

**DRAFT TANZANIA STANDARD**

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| **Public Transport-Part 1: Bus Rapid Transit-Service requirements** |

**TANZANIA BUREAU OF STANDARDS**

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The General Techniques Standards Divisional Committee Standards Committee, under whose supervision this Tanzania Standard was prepared, consists of representatives from the following organizations:

College of Engineering and Technology (CoET)

The National Environment Management Council (NEMC)

Weight and Measure Agency (WMA)

College of Natural and Applied Sciences (CoNAS)

National Bureau of Statistics (NBS)

Tanzania Portland Cement Company Limited (TPCC)

Simba Plastics Co Limited

The organizations marked with an asterisk (\*) in the above list, together with the following were directly represented on the Technical Committee entrusted with the preparation of this Tanzania Standard:

National Institute of Transport (NIT),

Land Transport Regulatory Authority

Dar Rapid Transit Agency

Tanzania Shipping Agencies Corporation

Tanzania Ports Authority

Tanzania Railways Corporation

Tanzania Shippers' Council

Ministry of works and Transport

Tanzania Bureau of Standards

P O Box 9524

Dar es Salaam

Tel: +255 (22) 2450206/2450949/2450298

Fax: +255 22 2450298

E-mail: info@tbs.go.tz

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**0 National Foreword**

The Tanzania Bureau of Standards is the statutory national standards body for Tanzania, established under the Act.No.3 of 1975, amended by Act.No.2 of 2009.

This Tanzania Standard has been developed by Logistic and transportation Services Technical committee, under the supervision of the General Techniques Standards Divisional Committee (GTDC) and it is in accordance with the procedures of the Bureau.

**0.1 Terminology and conventions**

The text of the International standard is hereby being recommended for approval without deviation for publication as Tanzania standard.

Some terminology and certain conventions are not identical with those used as Tanzania Standard; attention is drawn to the following:

The comma has been used as decimal marker for metric dimensions. In Tanzania, its current practice to use a full point on the baseline as decimal marker.

Whenever the words “International Standard” appear, referring to this Finalized Tanzania Standard, they should read as “Tanzania Standard”.

1. **Scope**

This Draft Tanzania Standard defines a set of elements essential that minimize vehicle delay thus ensuring the “rapid” component of a bus rapid transit system.

Note: These same criteria can be applied to other commuter modes of transport within the cities to meet a more general definition of rapid transit.

# Normative references

There are no normative references in this document.

# Terms and definitions

For the purpose of this document, the following terms and definitions shall apply;

**Bus Rapid Transit (BRT)**

high-quality and capacity bus-based public transport system that delivers fast, frequent, comfortable, and cost-effective services at lower infrastructure and operational cost, through dedicated and segregated lanes which typically aligned to the centre or kerb-side of the road together with non-motorized facilities

**dwell time**

time a transit vehicle spends at a stop for boarding and alighting of passengers, including opening and closing doors



**headway/** **service frequency**

time interval between the passing of successive transit buses moving along the same route in the same direction, usually expressed in minutes.

**Intelligent Transportations Systems (ITS)**

advanced technologies and systems that aim to improve the safety, efficiency, and sustainability of transportation networks

**BRT trunk corridors**

section of a road or contiguous roads served by a bus route or multiple bus routes that have dedicated lanes

**delineators**

road markers that define the busway, and need enforcement to be effective

**waiting time**

duration a passenger spends at a BRT station or terminal before boarding a bus measured from the moment a passenger arrives at the station or terminal until the bus departs

**dedicated right-of-way**

bus-only lanes make for faster travel

**busway alignment**

center of roadway or bus-only corridor keeps buses away from the busy curbside where cars are parking, standing, and turning

**off-board fare collection**

fare payment at the station or terminal or stops, instead of in the BRT bus

**intersection treatments**

specific strategies or design features implemented at intersection to improve traffic flow, reduce delays, and prioritize the movement of BRT buses

**platform-level boarding**

designed feature in bus rapid transit system where passengers board buses from a platform that is the same height as the bus flow

**center station**

boarding platform located in the median of a road typically between the dedicated BRT lanes, allowing buses to travel in either direction to serve a single, centrally position station

**passing lane**

additional bus lane to the station for a given direction of travel that allow overtake

**docking bays**

designated and geometrically defined space at bus station or terminal where the bus aligns precisely with the station platform to allow safe, level and efficient boarding and alighting passengers



**sub-stops**

designated individual boarding or alighting position within a larger station or terminal typically assigned specific route, service pattern or bus line

**terminal**

designated end-point that functions as an interchange or transfer between feeder, trunk route and other means of transport

# Elements of BRT

In order to eliminate sources of delay from congestion, conflicts with other vehicles, and passenger boarding and alighting, the BRT shall have the following elements:

1. Dedicated right-of-way
2. Busway alignment
3. Off-board fare collection
4. Intersection treatments
5. Platform-level boarding
   1. **Dedicated Right-of-way**
      1. There shall be a dedicated right-of-way to ensure buses move quickly and unimpeded by congestion.
      2. Physical design shall be critical to the self-enforcement of the right-of-way.
      3. There shall be dedicated lanes in heavily congested areas where it is harder to take a lane away from mixed traffic to dedicate it as a busway.
      4. Enforcement of the dedicated lanes shall be handled in different ways and shall have the following varying degrees of permeability but not limited to:
6. delineators,
7. bollards,
8. car traps,
9. colorized pavement, and
10. camera enforcement.
    * 1. Dedicated right-of-way shall have a dedicated lanes and full enforcement or physical segregation applied to the busway corridor length.
    1. **Busway Alignment**
       1. The busway shall be located where conflicts with other traffic can be minimized, especially from turning movements from mixed-traffic lanes.
       2. The busway alignment shall be either of three Trunk Corridor Configurations:
11. **Tier 1 Configurations**
12. Two-way median-aligned busways that are in the central verge of a two-way road.
13. Bus-only corridors where there is a fully exclusive right-of-way and no parallel mixed traffic, such as transit malls and converted rail corridors.
14. Busways that run adjacent to an edge condition like a waterfront or park where there are few intersections to cause conflicts.
15. Busways that run two-way on the side of a one-way street.
16. **Tier 2 Configurations**
17. Busways that are split into two one-way pairs but are centrally aligned in the roadway.
18. Busways that are split into two one-way pairs but aligned to the curb.
19. **Tier 3 Configurations**

Virtual busway that operates bi-directionally in a single median lane that alternates direction by block

* 1. **Off-board Fare Collection**
     1. There shall be either of two basic approaches to off-board fare collection:

1. “Barrier-controlled” where passengers pass through a gate, turnstile, or checkpoint upon entering the station where their ticket/ card is verified or fare is deducted.
2. “Proof-of-payment,” where passengers pay at a kiosk and collect a paper ticket which is then checked prior boarding in the bus.
   * 1. Off-board fare collection shall occur during all operating hours.
     2. Off-board fare collection shall have trunk stations that have barrier-controlled, off-bus fare collection.
     3. Off-board fare collection shall be implemented on routes that connect to a different trunk corridor for proof-of-payment enforcement.
   1. **Intersection Treatments**
      1. Traffic-signal shall prioritize an approaching BRT vehicle.
      2. All turns across the bus lane shall be prohibited across the busway.
   2. **Platform-level Boarding**
      1. The bus-station platform shall be level with the bus floor in order to reduce boarding and alighting times per passenger.
      2. The bus-to-platform gap shall be of less than 12 cm.

# Service planning

* 1. **Multiple Routes**
     1. There shall be multiple routes to operate on a single corridor so as to reduce door-to-door travel times by reducing transfer penalties. This shall include:

1. Routes that operate over multiple corridors,
2. Multiple routes operating in a single corridor that go to different destinations once they leave the trunk Line.
   * 1. There shall be two or more routes exist on the corridor, servicing at least two stations.
   1. **Peak Frequency**
      1. Peak frequency shall be measured by the number of buses observed per hour for each route that passes the highest demand segment on the corridor during the peak period.
      2. The peak frequency deduction shall be allocated based on the percentage of routes that have a frequency of at least one bus after s every five (5) minutes during the peak hours.

NOTE: If observations are not able to be made, frequencies shall be obtained through route schedules.

* 1. **Low Off-peak Frequency**
     1. Off-peak frequency shall be measured by the buses per hour of each route passing through the lowest-demand segment on the corridor during the off-peak (mid-day) period.
     2. The off-peak frequency shall be determined based on the percentage of all routes that have a frequency of at least one bus after every ten (10) minutes during the off-peak hours.
  2. **Passenger waiting time**

BRT should have a specified waiting time.

* 1. **Express, Limited, and Local Services**
     1. In order to increase operating speeds and reduce passenger travel times limited and express services shall be provided.
     2. Limited services shall skip lower-demand stations and stop only at major stations that have higher passenger demand.
     3. Express services shall collect passengers at stops at one end of the corridor, travel along much of the corridor without stopping, and drop passengers off at the other end.
     4. Local services shall stop at all stations.
  2. **Control Center**

The BRT shall have a control service center. A full-service control center monitors the locations of all buses with GPS or similar technology and shall:

1. Respond to incidents in real-time
2. Control the spacing of buses.
3. Determine and respond to the maintenance status of all buses in the fleet.
4. Record passenger boardings and alighting for future service adjustments.
5. Use Computer-Aided Dispatch (CAD)/Automatic Vehicle Location (AVL) for bus tracking and performance monitoring.
   1. **Located In major Corridors**

The BRT corridor shall be located along one of the major corridors, in terms of aggregate bus ridership, this will ensure a significant proportion of passengers benefit from the improvements.

* 1. **Demand Profile**

BRT infrastructure shall be built in the highest-demand segments of a road to ensure that the greatest number of passengers benefit from the improvements.

* 1. **Hours of Operations**

A viable transit service shall be available to passengers for at least 16 hours throughout the day.

* 1. **Multi-corridor network**
     1. BRT should include multiple corridors that intersect and form a network, as this expands travel options for passengers and makes the system more viable as a whole.
     2. When designing a new system, some anticipation of future corridors is useful to ensure the designs will be compatible with later developments. For this reason, a long-term plan shall be recognized, with an emphasis on near-term connectivity either through BRT services or infrastructure.

# Staff requirements

All staff shall be trained and qualified for their intended field of work. Qualifications shall be ensured by one of the following:

1. an apprenticeship (on job training) that is guided and supervised by a person that has the skills regarding the relevant subject as well as the skills to communicate this knowledge with respect to the apprentice;
2. experience in the field of work (ideally documented with references from the former employer(s)) or the related authority;
3. vocational training;
4. experience in a related field of work combined with a training program that ensures that any missing qualifications can be addressed. Such an additional training course can be undertaken alongside the work;
5. academic training related to the intended field of work (ideally supplemented by practical experience during the studies).
   1. **Training program**

A training program shall be designed, implemented and periodically reviewed by the management to improve staff competence, according to the identified needs. The training program shall meet the following requirements:

1. after recruitment of the new member of staff, a training or orientation period shall be provided;
2. emergency training (e.g., what to do in an emergency, evacuation plan) and basic life support or first aid training shall be included;
3. other training, such as environmental good practices, hygiene and safety issues, IT skills, foreign languages and sign language, can be considered.
   1. **Customer service**

All staff are responsible for the quality of customer service and shall:

1. be polite and courteous;
2. be clean, tidy and well groomed;
3. provide service promptly and diligently in accordance with procedures;
4. be identifiable; it is recommended that the staff member’s name is displayed on a tag;
5. avoid making loud noises as much as possible or raised voices during the performance of tasks;
6. know how to act in case of emergency;
7. be aware of any specific arrangements available for guests with any kind of disability.
   1. **Driver**

A BRT system requires skilled drivers to ensure safe, efficient, and reliable operation, and shall:

1. possess a deep understanding of the technical aspects of BRT vehicles, including their operation, maintenance/check, and emergency procedures. They should be adept at handling modern bus technologies, such as automated fare collection systems, GPS navigation, and vehicle diagnostics.
2. prioritize passenger safety, adhere to traffic regulations, and maintain control of the vehicle at all times. They should undergo rigorous safety training to handle various scenarios, including adverse weather conditions, vehicle malfunctions, and emergencies.
3. possess excellent customer service skills to interact courteously with passengers, address inquiries, provide assistance to individuals with disabilities, and maintain a positive public image for the transit agency.
4. be familiar with designated lanes, signal priority mechanisms, and station locations to ensure timely arrivals and departures. They should also adapt to changes in routes or detours due to construction or special events.
5. remain adaptable and flexible in dynamic urban environments. They should navigate through congested traffic, respond to unexpected incidents, and adjust their driving behavior to optimize travel times without compromising safety or passenger comfort.
6. haveeffective communication skills for coordinating with passengers, dispatchers, and other transit personnel. Drivers should convey important information clearly and concisely, such as upcoming stops, route deviations, or service disruptions, using onboard announcements, radio systems, or electronic displays.
7. demonstrate professionalism, integrity, and ethical conduct at all times, treating passengers with respect, adhering to schedules, and following established protocols and regulations.
8. be certified and recognized with Transport regulatory authority.
   1. **Station attendants**

Station attendants shall;

1. have strong interpersonal skills to assist passengers, answer questions, provide information about routes and schedules, and handle customer inquiries or complaints effectively.
2. be knowledgeable about safety procedures and protocols to ensure the safety of passengers and staff, including emergency response procedures and evacuation protocols.
3. be able to operate ticketing machines, process payments, issue tickets, and ensure fare compliance among passengers. This requires proficiency in handling cash transactions, understanding fare structures, and reconciling revenues.
4. Have a clear verbal communication for providing announcements, directions, and information to passengers. Additionally, written communication skills may be necessary for documenting incidents or reporting maintenance issues.
5. be able to think quickly on their feet and effectively resolve conflicts or address unexpected situations that may arise, such as passenger disputes, equipment malfunctions, or service disruptions.
6. be detail-oriented to ensure the station facilities are clean, well-maintained, and properly functioning. This includes monitoring the condition of platforms, seating areas, signage, and amenities, as well as reporting any maintenance or cleanliness issues promptly.

# Infrastructure requirements

* 1. **Passing Lanes at Stations**
     1. BRT system shall have passing lanes at station stops to allow both express and local services and accommodate a high volume of buses without getting congested with buses backed up waiting to enter.
     2. The passing lanes at BRT stations shall be:

1. long enough to accommodate at least one bus overtaking another. The length of the passing lane depends on factors such as the expected frequency of bus arrivals, station capacity, and anticipated dwell times. Typically, passing lanes are designed to extend beyond the length of a bus to allow for smooth merging and overtaking maneuvers.
2. be aligned with the main travel lanes to facilitate easy access and merging. The grade of the passing lane should be consistent with the surrounding roadway to ensure safe and efficient bus operations. Steep grades or sharp curves should be avoided to prevent potential conflicts or disruptions.
3. be wide enough to accommodate buses side by side without impeding traffic flow or encroaching on adjacent lanes. Adequate clearance should be provided between passing buses and station platforms to ensure passenger safety and accessibility during boarding and alighting.
4. equipped with traffic signal priority mechanisms to prioritize buses accessing or exiting passing lanes at stations. Dedicated signal phases or preemption systems can help minimize delays and ensure smooth transitions between passing and main travel lanes. Traffic control measures, such as signage, markings, and lane delineators, should be employed to guide bus drivers and other road users.
5. designed with accessibility features to accommodate passengers with special needs, such as wheelchair ramps, tactile paving, and audible signals. Platform heights should be compatible with low-floor buses to facilitate level boarding and alighting for all passengers, regardless of mobility limitations.
6. integrated seamlessly with station infrastructure, including platforms, shelters, and amenities. Clear signage and wayfinding elements should be provided to direct passengers to boarding areas and indicate the location of passing lanes for bus operators. Shelter placement should not obstruct visibility or access to passing lanes.
7. maintained and monitored to ensure their functionality and safety. Inspection programs should be implemented to identify and address any signs of deterioration, pavement markings fading, or obstructions hindering bus operations. Traffic management authorities should conduct periodic evaluations of passing lane performance and implement improvements as needed to optimize BRT service reliability and efficiency.
   1. **Stations Set Back from Intersections**
      1. center stations shall be located at minimum 40 meters from intersections to avoid delays.
      2. center stations shall be set back at least 40 m from intersection or meet at least one of the following exemptions:
8. fully exclusive busways with no intersections.
9. stations located near intersections due to block length (such as downtowns where blocks are relatively short)
   * 1. The setback should provide a safe distance between the station platform and the intersection to minimize the risk of accidents involving turning bus and pedestrians waiting at the station. A clear safety zone should be established to ensure that buses can maneuver safely without impeding traffic flow or endangering passengers.
     2. Traffic signal phasing and timing should be optimized to prioritize bus movements and facilitate smooth transitions between the station and the intersection. Coordination with traffic signal timings is essential to minimize conflicts between buses exiting the station and bus turning at the intersection.
     3. Sufficient queueing space should be provided at the station to accommodate waiting passengers without obstructing pedestrian pathways or encroaching on the roadway. Queueing areas should be clearly marked and designed to facilitate orderly boarding and alighting processes, especially during peak travel times.
     4. Setback stations should be designed to ensure accessibility for passengers with special needs, such as wheelchair users and individuals with mobility impairments. Sidewalks, crosswalks, and curb ramps should be provided to facilitate safe and convenient access to station platforms from adjacent sidewalks or pedestrian pathways.
     5. Station setbacks should maintain adequate visibility and sightlines for both bus operators and other road users approaching the intersection. Clear signage, pavement markings, and traffic control devices should be installed to enhance visibility and guide the movement of buses and pedestrians within the station area.
     6. Consideration should be given to the surrounding land use and development patterns when determining the setback distance for BRT stations. Stations should be situated in locations that minimize conflicts with adjacent land uses, such as commercial or residential properties, and provide convenient access to key destinations and activity centers.
     7. Emergency access routes should be maintained to ensure that emergency vehicles can reach the station area quickly and safely in the event of an incident or medical emergency. Station setbacks should not impede emergency vehicle access or hinder response times for emergency services.
     8. Setback stations should be integrated harmoniously with the surrounding urban environment and streetscape. Design elements such as landscaping, street furniture, lighting, and architectural features can enhance the aesthetic appeal of the station area while improving the overall pedestrian experience and urban quality.
   1. **Terminal** 
      1. Terminal should be situated at high-demand areas or intersections of major routes and easy access to feeder services, major roads, and surrounding urban areas.
      2. Terminal should have level of boarding (platform), shelter and seating for passengers.
      3. Terminal should have a roadway integration that have linkages with taxi stands, motorcycle bays, non-motorized transport (NMT) paths, and park-and-ride facilities and Intermodal transfer areas.
      4. Terminal should be designed to allow for efficient and conflict free circulation of buses ensuring safe and smooth operation.
      5. Terminal should have ticket and fair collection systems, gates or validators for entry control.
      6. Terminal should have Intelligent Transport Systems (ITS)to provide the following information but not limited to:
10. real-time tracking,
11. display of bus arrivals/departures,
12. communication systems for operators and staff,
13. integration with smart cards or mobile ticketing,
14. daily bus dispatch,
15. fuel consumptions,
16. driver behavior and
17. bus holding areas
    * 1. Terminal should have ramps and tactile paving for persons with special needs, pedestrian crosswalks and footbridges where necessary, emergency exits and fire safety equipment, CCTV cameras and security personnel.
      2. Terminal should have social amenities such as sheltered waiting areas, seating benches, clean and accessible public toilets, adequate lighting and ventilation, Information displays (routes, schedules, fares), ticketing booths or automated machines, security checks and surveillance.
      3. Terminal should have waste management systems, green spaces or landscaping, and use of renewable energy (e.g., solar panels).
    1. **Center Stations**
       1. Center stations shall have center platforms serving both directions of service.
       2. In some cases, stations may be centrally aligned but split into two—called split stations—in which each station houses a particular direction of the BRT system. The connection between the two directions shall be provided.
       3. Center stations should be strategically located along BRT routes to serve major activity centers, transfer points, and destinations with high passenger demand.
       4. Center stations should be easily accessible to pedestrians and cyclists, with well-defined crosswalks, sidewalks, and bicycle lanes connecting to surrounding areas. Accessibility features such as ramps, elevators, and tactile paving should be provided to accommodate passengers with disabilities.
       5. Center stations should have boarding platforms accessible from both sides of the street via pedestrian crossings. Platforms should be long enough to accommodate multiple buses simultaneously and wide enough to allow for efficient passenger movement and queuing.
       6. Sheltered waiting areas, seating, and passenger amenities such as lighting, information displays, and real-time arrival information should be provided to enhance passenger comfort and convenience.
       7. Center stations should have adequate traffic separation measures to ensure the safety of passengers boarding and alighting from buses.
       8. Physical barriers, such as bollards, curbs, or guardrails, should be installed to prevent unauthorized vehicle access to the platform area.
       9. Clear signage, markings, and traffic signals should be employed to guide motorists and pedestrians and minimize conflicts with bus movements.
       10. Center stations may benefit from traffic signal priority mechanisms to expedite bus movements through intersections and minimize dwell times at stops. Dedicated signal phases, Transit Signal Priority (TSP) systems, or queue jump lanes shall be implemented to give buses priority access to intersections, reducing delays and improving overall service reliability.
       11. Center stations should be integrated with passenger amenities and facilities to enhance the overall transit experience.
       12. Center stations should be equipped with security cameras, emergency call boxes, and lighting to enhance passenger safety and deter vandalism or criminal activity.
       13. Auxiliary police or security personnel shall be deployed to patrol stations and provide assistance to passengers as needed, ensuring a safe and secure environment for all users.
       14. Regular maintenance and cleaning of center stations should be conducted to ensure their functionality, safety, and appearance.
       15. Center stations should have accessible public toilets.

# Station design and station-bus interface

* 1. **Distances Between Stations**
     1. The distance between station stops should be 500 meters between stations.
     2. Average distances between stations should not exceed 800 meters and should not be below 300 meters.
     3. Station shall have a minimum of one sub-stop and two docking bays on each side.
     4. One sub-stop shall not have more than two docking bays, but at that point another sub-stop should be added.
     5. There shall be at least two sub-stops or docking bays at the highest demand stations.
     6. Docking bays and sub-stops should be located along bus routes to optimize accessibility, minimize walking distances for passengers, and facilitate convenient transfers between bus services.
     7. Docking bays and sub-stops should be typically situated at key destinations, transfer points, or high-demand areas where passenger demand is significant.
     8. Docking bays should be adequately sized to accommodate multiple buses simultaneously, allowing for efficient boarding and alighting operations. Sufficient space should be provided to accommodate queuing passengers, sheltered waiting areas, and amenities such as seating, ticket vending machines, and real-time information displays.
     9. Docking bays and sub-stops should be designed to ensure accessibility for passengers with special needs, such as wheelchair users, elderly individuals, and those with mobility impairments, providing features such as level boarding platforms, tactile paving, ramp access, and audible announcements to facilitate safe and convenient boarding and alighting for all passengers.
     10. Docking bays and sub-stops should be integrated seamlessly with existing infrastructure, such as sidewalks, crosswalks, and traffic signals, to ensure smooth and safe pedestrian access.
     11. Docking bays and sub-stops should be designed to minimize conflicts with other modes of transportation, such as bicycles and pedestrians, and incorporate appropriate signage, markings, and traffic control measures to guide passengers and bus operators.
  2. **Safe and Comfortable Stations**
     1. Stations should have an internal width of at least 3 meters.
     2. Stations should be all weather protected, such as from wind, rain, heat and/or cold, as appropriate to the conditions in a specific location.
     3. Safe stations should be well-lit, transparent and with reliable security – whether through security guards or cameras–essential to maintaining ridership.
  3. **Bus Doors and emergency exits**
     1. Buses shall have four or more doors on the station side of the bus for articulated buses or two wide doors on the station side of the bus for regular (non-articulated) buses and allow boarding through all doors.
     2. Bus doors should be wide enough to accommodate passengers of all sizes, including those with mobility aids such as wheelchairs, and strollers. Accessibility features such as low-floor design, retractable ramps, and level boarding platforms enable seamless access for passengers with special needs.
     3. Bus doors shall be equipped with automated or semi-automated opening and closing mechanisms controlled by the driver or onboard systems. Drivers should have full control over door operation, including the ability to manually override automated functions in case of emergencies or malfunctions.
     4. Clear signage, audible signals, and passenger announcements may be used to indicate when doors are opening or closing to ensure passenger safety and awareness.
     5. Bus doors should incorporate safety features like anti-trap sensors, safety edges, and interlock systems detect obstructions to prevent doors from closing on passengers or objects.
     6. Bus doors should have emergency release mechanisms to allow passengers to manually open doors in case of emergency evacuation or malfunction.
     7. Bus doors shall be robust and reliable to withstand frequent use, varying weather conditions, and the rigors of urban transit operations.
     8. Bus doors should be designed and positioned to facilitate rapid evacuation of passengers while ensuring orderly egress and compliance with safety regulations.
     9. Bus should have emergency exit doors, windows and emergency hammer to facilitate evacuation in case of emergencies such as fire or collision.
  4. **Sliding Doors in BRT Stations**
     1. All stations shall have sliding doors.
     2. Sliding doors should operate quickly and smoothly to minimize dwell times at stations and maintain service reliability. Rapid door opening and closing mechanisms help expedite passenger boarding and alighting, allowing buses to maintain schedule adherence and minimize congestion at stops.
     3. Sliding doors shall be reliable and durable to withstand frequent opening and closing cycles throughout the operational lifespan of the bus. Robust construction materials, high-quality components, and reliable mechanisms are essential to ensure smooth and trouble-free door operation under various operating conditions, including heavy passenger loads, adverse weather, and urban traffic environments.
     4. Sliding doors should be equipped with various safety features to protect passengers, pedestrians, and operators. These may include sensors to detect obstacles or obstructions during door operation, emergency stop mechanisms to halt door movement if necessary, and safety interlocks to prevent doors from closing while passengers are boarding or alighting.
     5. Sliding doors should comply with accessibility standards and regulations to ensure equal access for all passengers, including those with special needs. Doors should provide sufficient width and clearance for wheelchair users and other mobility devices to enter and exit buses easily. Tactile markings, audible signals, and contrasting colors may also be employed to assist passengers with visual impairments in identifying door locations and operation.
     6. Sliding doors should be seamlessly integrated with the overall design of the bus to optimize space utilization, streamline boarding processes, and enhance passenger comfort.
     7. Door placement should be strategically positioned to align with station platforms and minimize walking distances for passengers.
     8. Interior layout and seating arrangements should complement door locations to facilitate efficient passenger flow and circulation within the station.
     9. BRT operators should implement proactive maintenance programs to inspect, lubricate, and adjust door mechanisms as needed, as well as promptly address any issues or malfunctions to minimize service disruptions and ensure passenger satisfaction.
  5. **Branding**
     1. All buses, routes, and stations in corridor shall follow single unifying brand of entire BRT system.
     2. BRT operators shall develop a cohesive visual identity for the BRT system, including a logo, color scheme, typography, and graphic elements. The visual identity should reflect the system's values, personality, and unique attributes while maintaining consistency across various touchpoints such as buses, stations, signage, and promotional materials.
     3. BRT operators shall design buses with distinctive livery and branding elements that align with the overall visual identity of the BRT system. Incorporate the system's logo, colors, and graphics prominently on bus exteriors to increase visibility and reinforce brand recognition as buses travel along routes and through urban area.
     4. BRT operators shall provide staff, including drivers, station attendants, and customer service representatives, with branded uniforms and apparel that reflect the system's visual identity and professionalism.
     5. BRT operators shall develop comprehensive marketing and promotional campaigns to raise awareness of the BRT system, educate the public about its features and benefits, and encourage ridership. Utilize a mix of traditional and digital marketing channels, such as advertisements, social media, websites, brochures, and public events, to reach diverse audiences and generate interest in the BRT system.
  6. **Passenger Information**
     1. BRT system to provide travelers with real-time updates, guidance, and assistance throughout their journey.
     2. BRT systems should offer real-time information about bus arrival and departure times at each station. This information can be displayed on electronic signs, mobile applications, or through automated announcements, allowing passengers to plan their trips more effectively and minimize wait times.
     3. Clear and easily accessible route maps and schedules should be available at BRT stations, online, and through mobile apps. These resources should provide comprehensive information about all routes, stops, frequencies, and service hours, helping passengers navigate the system and make informed travel decisions.
     4. Passengers should have access to detailed fare information, including ticket prices, fare zones, and available payment options (e.g., cash, smart cards, mobile payments). Fare collection procedures should be clearly explained, and ticket vending machines or fare validators should be conveniently located at stations for easy access.
     5. BRT stations should be equipped with clear signage and wayfinding aids to guide passengers to boarding areas, ticketing facilities, amenities, and other points of interest. Signage should use Swahili and English languages, and universally recognized symbols a to accommodate passengers of diverse backgrounds and abilities.
     6. Passenger information should address the needs of travelers with special needs by providing details about accessible services, facilities, and assistance available within the BRT system. This includes information about wheelchair ramps, priority seating areas, tactile paving, and audible announcements.
     7. BRT systems should communicate emergency procedures and safety information to passengers, including evacuation protocols, emergency contacts, and instructions for reporting suspicious activities or incidents. Informational signage, onboard announcements, and public awareness campaigns can help educate passengers about safety measures and emergency preparedness.
     8. Trained staff or customer service representatives should be available at BRT stations to assist passengers with inquiries, directions, and travel assistance. Customer service centers, hotline numbers, or online help desks can provide additional support for passengers seeking information or assistance outside of station hours.

# Integration and access

* 1. **Integration with other public transport modes**
     1. The BRT system should integrate into the rest of the public transport modes and means such as marine, air, rail, and road.
     2. The BRT corridor should integrate physically with other public transport modes.
     3. BRT stations should be strategically located to facilitate convenient transfers between buses and other modes of public transport, such as trains, trams, and ferries. Stations should be integrated with existing transit hubs or interchanges to minimize walking distances and streamline transfer connections.
     4. Where feasible, BRT infrastructure should be designed to accommodate other modes of public transport, such as shared bus lanes, integrated bus and tram stops, or multi-modal terminals. Shared infrastructure reduces duplication of facilities and enhances operational efficiency by enabling seamless transitions between different modes of transport.
     5. Timed transfer points should be identified and prioritized in the network design to optimize connectivity and improve the overall travel experience.
     6. BRT system should implement a unified fare system across different modes of public transport simplifies fare payment for passengers and encourages multi-modal travel. Integrated fare collection methods, such as smart cards or mobile ticketing, allow passengers to use the same payment mechanism across BRT, trains, buses, and other transit services without the need for separate tickets or transfers.
  2. **Pedestrian Access**
     1. BRT shall have a good, safe pedestrian access at every station as specified in the roads act.
     2. Good pedestrian access shall be defined as:

1. At-grade pedestrian crossings where pedestrians cross a maximum of two lanes of traffic before reaching a pedestrian refuge (sidewalk, median);
2. If crossing more than two lanes at once, a signalized crosswalk is provided;
3. Well-lit crosswalks where the footpath remains level and continuous;
4. While at-grade crossings are preferred, pedestrian bridges or underpasses with working escalators or elevators can also be considered;
5. Sidewalks along corridor are at least 3 meters wide.
   1. **Overcrowding**
      1. The average passenger density during the peak hour shall not be greater than five passengers per square meter on more than 25% of buses in the predominant direction.
      2. The average passenger density during the peak hour shall not be greater than three passengers per square meter at stations.

NOTE: If this metric is not easily calculated, then clearly visible signs of overcrowding on buses or in stations shall be used, such as doors on the buses regularly being unable to close, stations overcrowded with passengers because they are unable to board full buses, etc.

* 1. **Maintenance of busway, buses, stations, and technology systems**
     1. The busway, buses, stations and technology systems shall be regularly maintained.
     2. Busway shall not have significant wear, including potholes, warping, trash, debris.
     3. Buses shall not have graffiti, litter, seats in disrepair.
     4. Stations shall not have graffiti, litter, occupancy by vagrants or vendors, or have structural damage.
     5. Technology systems, including fare collection machines, shall be functional.
     6. BRT operator shall have a depot for bus services, cleanliness (washing bay) and refueling or recharging or refilling.

# Complaints and feedback management

* + 1. The BRT operator shall record and analyse complaints and feedback to improve quality of services provided to the passenger and provide passenger with information about the process of making a complaint.
    2. The BRT operator shall have a system for monitoring, assessing and responding to complaints and feedback.

# Key Performance indicators

The performance of BRT operators shall be assessed based on:

1. Service requirements of this standard
2. Operational efficiency and effectiveness
3. Financial performance
4. Safety and reliability
5. Environment impact