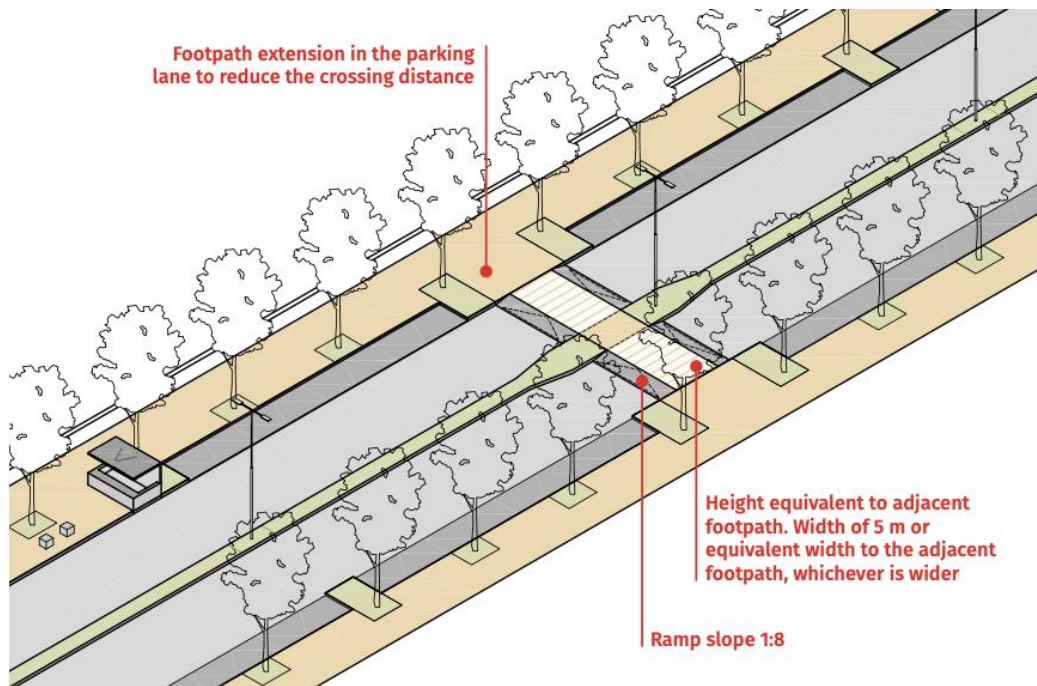


Figure 43. Tabletop pedestrian crossings offer universal access and reduce vehicle speeds to improve safety.

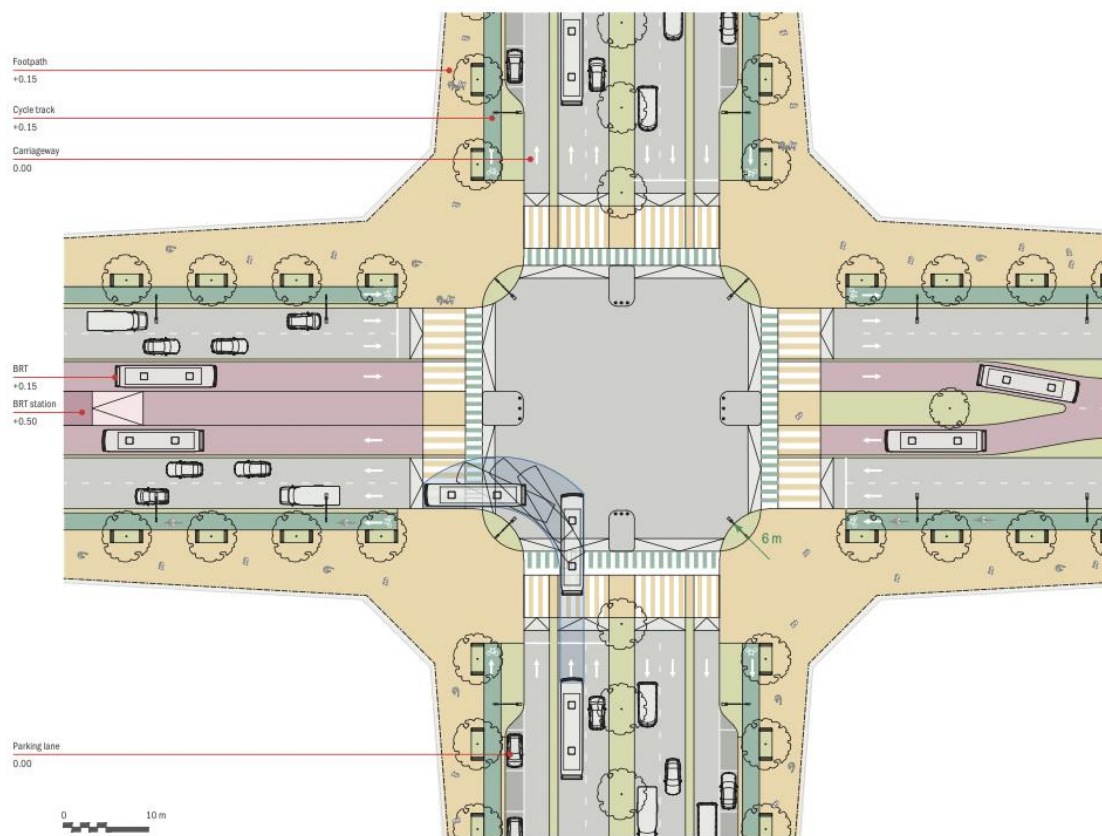


Figure 44. Intersection with BRT on two legs.

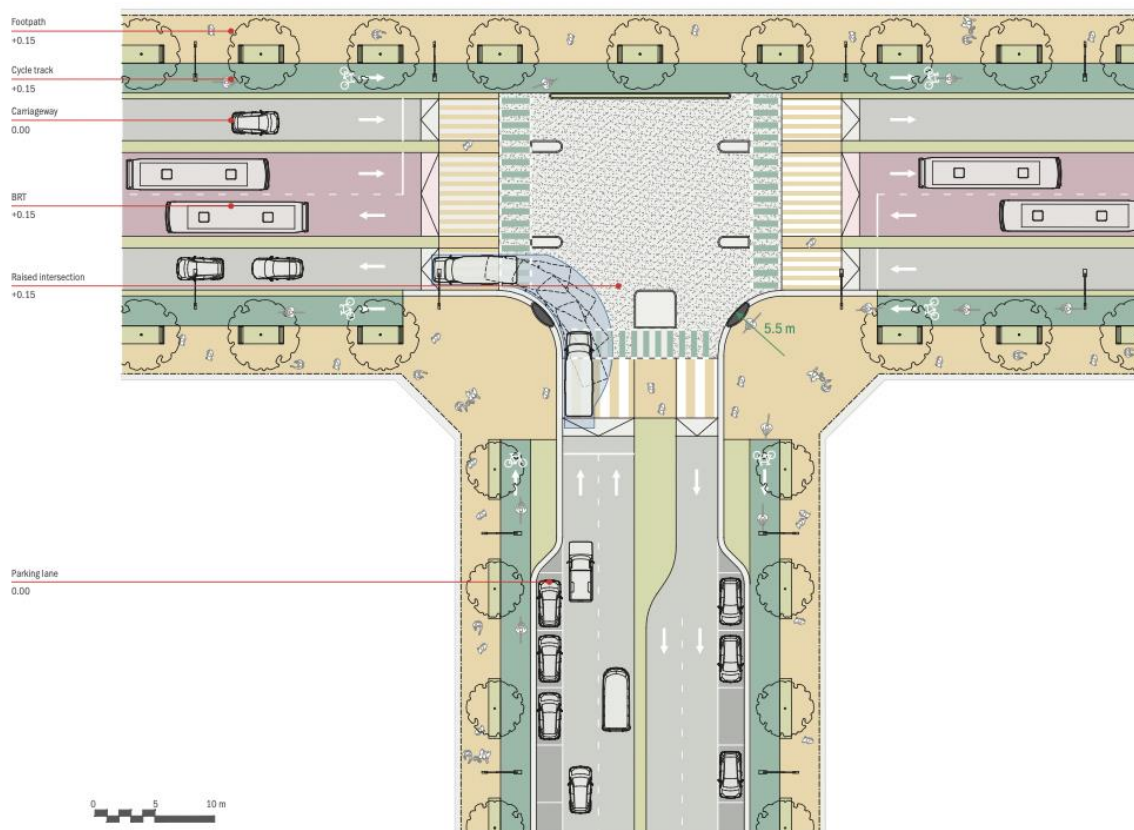


Figure 45. T intersection with the BRT on one leg.

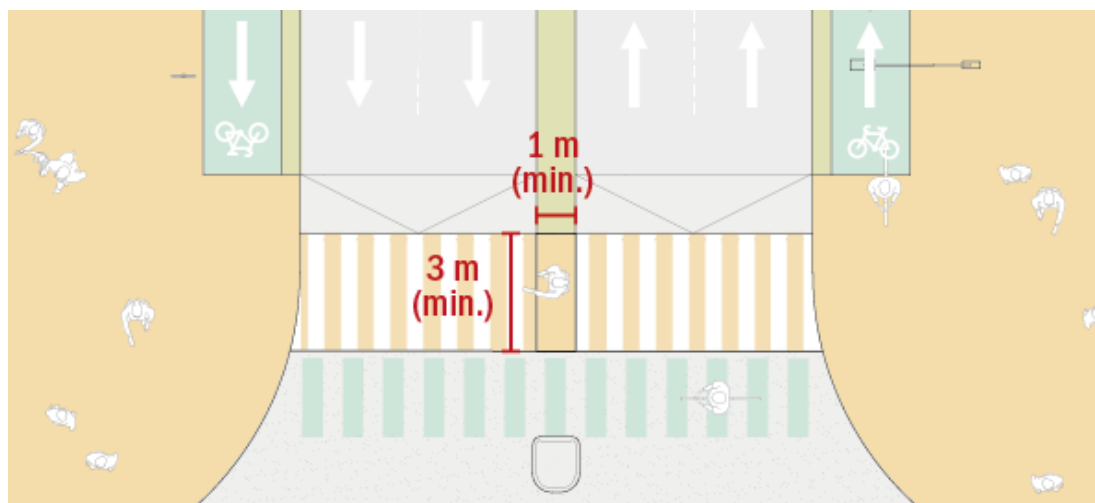


Figure 46. Pedestrian refuge.

4.3 CYCLE TRACKS

The following design standards apply to cycle tracks:

- Physically separated from the carriageway—as distinguished from painted cycle lanes, which offer little protection to cyclists.

- Clear width of at least 2 m for one-way movement. The clear, or “effective” width, is the width clear of obstructions such as utility poles, shrubs, etc. 3.0 m of clear width for two-way movement. For the relationship between cycle volumes and width, see Table 4.
- A smooth surface material—asphalt or concrete. Paver blocks should be avoided.
- Elevated 150 mm above the carriageway.
- Positioned between the footpath and carriageway. Provide a buffer of at least 0.5 m between the cycle track and carriageway. The buffer should be paved if it is adjacent to a parking lane. Increase the buffer to 0.75 m next to buildings, walls, etc.
- Bollards to prevent encroachments by cars. One bollard placed in the middle of the cycle track, to allow for cyclists to pass on either side. Bollard spacing of 1.2 m.



Figure 47. For one-way movement, cycle tracks should have a width of 2 m plus a 0.5 m buffer next to the carriageway. The width should be increased to 3.0 m for two-way movement.

4.4 PUBLIC TRANSPORT

The A8 corridor is designated as Line 1 in the 2014 Nairobi Mass Rapid Transit Harmonisation Plan. Accordingly, KenHA is currently preparing designs for a BRT line between Kabete Police Station at the northwest end and the Mombasa Road industrial area at the southeast end, along the Waiyaki Way, Uhuru Highway, and Mombasa Road sections of the A8 corridor, a total of 27 km. A branch BRT

line is proposed between the southern terminus of the main line BRT and Jomo Kenyatta International Airport (JKIA), a distance of 6 km. Public transport elements along the corridor should be designed in accordance with the Nairobi Metropolitan Area Transport Authority (NaMATA) BRT Design Framework (2018) and should incorporate the following:

- Dedicated median lanes for BRT buses, with physical separation from mixed traffic lanes.
- Stations spacing from 300-800 m.
- Central station platforms with level boarding.
- Passing lanes in order to reduce station saturation and facilitate the operation of express services.
- Adequate station sub-stops as determined through demand analysis.
- Safe passenger access. Where the expressway is elevated, passenger access should be provided at grade with signals or tabletop crossings.
- Intersections with two-phase signal cycles.
- Minimal interruptions for mixed traffic U-turns.