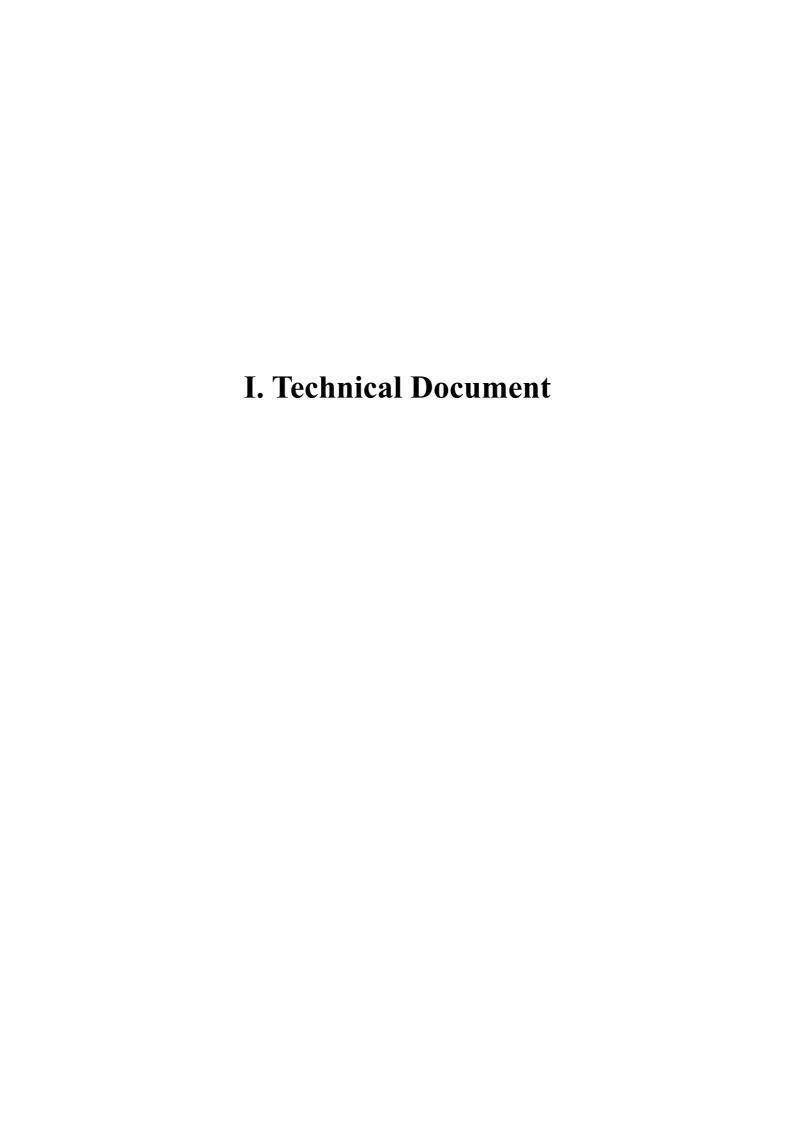
Attachment

I. Technical Document

- Chapter 5 Technical Report on Traffic Demand Forecast and Public Transport Strategy
- Chapter 6 Instruction Materials to be Prepared for Implementing the Mandates
- Chapter 6 The Draft of the Metropolitan Transport Authority Act
- Chapter 6 The Draft of the Metropolitan Public Transport Operators Regulations
- Chapter 7 Bus Operator's Handbook
- Chapter 7 Report on Route 111 Pilot Project
- Chapter 8 Roadmap for Gender and Vulnerable Group Mainstreaming in Public Transportation Sector in Nairobi Metropolitan Area

II. Handover Equipment and Goods List

- Certificate of handover
- Goods List



Chapter 5

Technical Report on Traffic Demand Forecast and Public Transport Strategy

THE PROJECT FOR CAPACITY BUILDING FOR BUS OPERATION POLICY AND MANAGEMENT IN NAIROBI METROPOLITAN AREA

Technical Report
on
Traffic Demand Forecast
and
Public Transport Strategy

June 2025

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1. INTRODUCTION

Five BRT lines are planned by various development partners and are expected to become the backbone of public transportation in the NMA. However, the feasibility studies and demand forecast have been conducted on a route-by-route basis, and analysis and evaluation of the network as a system have not been conducted. This project aims to update the transportation demand forecast model in the NMA based on the NIUPLAN developed in 2013, and to prepare a database for urban transport development.

Based on the data collected in Activity 2-1 and the traffic survey result, the traffic demand forecast model prepared in NIUPLAN will be updated as an existing model, and future traffic demand will be forecasted, including the expanded area with the NMA, rather than developing a new demand forecast model. The result shall be utilised for the revision of the public transport policies. Through the work, technology transfer to the C/P regarding the demand forecasting and public transport policy making is conducted. The framework for updating the traffic demand forecast model is shown in Figure 1.1.

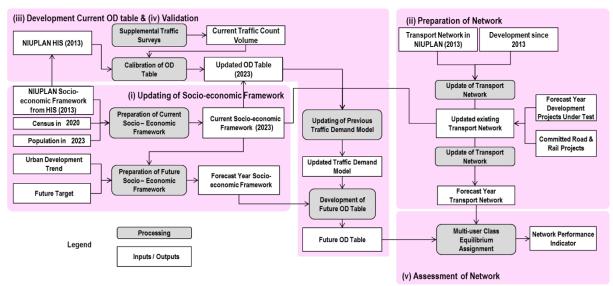


Figure 1.1 Framework for Updating Traffic Demand Forecasting Model in the Project

2. TRAFFIC SURVEY

2.1 Outline of the Traffic Survey Conducted in this Project

With respect to the review of existing traffic survey, while NIUPLAN has a comprehensive traffic survey that includes Household Interview Survey (HIS), it does not fully address the ever-expanding NMA and needs to be updated based on the actual metropolitan area conditions.

Therefore, the cordon lines and screen lines survey will be redefined in this Project based on the effective traffic zone within the metropolitan area, and a person trip survey will be conducted in parallel, targeting 5,000 households, which is 1% of 500,000 households within the area. For calibration purposes, traffic count surveys were conducted on the cordon lines similar to NIUPLAN (referred to as Inner-Cordon line in this project) and the main corridors. Furthermore, traffic count surveys were also conducted at the NMA boundary following NaMATA's request (referred to as the external cordon line).

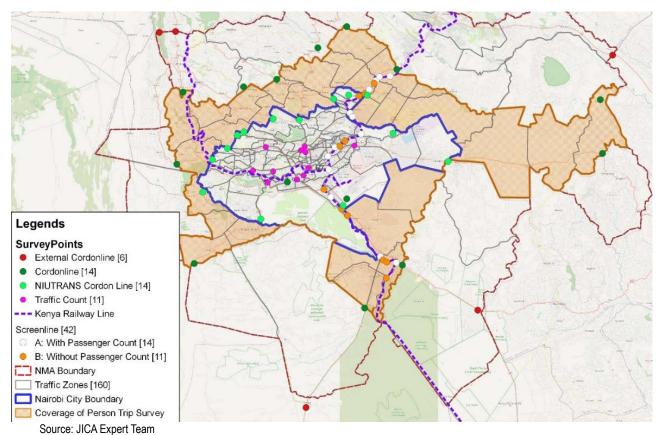


Figure 2.1 Location of the Traffic Surveys

Table 2.1 Traffic Survey for Updating Traffic Demand Forecasting Model

Survey	Purpose	Survey Point (tentative)	Contents
External Cordon Line	To understand the volume of traffic and trip characteristics inside the real metropolitan area	6	Traffic count survey
Cordon Line	To compare the traffic volume in NIUPLAN and calibrate the current traffic volume	14	Roadside OD interview Traffic count survey
Screen Line	To calibrate current traffic survey	25	Traffic count survey Passenger count
Traffic Volume	To compare the traffic volume in NIUPLAN and calibrate the current traffic volume	26	Traffic count survey
Person Trip	To understand the transportation characteristics in the real metropolitan area outside Nairobi city	5,000 household (outside Nairobi City)	Face-to-face interview
SP Survey	To understand the mode choice preference of people along the BRT Corridor	1,000 household (along BRT corridor)	Face-to-face interview

Source: JICA Expert Team

2.2 Cordon Line Survey

2.2.1 Survey Objectives

The objectives of the Cordon Line Survey are:

- (i) To obtain trip data of nonresidents of the MUCEP project area to augment the data that will be gathered in the Household Interview Survey (HIS) (see Part 1), and
- (ii) To gather data to replace the external trip data of the MMUTIS origin–destination (OD) tables.

Although this survey will be conducted for the particular purposes mentioned above, results aim to provide the following information:

- (i) Intercity vehicular traffic movement including OD distribution by vehicle type, hour, and trip purpose, and
- (ii) Intercity public transportation passenger movement including OD distribution by public transportation mode, hour, and trip purpose.

2.2.2 Survey Coverages

In order to obtain the needed information, traffic count and OD interview survey are conducted.

In this Project, the 3 types of cordon line as follows:

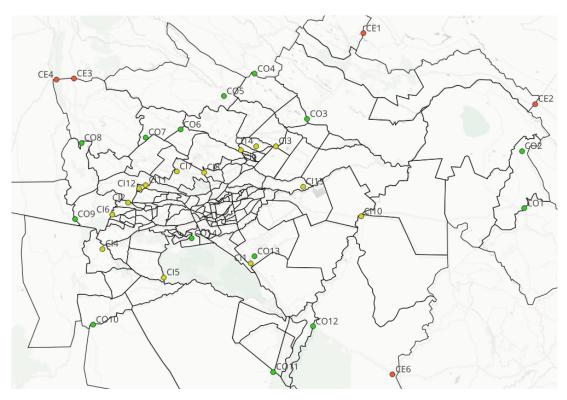
- (i) Inner Cordon line (14 stations): are on the boundary of Nairobi City and the cordon line as of NIUPLAN Study (2013). The study area is substantially defined as the "Commuting Area" and supposed that there is a few commuting trips from the outside, and the boundary is not suitable as the cordon line. Only traffic count survey was conducted and the result is used for the calibration of the OD table and network.
- (i) Outer Cordon line (14 stations): are on the boundary of the substantial metropolitan area, which is defined by the JET. Traffic count and OD interview survey are

conducted to develop the external OD table for non-residence of the Study Area.

(ii) External cordon line (6 stations): Upon request by the C/P, the study area is expanded to the overall NMA. The person trip survey is conducted in the limited area (see Figure 2.1) but the OD table was developed for the outer zones also. Only traffic count survey was conducted, and the result is used for the calibration of the OD table and network.

Table 2.2 List of the Cordon Line Survey Stations

	ID ID	Road	Date								
	IC01	Outside JKIA, A109	Tuesday 24th October 2023								
	IC02	Uthiru	Tuesday 19th to Thursday 21st September 2023								
	IC03	Clayworks	Wednesday 11th October 2023								
	IC04	Embulbul	Tuesday 3rd October 2023								
	IC05	Multimedia University	Thursday 5th October 2023								
Inner	IC06	Githima	Tuesday 3rd October 2023								
Cordon	IC07	Ruaka	Tuesday 19th to Thursday 21st September 2023								
line	IC08	Runda	Tuesday 19th to Thursday 21st September 2023								
illie	IC09	Kamiti	Tuesday 19th to Thursday 21st September 2023								
	IC10	Kamulu, Kangundo Road	Wednesday 11th October 2023								
	IC11	Mwimuto	Tuesday 19th to Thursday 21st September 2023								
	IC12	Lower Kabete	Tuesday 19th to Thursday 21st September 2023								
	IC13	Ruai, Eastern Bypass	Wednesday 11th October 2023								
	IC14	Kahawa West	Tuesday 19th to Thursday 21st September 2023								
	OC01	Tala	Wednesday 11th October 2023								
	OC02	Katheka	Wednesday 11th October 2023								
	OC03	Ruiru	Wednesday 27th December 2023								
	OC04	Wamitaa	Tuesday 19th to Thursday 21st September 2023								
	OC05	Kambui	Tuesday 19th to Thursday 21st September 2023								
	OC06	Ndumberi	Tuesday 19th to Thursday 21st September 2023								
Outer	OC07	Banana Hill	Tuesday 19th to Thursday 21st September 2023								
Cordon	OC08	Rironi	Tuesday 3rd October 2023								
line	OC09	Gikambura	Tuesday 19th to Thursday 21st September 2023								
	OC10	Kiserian	Tuesday 3rd October 2023								
	OC11	Kitengela, A8	Tuesday 24th October 2023								
	OC12	Athi River, A8	Wednesday 11th October 2023								
	OC13	JKIA	Wednesday 27th December 2023								
	OC14	Wilson AP, Off Langata road	Tuesday 3rd October 2023								
	CE01	Kenol (Meru - Nairobi Hwy)	Wednesday 11th October 2023								
	CE02	Yatta (A3 road)	Wednesday 11th October 2023								
External	CE03	Limuru 1 (A104)	Thursday 12th October 2023								
Cordon	CE04	Limuru 2 (B3)	Wednesday 11th October 2023								
line	CE05	Isinya (A104)	Wednesday 11th October 2023								
	CE06	Kyumbi	Wednesday 11th October 2023								
	0200	rtyumbi	Wednesday Titli Colober 2020								



Source: JICA Expert Team

Figure 2.2 Location of the Cordon Line Survey Stations

2.2.3 Survey Result

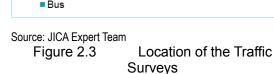
(1) Traffic Count

The results of the traffic count survey is compiled in the project output database. Table 2.3 and Figure 2.3 highlight the change of the traffic volume on the Inner Cordon line (Cordon line as of NIUPLAN Study (2013)). For the vehicle composition in terms of PCU, car / taxi is the dominant mode, followed by light truck. On the other hand, motorcycle shows rapid growth rate from 4,118 pcu to 22,384. The traffic volume by heavy truck / trailer has been decreased due to the development of the southern bypass, alternative freight traffic corridor.

800,000 700,000 600,000 500,000 400,000 300,000 200,000 100,000

Table 2.3 Change of Traffic Volume on the Inner Cordonline between 2013 to 2023

	Year	Bicycle	Motorcycl e	Car/Taxi	Light Truck	Heavy Truck, Trailer	Matatsu / Minibus	Bus	Total
IC01	2013	120	323	20,135	7,725	12,0 98	3,392	2,828	46,621
1001	2023	29	2,503	48,686	15,500	17,140	3,013	6,096	92,966
IC02	2013	85	400	13,971	3,624	9,059	6,294	8,302	41,734
1002	2023	23	1,377	21,755	4,009	315	5,487	7,418	40,383
IC03	2013	61	652	20,036	7,465	5,029	8,562	2,586	44,391
1003	2023	14	2,083	5 7,109	16,097	3,109	6,065	7,462	91,938
IC04	2013	112	341	7,216	1,253	2,295	2,253	4,024	17,493
1004	2023	44	2,283	14,652	2,797	516	1,118	3,208	24,617
IC05	2013	64	319	11,363	1,941	2,122	4,811	2,447	23,067
1005	2023	41	1,979	13,263	2,442	296	2,724	2,190	22,934
IC06	2013	108	657	5,917	1,000	814	2,376	752	11,624
1000	2023	25	1,941	4,814	1,011	90	1,445	387	9,712
IC07	2013	42	176	8,932	2,127	255	5,137	985	17,654
1007	2023	21	1,271	13,624	1,432	99	3,072	1,596	21,114
IC08	2013	70	252	8,058	2,485	343	2,829	1,483	15,520
1000	2023	58	2,161	27,277	3,651	638	3,214	2,236	39,235
IC09	2013	62	181	1,326	467	19	89	45	2,189
1009	2023	29	1,356	5,204	829	99	508	413	8,437
IC10	2013	68	280	1,720	1,386	2,571	1,013	1,574	8,612
10 10	2023	13	826	7,510	2,042	310	812	2,633	14,145
IC11	2013	122	152	2,856	450	79	1,268	548	5,475
1011	2023	32	953	5,258	569	96	1,177	530	8,616
IC12	2013	22	55	2,011	433	58	1,055	864	4,498
1012	2023	14	409	5,257	418	26	991	883	7,999
IC13	2013	13	88	8,129	7,272	10 ,056		270	26,603
1013	2023	15	1,026	14,406	6,516	4,033	1,706	270	27,971
IC14	2013	64	243	4,621	1,664	1,662	544	159	8,957
1014	2023	76	2,217	11,748	2,589	807	1,249	381	19,067
Subtotal	2013	1,013	4,118	116,291	39,2 92	46,460	40,398	26,8 67	274,438
Sublolai	2023	432	22,384	250,562	59,900	27 ,572	32,581	35,702	429,133



2013

■ Bicycle

Car/Taxi

■ Heavy Truck, Trailer

2023

Matatsu / Minibus

■ Motorcycle

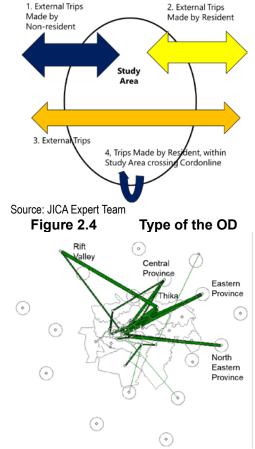
Light Truck

Unit: Passenger Car Unit Base

(2) Cordon OD from Interview Survey

For Outer Cordon line, traffic count surveys and OD interview survey are conducted and the OD table by the non-residents of the Study Area. The target number of samples of the OD interview is 10 % of the traffic count by vehicle type. Theoretically, the Person-Trip Survey covers all trips by the residents in the Study Area, and the results of the Cordon line interviews by the residents are deleted. According to the type of OD pair of the interviewees, the following adjustment factors are applied:

- (i) External trips made by non-resident: 1.0
- (ii) External trips made by residents: 0 (excluded)
- (iii) External trips to / from out of the study area: 0.5 (they cross the cordon line at least two times)
- (iv) Trips made by residents, within study area crossing cordon line: 0 (excluded)



1) 1 dot: 5,000 passenger trips (by all modes) Source: JICA Expert Team, worked by JICA STRADA Matrix Manipulator

Figure 2.5 Desire Line of the OD table from the Cordon Line Survey

The trip to / from out of the study area is visualized as the desire-line in Figure 2.5. The Thika area and north-east directions, relatively large trip demand is confirmed.

2.3 Screen Line Survey

2.3.1 Survey Objectives

The objective of the Screen Line Survey is to obtain data which will be used to calibrate the Household Interview Survey's (HIS) origin—destination (OD) tables by comparing the traffic volumes estimated from the HIS OD tables with those obtained from the surveys done at the screen lines. Accordingly, the screen line survey covers:

- (i) Vehicular traffic volume by vehicle type and hour, and
- (ii) Average number of passengers on board by vehicle type and hour to convert vehicular traffic volume into passenger traffic volume.

In order to obtain the above information, two types of traffic survey will be conducted at the screen lines, as follows:

- (i) Traffic Count Survey, and
- (ii) Vehicle Occupancy Survey.

2.3.2 Survey Coverages

The North-South Axle of the National Railway tracks serve as screen lines for all types of vehicles. Survey stations were located at points where roads cross the screen lines, that is, at bridges and railway crossings. These screen lines are listed in Table 2.1 and Figure 2.6

n this Project, the survey stations are divided into Type A (major road) and Type B (minor road). The vehicle occupancy survey is conducted only at Type A stations.

Table 2.4 List of the Screen Line Survey Stations

			Ellio Gai voy Gtations						
	ID	Road	Date						
	SCA_02	Matangi road	Wednesday 11th October 2023						
	SCA_03	Thika Rd. Junction Ruiru	Wednesday 25th October 2023						
	SCA_04	Ruiru Town	Tuesday 24th October 2023						
	SCA_06	Eastern Bypass	Tuesday 24th October 2023						
	SCA_10	Githurai, A9	Tuesday 24th October 2023						
	SCA_11	L10 Ruiru	Tuesday 24th October 2023						
Screenline	SCA_18	Komarock - Mwiki road	Tuesday 24th October 2023						
Type A	SCA_24	Baraka road	Wednesday 27th December 2023						
	SCA_25	Outer Ring road	Wednesday 25th October 2023						
	SCA_27	Jogoo road	Tuesday 24th October 2023						
	SCA_28	Lunga Lunga road	Tuesday 24th October 2023						
	SCA_30	Old Mombasa road	Tuesday 24th October 2023						
	SCA_34	Namanga road	Tuesday 24th October 2023						
	SCA_38	KMC road	Wednesday 11th October 2023						
Screenline	SCB_01	Ruiru Entry	Wednesday 11th October 2023						
Type B	SCB_02	Around Lukenya	Wednesday 11th October 2023						

SCB_0	3 Syokimau station	Tuesday 24th October 2023
SCB_0	94 SGR Service road	Tuesday 24th October 2023
SCB_0	5 Athi river road	Wednesday 11th October 2023
SCB_0	Athi river railway	Wednesday 11th October 2023
SCB_0	7 Clayworks	Wednesday 11th October 2023
SCB_0	8 Kenyatta university	2 Wednesday 11th October 2023
SCB_0	9 Cllr. Opundo road	Wednesday 11th October 2023
SCB_1	0 Komarock road 1	Tuesday 24th October 2023
SCB_1	 Nairobi Expressway 	/ Tuesday 24th October 2023

Source: JICA Expert Team

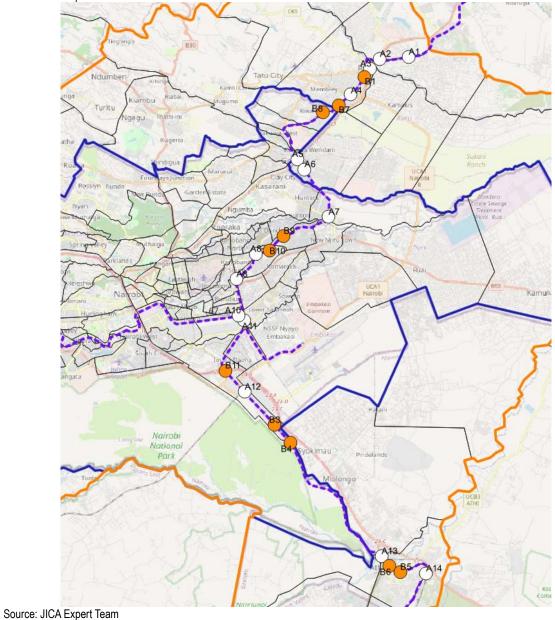


Figure 2.6 Location of the Screen Line Survey Stations

2.3.3 Survey Result

(1) Traffic Count

The results of the traffic count survey are compiled in the project output database.

(2) Vehicle Occupancy Rate

From the result of the vehicle occupancy survey, the average occupancy rate is summarised in Table 2.2.

Table 2.5 Average Occupancy Rate by Vehicle Type

				arrey reace a		P 0			
2 Whe	els	3-4 w	/heels	Pul	olic	Freight			
Bicycle Normal	1.00	Tuk-tuk ¹⁾ 1.38		Matatu (Up to 14-seater)	11.20	Light Truck	1.46		
Bicycle (Glovo or other delivery)	1.00	Car	Car 1.22 Minib		16.10	Heavy Truck	1.39		
Motorcycle	1.00	Taxi 1)	1.00	Medium Bus	37.16	Trailer	1.29		
Motorcycle taxi 1)	1.01	Pickup	1.46	Large Bus	48.01	Others	1.05		
Motorcycle (delivery)	1.00	Van	1.46	Company & School Bus	32.73				

¹⁾ Excluding the driver Source: JICA Expert Team

2.4 Traffic Count Survey

2.4.1 Survey Objectives

The objective of the Traffic Count Survey is to obtain data which will be used to calibrate the origin–destination (OD) tables by comparing the assigned traffic volumes estimated from the HIS OD tables with those obtained from the surveys done at the road sections

2.4.2 Survey Coverages

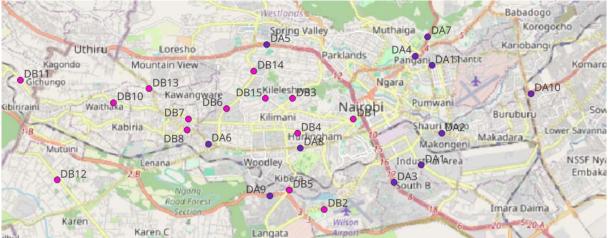
In order to obtain the needed information, a traffic count survey is conducted.

In this Project, the survey stations are divided into Type A (conducted in 2023) and Type B (conducted in 2025, along Ngong Corridor). A 24-hour traffic count was conducted in Type A, and a 16-hour traffic count was conducted in Type B.

Table 2.6 List of the Traffic Count Survey Stations

	ID	Road	Date
	DTA01	Enterprise road	Wednesday 11th October 2023
	DTA02	Jogoo road	Wednesday 11th October 2023
	DTA03	Nairobi Expy & Mombasa road	Tuesday 21st December 2023
	DTA04	Meru - Nairobi Hwy	Wednesday 11th October 2023
Traffic	DTA05	Nairobi Expy & Waiyaki way	Tuesday 24th October 2023
Count	DTA06	Naivasha road	Thursday 12th October 2023
Type A	DTA07	Kiambu road	Wednesday 11th October 2023
	DTA08	Ngong road	Tuesday 24th October 2023
	DTA09	Southern bypass	Wednesday 11th October 2023
	DTA10	Kangundo road	Tuesday 24th October 2023
	DTA11	Juja road	Wednesday 11th October 2023
	DTB01	Kenyatta Avenue near Serena	Tuesday 14 th January 2025
	DTB02	Langata Road at Carnivore	Tuesday 14 th January 2025
	DTB03	Ring Road Kileleshwa	Tuesday 14 th January 2025
	DTB04	Argwings Khodek near Chaka Road	Tuesday 14 th January 2025
	DTB05	Ring Road near Kibera	Tuesday 14 th January 2025
	DTB06	James Gichuru Road near Lavington Mall	Tuesday 14 th January 2025
Traffic	DTB07	Gitanga Road near Bora Bora Hotel	Tuesday 14 th January 2025
Count	DTB08	Naivasha Road	Tuesday 14 th January 2025
Type B	DTB09	Langata Road near Hill Crest	Tuesday 14 th January 2025
	DTB10	Kikuyu Road	Tuesday 14 th January 2025
	DTB11	Kikuyu Road near Ndeiya Thogoto	Tuesday 14 th January 2025
	DTB12	Dagoretti Road near The Hub Karen	Tuesday 14 th January 2025
	DTB13	Naivasha Road on your way to Uthiru	Tuesday 14 th January 2025
	DTB14	James Gichuru Road	Tuesday 14 th January 2025
	DTB15	Olenguruone Road near Gatundu Heights	Thursday 16th January 2025

Source: JICA Expert Team



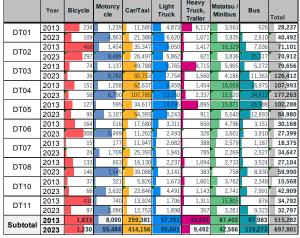
Source: JICA Expert Team

Figure 2.7 Location of the Traffic Count Survey Stations

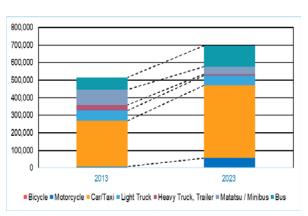
2.4.3 Survey Result

The results of the traffic count survey are compiled in the project output database. Table 2.3 and Figure 2.3 highlight the change of the traffic volume on (some of) the traffic count survey station type A. For the vehicle composition in terms of PCU, car / taxi is the dominant mode, followed by light Bus. On the other hand, motorcycle shows rapid growth rate from 8,090 pcu to 55,484. The traffic volume by heavy truck / trailer has been decreased due to the development of southern bypass, alternative freight traffic corridor.

Table 2.7 Change of Traffic Volume on the Traffic Count Survey Station Type A between 2013 to 2023



Unit: Passenger Car Unit Base



Source: JICA Expert Team

Figure 2.8 Change of Traffic Volume on the Traffic Count Survey Station Type A between 2013 to 2023

2.5 Person Trip Survey

2.5.1 Survey Objectives

The Person-Trip Survey, or Household Interview Survey (HIS) is the most essential part of the traffic survey which relates to transportation planning. This survey aims to acquire information to understand better the socio-economic conditions and travel characteristics, the so-called person trip, of residents in a survey area. The collected person trip data will become the basis of the origin–destination (OD) matrices, which show the number of people moving from one zone to another. Future traffic volumes will be forecast, together with comparisons between current personal socio-economic conditions and future growth of /development scenario in the survey area. Opinion questions are included in the HIS questionnaire to capture the public's take on current transportation issues to aid policy making.

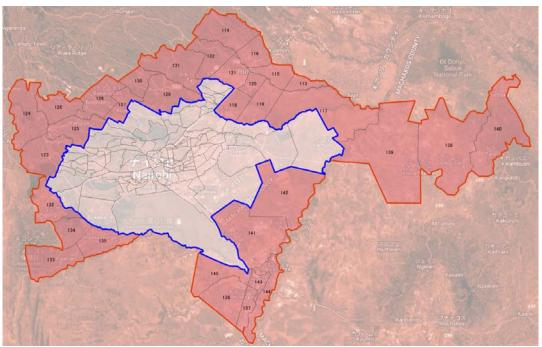
All the data collected in the Person-Trip Survey is processed and used to update the transportation database developed in this project.

2.5.2 Survey Coverage

The Person-Trip Survey is an interview survey by surveyors who visit a household. In each household, surveyors interview a household head and every household member who is 5 years old and above based on prepared survey forms, which ask about personal socioeconomic conditions, travel characteristics, and opinions on transportation.

The target households of the person trip will be randomly selected from the survey area at

a sample rate of 1.0%. NIUPLAN (2014) conducted the Household Interview Survey on the households live in Nairobi City boundary. In this Project, the Study Area for demand forecasting will be expanded to include the substantial Metropolitan Area. The study area for HIS is shown as red hatch area in Figure 1 and the sample size for the survey is 5,602 households which are statistically distributed within the study area.



Source: JICA Expert Team

Figure 2.9 Survey Area for the HIS

Table 2.8 Estimated Sample HHs to be Collected

County	#	Name (NIUPLAN)	Area	SA	WorldPop_	2019_Adjust	HHs	Sample
Kiambu	113	Ruiru1 (Theta / Mugutha) -1	1,120	1	3,089	3,852	1,300	13
Kiambu	114	Ruiru1 (Theta / Mugutha) -2	4,162	1	7,562	9,429	3,200	32
Kiambu	115	Ruiru1 (Theta / Mugutha) -3	1,762	1	15,809	19,714	6,800	
Kiambu	116	Ruiru1 (Theta / Mugutha) -4	1,982	1	19,698	24,562	8,500	85
Kiambu	117	Ruiru2 (Gikumari / Githurai / Kahawa Sukari) -1	8,705	1	5,060	6,309	2,200	22
Kiambu	118	Ruiru2 (Gikumari / Githurai / Kahawa Sukari) -2	1,868	1	159,257	198,585	69,500	695
Kiambu	119	Ruiru2 (Gikumari / Githurai / Kahawa Sukari) -3	2,766	1	11,339	14,139	4,900	49
Kiambu	120	Ruiru2 (Gikumari / Githurai / Kahawa Sukari) -4	1,008	1	5,762	7,185	2,500	25
Kiambu	121	Ruiru3 (Old Ruiru) - 1	2,014	1	66,841	83,348	29,100	291
Kiambu	122	Ruiru3 (Old Ruiru) - 2	2,774	1	5,309	6,621	2,300	23
Kiambu	123	Karail (Old Karai, Gikambura) / Kikuyu / Kinool (Gitiba, Thogoto, Old Kinoo) -1	4,086	1	79,538	99,180	32,300	323
Kiambu	124	Karail (Old Karai, Gikambura) / Kikuyu / Kinool (Gitiba, Thogoto, Old Kinoo) -2	4,751	1	38,447	47,941	15,600	156
Kiambu	125	Kinoo2 (Only Uthiru) / Muguga / Nyathuna / Kabete -1	2,885	1	108,527	135,327	45,300	453
Kiambu	126	Kinoo2 (Only Uthiru) / Muguga / Nyathuna / Kabete -2	2,464	1	47,720	59,504	19,900	199
Kiambu	127	Kihara / Kiambaa / Ruaka / Waguthu1 (Only Gathanga) -1	1,705	1	81,430	101,539	34,500	345
Kiambu	128	Kihara / Kiambaa / Ruaka / Waguthu1 (Only Gathanga) -2	3,113	1	72,870	90,865	30,900	309
Kiambu	129	Waguthu2 (Kanunga, Ngegu) / Kiambaa S/A (Kiambu Town, Kiambi, Thindigua) / Ndumberi / Riabai -	3,716	1	67,683	84,397	27,600	276
Kiambu	130	Waguthu2 (Kanunga, Ngegu) / Kiambaa S/A (Kiambu Town, Kiambi, Thindigua) / Ndumberi / Riabai -:	1,597	1	31,077	38,751	12,700	127
Kiambu	131	Kamiti / Ting'ang'a	4,689	1	24,676	30,770	10,000	100
Kajiado	132	Ngong1 (Only Ngong Township) / Oloolua (Bulbul, Kerarapon, Oloolua)	2,920	1	76,560	85,293	28,400	284
Kajiado	133	Kiserian2 (Upper Matasia) / Lemelepo / Nkaimurunya (Empakasi, Kandis) / Olkeri / Ongata Rongai - 1	3,757	1	47,270	52,663	12,500	125
Kajiado	134	Kiserian2 (Upper Matasia) / Lemelepo / Nkaimurunya (Empakasi, Kandis) / Olkeri / Ongata Rongai - 2	2,084	1	25,039	27,895	9,200	92
Kajiado	135	Kiserian2 (Upper Matasia) / Lemelepo / Nkaimurunya (Empakasi, Kandis) / Olkeri / Ongata Rongai - 3	2,867	1	149,495	166,548	55,500	555
Kajiado	136	Kitengela / Oloosirkon / Olturoto (Only Kisaju) -1	3,704	1	44,737	49,840	12,400	124
Kajiado	137	Kitengela / Oloosirkon / Olturoto (Only Kisaju) -2	1,260	1	25,890	28,844	7,200	72
Machakos	138	Nguluni / Koma rock2 (koma, Mungengesya, Matuu) / Kalandini -1	10,731	1	30,873	32,056	8,900	89
Machakos	139	Nguluni / Koma rock2 (koma, Mungengesya, Matuu) / Kalandini -2	13,914	1	9,466	9,829	2,700	27
Machakos	140	Tala / Matungulu	7,654	1	60,551	62,870	17,400	174
Machakos	141	Katani - 1	8,087	1	60,961	63,296	21,800	218
Machakos	142	Katani -2	7,931	1	12,742	13,230	4,500	45
Machakos	143	Athi River (North, Township) -1	835	1	30,644	31,818	10,900	109
Machakos	144	Athi River (North, Township) -2	2,595	1	23,578	24,481	8,400	84
Machakos	145	Athi River (North, Township) -3	3,208	1	3,871	4,019	1,300	13
		Total						5,602

2.5.3 Survey Result

The result of the Person-Trip Survey is compiled in the project output database. Eventually, the result is combined with the Person-Trip Survey which was conducted by NIUPLN Study (2013). The expansion factor, population by zone and attribute per samples are modified by the latest (2023) socio-economic framework estimated by the JICA Expert Team. As an example of the analysis, modal share of NMA is estimated. Walking trips (37.2 %) and the road based public modes (41.2%) are still dominant travel modes. On the other hand, for the people that the private car is available, more than 80 % of the trips are by the car, implying that very strong dependence on their own private modes. With the progress of the motorization, modal shift to the private modes is expected.

Table 2.9 Estimated Modal Share in NMA, 2023

	Car Availa	able Person	Non-Car A		Total				
	No (000)	Share (%)	No (000)	Share (%)	No (000)	Share (%)			
Walk	128	8.3%	4,771	41.0%	4,899	37.2%			
Bicycle	0	0.0%	29	0.3%	29	0.2%			
Motorcycle	38	2.5%	968	8.3%	1,005	7.6%			
Car/Taxi/Truck	1,244	80.8%	501	4.3%	1,745	13.2%			
Matatu	100	6.5%	4,137	35.6%	4,237	32.2%			
Bus	24	1.6%	1,156	9.9%	1,180	9.0%			
Commuter Rail	0	0.0%	20	0.2%	20	0.2%			
Others	5	0.3%	52	0.5%	58	0.4%			
Total	1,540	100%	11,635	100%	13,175	100%			

Source: JICA Expert Team

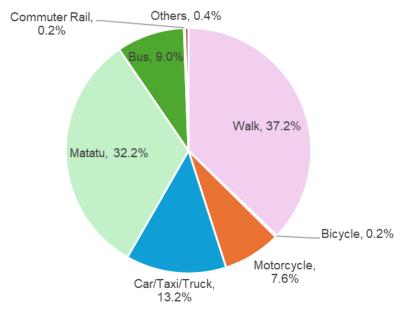


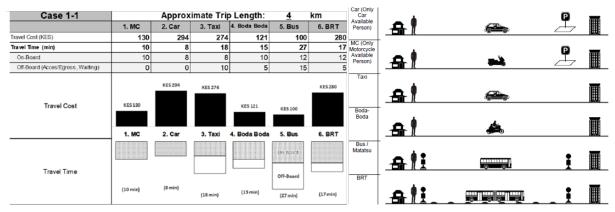
Figure 2.10 Estimated Modal Share in NMA, 2023

2.6 Stated Preference Survey

2.6.1 Survey Objectives

Stated Preference (SP) methods are widely used in travel behavior research and practice to identify behavioral responses to choice situations which are not revealed in the city. This survey is conducted to update the mode-choice modelling, with Bus Rapid Transit (BRT) which is planned to be developed in Nairobi Metropolitan Area (NMA).

Figure 2.11 shows the example of the SP questions on the mode choice with BRT. For the specific trip patterns from the origin to the destination by purpose, travel time (on-board and off-board) and travel cost are proposed and the mode choice preference are asked. As the characteristics of the SP method, options that don't exist in reality can be included. On the other hand, it is somewhat difficult for the samples to answer the preference to be selected in the actual behavior and survey shall be designed carefully.



Source: JICA Expert Team

Figure 2.11 Example of Stated Preference Question on the Mode Choice with BRT

2.6.2 Survey Coverage

The target number of sample household is 1,500 and its breakdown is shown in XXXX The survey is composed of (i) Household Interview Survey, (ii) Survey on Workers in Office Building, (iii) Survey for Students of Universities.

2.6.3 Survey Result

The result of the Person-Trip Survey is compiled in the project output database. Table 2.10 summarizes the distribution of the mode choice preferences by the proposed case and trip purpose. Based on the result, the modal split model is updated (see Chapter 5).

Table 2.10 Distribution of the Mode Choice Preference in SP Questions

		iable !	<u> </u>					นแบ								e Preierence i				Answers							
#id	Trips Refer	Code	Dista nce	T1	C1		ar C2	Та		T4	C4		us C5	Т6	C6		3. Taxi/ Ube		4. MC Taxi (Boda	5. Bus / Mata tsu	6. BRT	Answ 2. Car	3. Taxi/U ber	1. MC	4. MC Taxi (Boda Boda),	5. Bus / Matats u	6. BRT
1	To Work	C1.1_1	4	10	130	8	294	18	274	15	121	27	100	17	280	15	9	10	54	129	24	6.2%	3.7%	4.1%	22.4%	53.5%	10.0%
2	To Work	C1.1 2	. 8	27	160	32	388	42	478	33	194	63	100	29	360	7	9	11	_	120	51	2.9%	3.7%	4.6%	17.8%	49.8%	21.2%
3	To Work	C1.1_3	12	40	_	48	333	58	65 ₀	47	263	87	_	41	200	6	5	_	_	109	63	2.5%	2.1%	4.6%	19.5%	45.2%	26.1%
13	To Work	C2.2 1	12	24	130	30	294	40	362	32			_	17	280	11	5		_	149	73	3.9%	1.8%	3.6%	11.1%	53.4%	26.2%
14	To Work	C2.2_1	8	20	110	16	288	21	414	29	187		200	34	220	24	20	7	-	104	55	8.6%	7.2%	2.5%	24.7%	37.3%	19.7%
				_		_	_			_	_			_		_		_							_		
15	To Work	C2.2_3	12	30	190	24	483	29	554	40	253	56	200	46	440	21	21	9	_	149	35	7.5%	7.5%	3.2%	15.8%	53.4%	12.5%
25	To Work	C3.3_1	4	13	80	16	194	21	306	24	124	44	200	22	160	14	6	_	_	102	92	5.4%	2.3%	3.9%	13.5%	39.4%	35.5%
26	To Work	C3.3_2	8	48	110	60	288	65	590	60	_	80	_	34	220	11	8	9	_	124	89	4.2%	3.1%	3.5%	6.9%	47.9%	34.4%
27	To Work	C3.3_3	12	72	190	90	483	95	818	8 5		110	200	46	440	13	4	8	_	140	82	5.0%	1.5%	3.1%	4.6%	54.1%	31.7%
37	To Work	C4.4_1	4	10		8	144	18	274	24	121	27	100	17	120	44	18	14	_	59	92	16.8%	6.9%	5.3%	13.4%	22.5%	35.1%
38	To Work	C4.4_2	8	20	110	16	288	26	414	35	187	39	100	29	220	41	13	6	_	110	59	15.6%	5.0%	2.3%	12.6%	42.0%	22.5%
39	To Work	C4.4_3	12	40	140	48	383	58	65 0	56	_	87	100	41	280	10	15	6	_	78	122	3.8%	5.7%	2.3%	11.8%	29.8%	46.6%
49	To Work	C5.5_1	4	24	30	30	144	40	362	41	135		_	17	120	18	19	2	_	81	132	6.7%	7.1%	0.7%	5.6%	30.3%	49.4%
50	To Work	C5.5_2	8			60	288	70	59 0	66	_		_	29	220	11	12	2	_	162	73	4.1%	4.5%	0.7%	2.6%	60.7%	27.3%
51	To Work	C5.5_3	12	30	90	24	333	29	5 54	49	253	56	200	46	200	13	3	5	_	57	183	4.9%	1.1%	1.9%	2.2%	21.3%	68.5%
61	To Work	C6.6_1	4	13	130	16	294	21	306	33	124	44	200	22	280	43	18	12	_	11	30	16.5%	6.9%	4.6%	56.3%	4.2%	11.5%
62	To Work	C6.6_2	8	27	60	32	238	37	<mark>4</mark> 78	48	_	68	200	34	160	34	3	12	_	10	173	13.0%	1.1%	4.6%	11.1%	3.8%	66.3%
63	To Work	C6.6_3	12	72	90	90	333	95	818	94	295		200	46	200	15	0	_	_	17	212	5.7%	0.0%	4.2%	2.3%	6.5%	81.2%
4	To School	C1.2_1	4	24		30	294	40	362	32	_		_	17	280	1	2	0	_	84	25	0.7%	1.5%	0.0%	18.2%	61.3%	18.2%
5	To School	C1.2_2	8	20	<mark>1</mark> 10	16	288	21	414	29	187	44	200	34	220	2	6	0	_	35	41	1.5%	4.4%	0.0%	38.7%	25.5%	29.9%
6	To School	C1.2_3	12	30	190	24	4 83	29	5 54	40	253	56	200	46	440	1	13	0	_	72	25	0.7%	9.5%	0.0%	19.0%	52.6%	18.2%
16	To School	C2.3_1	4	13	80	16	194	21	306	24	124	44	200	22	160	0	8	2	_	63	59	0.0%	4.5%	1.1%	26.3%	35.2%	33.0%
17	To School	C2.3_2	8	48	_	60	288	65	59 0	60	_		200	34	220	0	5		_	87	53	0.0%	2.8%	1.1%	17.9%	48.6%	29.6%
18	To School	C2.3_3	12		190	90	<mark>4</mark> 83	95	818	<mark>8</mark> 5			200	46	440	0	9	2	33	74	61	0.0%	5.0%	1.1%	18.4%	41.3%	34.1%
28	To School	C3.4_1	4	10		8	144	18	274	24	121	_	100	17	120	3	3	0		102	50	1.8%	1.8%	0.0%	5.4%	61.1%	29.9%
29	To School	C3.4_2	8	20	<mark>1</mark> 10	16	288	26	414	35	187	39	100	29	220	3	0	0	9	120	35	1.8%	0.0%	0.0%	5.4%	71.9%	21.0%
30	To School	C3.4_3	12	40	140	48	383	58	<mark>65</mark> 0	56	263	87	100	41	280	3	2	0		109	49	1.8%	1.2%	0.0%	2.4%	65.3%	2 9.3%
40	To School	C4.5_1	4	24	30	30	144	40	362	41	135		_	17	120	1	15	1	18	30	61	0.8%	11.9%	0.8%	14.3%	23.8%	48.4%
41	To School	C4.5_2	8	48	<mark>1</mark> 10	60	288	70	590	66	_			29	220	0	9	1	7	41	68	0.0%	7.1%	0.8%	5.6%	32.5%	54.0%
42	To School	C4.5_3	12			24	333	29	554	49			200	46	200	3	23	1	13	30	56	2.4%	18.3%	0.8%	10.3%		44.4%
52	To School	C5.6_1	4	13	130	16	294	21	306	33	124	44	200	22	280	0	20	0		55	40	0.0%	11.6%	0.0%	33.1%	32.0%	23.3%
53	To School	C5.6_2	8	27	60	32	238	37	478	48	_	68	200	34	160	0	8	0	_	33	116	0.0%	4.7%	0.0%	8.7%	19.2%	67.4%
54	To School	C5.6_3	12	72	90	90	333	95	818	94	295	110	200	46	200	0	4	0	_	24	135	0.0%	2.3%	0.0%	5.2%	14.0%	78.5%
64	To School	C6.1_1	4	_		8	294	18	274	15	_	27	100	17	280	3	1	1	42	68	5	2.5%	0.8%	0.8%	35.0%	56.7%	4.2%
65	To School	C6.1_2	8	_	160	32	388	42	478	33	_		100	29	360	4	0	1	37	65	13	3.3%	0.0%	0.8%	30.8%		10.8%
66	To School	C6.1_3	12	40	90	48	333	58	<mark>65</mark> 0	47	263	87	100	41	200	2	0	1	6	67	44	1.7%	0.0%	0.8%	5.0%	55.8%	36.7%
7	Private	C1.3_1	4	13		16	194	21	306	24	124	44	200	22	160	12	13	9	_	104	63	3.7%	4.0%	2.8%	38.0%	32.1%	19.4%
8	Private	C1.3_2	8	48	110	60	288	65	590	60	_	80	200	34	220	4	10	8		123	129	1.2%	3.1%	2.5%	15.4%	38.0%	39.8%
9	Private	C1.3_3	12	72	190	90	483	95	818	8 5		110	200	46	440	3	13	9		173	60	0.9%	4.0%	2.8%	20.4%	53.4%	18.5%
19	Private	C2.4_1	4	10	_	8 16	144	18	274	24	121	27	100	17	120	18	7	7	_	138	118	5.7%	2.2%	2.2%	8.3%	43.9%	37.6%
20	Private	C2.4_2	8	20	110		288	26	414	35		39	100	29	220	15 5	13 9	-	34	205	46	4.8%	4.1%	0.3%	10.8%	65.3%	14.6%
21 31	Private	C2.4_3	12	40	140 30	48	383 144	58	650 362	56 41	263 135	87	100	41	280		-	4	17	199 154	80 129	1.6% 2.9%	2.9%	1.3% 2.0%	5.4% 1.3%	63.4% 50.2%	25.5% 42.0%
32	Private Private	C3.5_1 C3.5_2	8	48	110	30 60	288	40 70	590	66	_	45 75	_	17 29	120 220	9 5	5 7	6	5	197	89	1.6%	1.6% 2.3%	1.3%	1.6%	64.2%	29.0%
33	Private	C3.5_2	12	30	90	24	333	29	554	49	_	56	_	46	200	7	14	4	-	74	205	2.3%	4.6%	1.3%	1.0%	24.1%	66.8%
43	Private	C4.6 1	12	13	130	16	294	21	306	33		44	200	22	280	34	27	14	_	55	81	8.9%	7.0%	3.7%	44.9%	14.4%	21.1%
44	Private	C4.6_2	8	_	60	32	238	37	478	48	_	68	200	34	160	18	11	15	_	46	246	4.7%	2.9%	3.9%	12.3%	12.0%	64.2%
45	Private	C4.6_3	12		90	90	333	95	818	94	295		200	46	200	9	10			47	273	2.3%	2.6%	3.7%	7.8%	12.3%	71.3%
55	Private	C4.6_3 C5.1_1	4		130	_	294		274	15			_	17	280	13	13	_		186	46		4.1%	1.3%	17.1%	58.9%	14.6%
56	Private	C5.1_1	8	_		32			478	33	_		_	29	360	7	11	4	_	182	63		3.5%	1.3%	15.5%	57.6%	19.9%
57	Private	C5.1_3	12	_	_	48		58	65 ₀	47	_			41	_	7	7		_	171	108		2.2%	1.3%	6.0%		34.2%
67	Private	C6.2_1	4	24	130	30	294	40	362	32	_		_	17	280	8	4	8	_	174	50	2.4%	1.2%	2.4%	26.3%	52.6%	15.1%
68	Private	C6.2_2	8	20		16	288	21	414	29				34	220	15	12	8		40	44	4.5%	3.6%	2.4%	64.0%		13.3%
69	Private	C6.2_3	12	_	_	24	483		554	40	_			46	_	13	13	_	_	231	38	3.9%	3.9%	2.1%	8.8%		11.5%
10	Business	C1.4_1	4	_		8	_		274	24	_		_	17		4	0	0	-	14	10	_	0.0%	0.0%	20.0%	40.0%	28.6%
11	Business	C1.4_2	8			_	_		414	35				29	220	3	3		_	22	3		8.6%	0.0%	11.4%		8.6%
12	Business	C1.4_3	12	40		48	383	58	650	56	_			41	280	1	0	1	1	24	8	2.9%	0.0%	2.9%	2.9%	68.6%	22.9%
22	Business	C2.5_1	4	24		30	144	40	362	41			_	17	120	6	1	1	6	15	21	12.0%	2.0%	2.0%	12.0%	30.0%	42.0%
23	Business	C2.5_2	8			60	288	70	590	66				29	220	6	2	0	_	19	18		4.0%	0.0%	10.0%		36.0%
24	Business	C2.5_3	12			24	333	29	554	49				46	200	4	2	_	6	12	25	_	4.0%	2.0%	12.0%		50.0%
34	Business	C3.6_1	4			16	294		306	33				22	280	4	4	3		29	16		5.7%	4.3%	20.0%	41.4%	22.9%
35	Business	C3.6_2	8		60	32	238	37	478	48	_			34	160	4	3	3		18	42	5.7%	4.3%	4.3%	0.0%		60.0%
36	Business	C3.6_3	12	72	90	90	333	95	818	94	295		200	46	200	2	2	4	4	5	53	2.9%	2.9%	5.7%	5.7%	7.1%	75.7%
46	Business	C4.1_1	4	10	_	8	294	18	274	15			100	17	280	14	8	2	15	16	7	2 2.6%	12.9%	3.2%	24.2%		11.3%
47	Business	C4.1_2	8		160	32	388	42	478	33	_			29	360	7	6	2		13	16	11.3%	9.7%	3.2%	29.0%		25.8%
48	Business	C4.1_3	12	_	90	48	333	58	65 0	47	263	87		41	200	5	7	2	2	8	38	8.1%	11.3%	3.2%	3.2%		61.3%
58	Business	C5.2_1	4	24	130	30	294	40	362	32	135	45	100	17	280	3	0	2	3	10	4	13.6%	0.0%	9.1%	13.6%	45.5%	18.2%
59	Business	C5.2_2	8	20	110	16	288	21	414	29	187	44	200	34	220	5	0	1	3	5	8	22.7%	0.0%	4.5%	13.6%	22.7%	36.4%
60	Business	C5.2_3	12	30	190	24	4 83	29	5 54	40	253	56	200	46	440	6	0	1	2	9	4	2 7.3%	0.0%	4.5%	9.1%	40.9%	18.2%
70	Business	C6.3_1	4	13	80	16	194	21	306	24	124	44	200	22	160	13	5	6	19	5	19	19.4%	7.5%	9.0%	28.4%	7.5%	28.4%
71	Business	C6.3_2	8	48	<mark>1</mark> 10	60	288	65	59 0	60	215	80	200	34	220	5	1	6	4	6	45	7.5%	1.5%	9.0%	6.0%	9.0%	67.2%
72	Business	C6.3_3	12	72	190	90	4 83	95	818	<mark>8</mark> 5	295	110	200	46	440	1	0	5	2	24	35	1.5%	0.0%	7.5%	3.0%	35.8%	52.2%
C		Cura and T																									

3. TRAFFIC DEMAND ANALYSIS ON BASELINE OD MATRIX

3.1 Estimation Methods of the 2023 Baseline OD Matrix

3.1.1 Sampling Rate of Person-Trip Survey

To set the sampling rate of the HIS to develop OD table, the following formula is applied to ensure statistical accuracy;

$$RE = k \sqrt{\frac{1-r}{r} * \frac{C-1}{N}}$$

RE: Relative Errors (Benchmark: Less than 20%),

r: sampling rate

k: Confidence coefficient (1.96 at 95% confidence level, 1.65 for 90 %)

N: Statistical Population (total number of trips)

C : Categories. Number of Zones or effective OD pairs * Trip purpose categories * Travel mode categories

Assuming the sampling rates for the Study Area satisfy the required conditions for the generated concentrated traffic and the OD table.

- (i) Total Number of Trips: 6.0 million × 2.2 trips/day = 13.2 million
- (ii) The number of traffic zones: 145 zones
- (iii) 24.2 % of OD pairs are assumed to be effective.
- (iv) Trip Purpose:5 (To Home, To Work, To School, For Business, Others)
- (v) Travel Modes: 2 (Private and Public)
- (vi) Sampling rate = 1.0 %

The relative errors of the trip generation and attraction can be estimated as follows:

$$k\sqrt{\frac{1-r}{r}*\frac{C-1}{N}} = 1.65\sqrt{\frac{0.99}{0.01}*\frac{(145*5*2)-1}{13.2 \ million}} = 20.43 \%$$

The relative errors of the OD pairs can be estimated as follows:

$$k\sqrt{\frac{1-r}{r}*\frac{C-1}{N}} = 1.65\sqrt{\frac{0.99}{0.01}*\frac{(145^2*5*2*24.2\%)-1}{13.2 \ million}} = 121.1\%$$

The results ensured a certain degree of accuracy for trip generation and attraction, but not

for OD pairs. And Table 3.1 summarizes the required sampling rate to ensure the statistical accuracy. For the trip generation and attraction, 1 % of the sampling rate seems to be fine. On the other hand, it is difficult to ensure the accuracy of the OD pairs. To ensure the OD pairs with 145 traffic zones, the sampling rate must be increased into 24.3 % and it's not a realistic solution.

Table 3.1 Required Sampling Rate to ensure the 20 % of Relative Error

	Confider coefficie		The number of Zones								
	Confidence Level	k	50	75	100	135	150	200	300	500	
Teim	80%	1.28	0.15%	0.23%	0.31%	0.42%	0.46%	0.62%	0.92%	1.53%	
Trip Generation	90%	1.65	0.26%	0.38%	0.51%	0.69%	0.77%	1.02%	1.52%	2.51%	
/ Attraction	95%	1.96	0.36%	0.54%	0.72%	0.97%	1.08%	1.43%	2.14%	3.51%	
/ Attraction	99%	2.58	0.63%	0.94%	1.24%	1.67%	1.85%	2.46%	3.64%	5.93%	
	80%	1.28	1.84%	4.05%	6.98%	12.0%	14.5%	23.1%	40.3%	65.2%	
OD Pair	90%	1.65	3.02%	6.56%	11.1%	18.5%	21.9%	33.3%	52.9%	75.7%	
OD Pall	95%	1.96	4.22%	9.01%	15.0%	24.3%	28.4%	41.3%	61.3%	81.5%	
	99%	2.58	7.09%	14.6%	23.4%	35.7%	40.7%	55.0%	73.3%	88.4%	

¹⁾ Assumption: 5 Trip Purposes and 2 travel modes, 24.2~% of the OD pair have the trip information Source: JICA Expert Team

3.1.2 Calibration by Screen Line

To adjust the number of trips which was expanded from the Person Trip survey with 1% of sampling rate, the screen adjustment factor is applied to all trips. The adjustment factor by screen line is:

Traffic volume crossing the screenline
Unlinked Trips from HIS that cross the screenline

Unlinked trip is, the part of the whole trip from Origin to Destination, including walking trip from the home to the bus stop, bus ride trip between bus stops, and Boda-Boad ride trip from bus stops to the office. Trips to/from the Cordon Line are already fixed, and the traffic volumes passing through the screen line from the OD table obtained from the Cordon Line Survey are excluded.



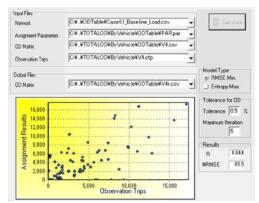
Source: JICA Expert Team

Figure 3.1 Conceptual Image of the Screen Line Calibration

3.1.3 Calibration by Traffic Count

In addition to the screen line calibration, OD table is calibrated to build one that is consistent with the results of a traffic count survey conducted on a selected number of links in the network. The calibration is conducted by the OD Calibrator, one of the software of JICA STRADA.

An exported OD table is compared with the original OD table. If there's the huge gap between these two OD tables on the trip generation and attraction, the exported OD table is modified.



Source: JICA Expert Team, worked by JICA STRADA OD Calibrator

Figure 3.2 OD Calibration with the Result of Traffic Count Survey

3.2 Outline of the 2023 Baseline OD Matrix

3.2.1 Trip Demand

Table 3.2 summarizes the trip demand in NMA by the motorized vehicles. For the traffic assignment, only the inter-zonal trips are reflected and the intra-zonal trips are not. The majority of the motorcycle trips are intra-zonal and the impact on the urban transport network is smaller than other modes.

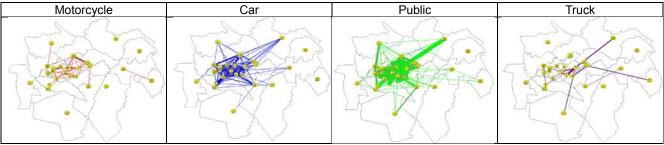
Table 3.2 Estimated Trip Demand of the 2023 Baseline OD Matrix

	Tricycle	MC	Car	Matatu	Public	Truck	Trailer	Total
Inter-zonal Trips	62,744	342,198	1,659,267	3,714,932	979,436	116,386	19,379	6,894,342
Total Trips	151,899	859,871	1,759,988	4,568,658	1,311,169	181,112	19,600	8,852,297

1)Unit: Passenger trips Source: JICA Expert Team

3.2.2 Trip Patterns

Figure 3.3 visualizes the desire line of the trip demand between the groups of traffic zones. It indicates that commuting range has been expanded from the Nairobi City boundary to the sub-centres in the adjoining counties.



1) 1 dot = 5,000 person trips

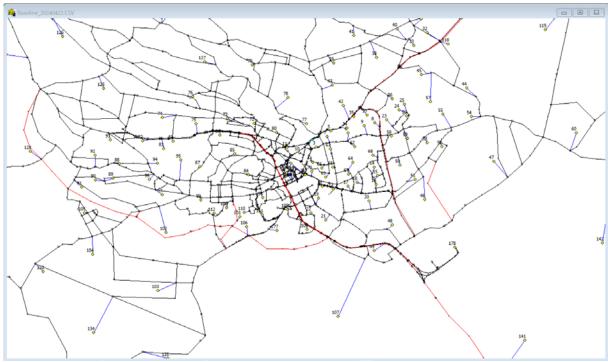
Source: JICA Expert Team, worked by JICA STRADA Matrix Manipulator

Figure 3.3 Desire Lines of the Trip Demand in 2023 by Travel Mode

3.3 Traffic Assignment

3.3.1 Baseline Network Preparation

Baseline (2023) network in NMA is based on the transport network developed in NIUPLAN (2013) study. The road projects which had been developed since 2013, including Nairobi Expressway, Southern Bypass and Outer Ring Road are reflected (Figure 3.4).



Source: JICA Expert Team, worked by JICA STRADA Network Editor

Figure 3.4 Baseline (2023) Network in NMA

3.3.2 Traffic Assignment Result

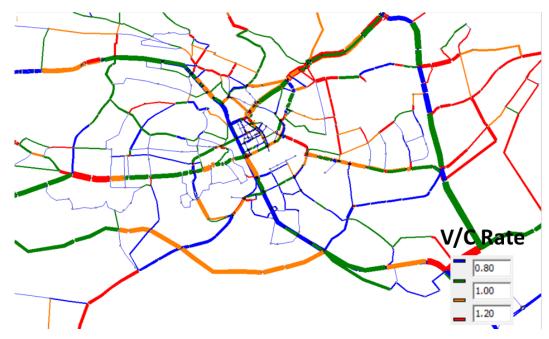
The primary performance indicators by traffic analysis for the baseline network (2023) with NIUPLAN case (2013) are summarized in Table 3.3. Traffic assignment result is shown in Figure 3.5. Traffic volume in terms of passenger-car-unit-kilometer and average volume / capacity ratio has been increased from 2013.

Table 3.3 Overall Network Performance in NMA, 2013 and 2023

		2013 (N	UPLAN)	2023		
	Nairobi City	NMA	Nairobi City	NMA		
Traffic Volume	000 PCU-km	10,960	17,780	16,280	27,978	
Average Volume / Capac	Average Volume / Capacity Ratio (V/C)			0.82	0.72	
Average Travel Speed	Average	40.0	40.0	21.2	24.9	
(km/h)*	Peak	27.5	29.7	8.3	10.6	

1) $[BPR\ Function(\ Time]\ _V = [Time]\ _(free-flow)\ (1+\alpha\ [V/C]\ ^{\beta}))$. In NEWPLAN, α =0.48, β =2.82 are applied. In this Study, α =2.0, β =3.0 are applied

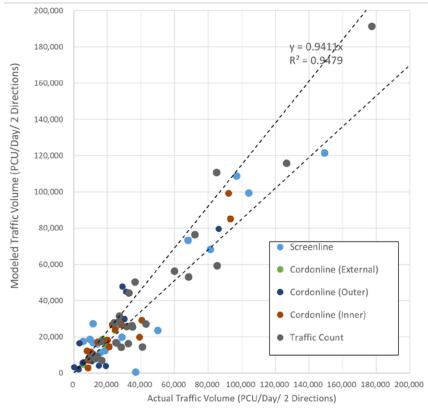
Source: JICA Expert Team, worked by JICA STRADA Highway Reporter



Source: JICA Expert Team, worked by JICA STRADA Highway Reporter

Figure 3.5 Baseline (2023) Traffic Assignment Result

Comparison with present estimate and traffic count surveys conducted in this Project is shown in Figure 3.6. The r-squared by PCU is 0.948 in this correlation.



Source: JICA Expert Team, worked by JICA STRADA Highway Reporter

Figure 3.6 Comparison with Modeled and Actual Traffic Volume on the Road Sections

3.3.3 Network Setting

The Bureau of Public Roads (BPR) Function, which is widely used in road traffic demand forecasting and traffic simulation, is a speed-flow function expresses the relationship between the traffic volume and the travel time on a road link. The travel time associated with the traffic volume is as follows:

$$T = T_0 \left(1 + \alpha \frac{V^{\beta}}{C} \right)$$

T: Travel Time under the traffic volume

T0: Travel Time under the free-flow

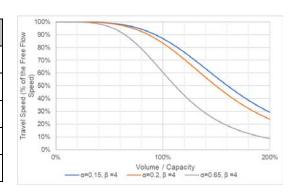
V/C: Volume per Capacity on a road link

α,β: Parameter

 α and β means how sensitive travel time is to congestion and how sharply travel time increases near or over capacity, respectively. The values applied by the National Cooperative Highway Research Program (NCHRP) are as shown in Figure 3.5.

The lower value of α is applied for the standard road and higher value is applied for the minor or local roads, to prevent concentration of the traffic on the minor roads.

Facility Type	α	β
Urban freeway	0.15	4
Rural freeway	0.15	4
Urban arterial	0.2	4
Rural arterial	0.2	4
Local streets	0.65	4



Source: National Cooperative Highway Research Program (NCHRP), Report 716 (2012), *Travel Demand Forecasting Parameters and Techniques*. Transportation Research Board.

Figure 3.7 Example of BPR Function

In the NIUPLAN study (2013), the α =0.48, β =2.82 are applied and they are the default value of the JICA STRADA. If the traffic volume exceeds the capacity (V/C > 1), the travel time is,

$$T = T_0 \left(1 + \alpha \frac{v^{\beta}}{c} \right) = T_0 (1 + 0.48 \times 1^{2.82}) = 1.48T_0$$

If the travel speed in the free–flow is 50 kph, the travel speed is 50 / 1.48 = 33.8 kph. As shown in Table 3.3, the travel speed of Nairobi City and NMA is 27.5 kph and 29.7 kph, respectively. However, the result does not seem to reflect the actual traffic conditions of the city completely.

One of the characteristics of the traffic conditions in Nairobi City is, the uncertainty of the travel time from the origin to the destination, which is mainly due to the terrible manual operation by the traffic police at the major intersections. The Route-search function by Google Map, which estimates the travel time between the origin to the destination based on the accumulated travel histories by the users, shows a large fluctuation (see Figure 3.8). It's usual to take 30 minutes, 1 hour or longer to travel just 10 km.

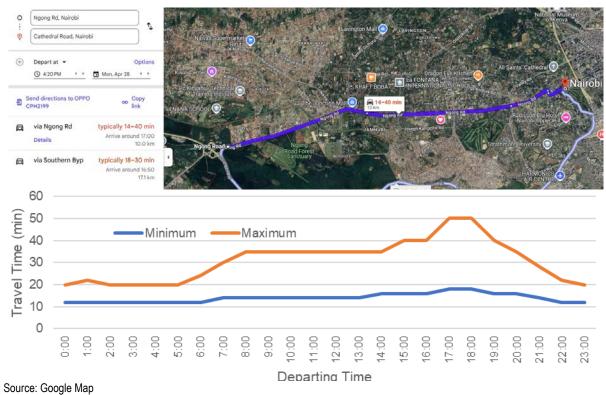


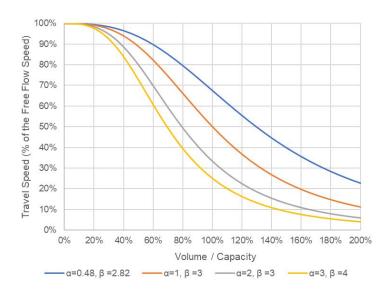
Figure 3.8 Route-search for Travels in Nairobi by Google Map

The Parameters of BPR Function are tested and the network performance are compared as shown in Table 3.3. If the same values with NIUPLAN Study (2013) are applied, the average travel speed is 24.5 kph, showing huge gap with the local perspective.

Table 3.4 Overall Network Performance in NMA by BPR Function Parameter

BPR Parameter Case	α	0.48	1.00	2.00	3.00
BPR Parameter Case	β	2.82	3.00	3.00	3.00
Traffic Volume	000 PCU-km	27,233	27612	27,978	28,280
Average Volume /	Capacity Ratio (V/C)	0.7	0.71	0.72	0.73
Average Travel Speed	Average	37.9	31.8	24.9	20.6
(km/h)*	Peak	24.5	16.5	10.6	7.8

Source: JICA Expert Team, worked by JICA STRADA Highway Reporter



Source: JICA Expert Team

Figure 3.9 Relationship between V/C and Travel Speed by the Tested Cases of BPR Function Parameters

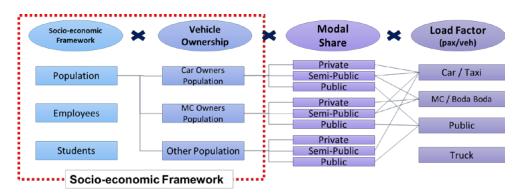
The traffic assignment network is based on the database of the NIUPLAN Study (2013), and the result shows that the traffic demand in NMA is below the capacity of the road network. To mitigate the gaps with the actual local conditions, the possible solutions are (1) revise the road capacity or (2) revise the BPR parameters. Tentatively, the JICA Expert Team decided to modify the following BPR parameters: $\alpha = 2.0$ and $\beta = 3.0$.

As mentioned previously, the serious traffic conditions in Nairobi are mainly due to manual control by the traffic police in the intersections, and it may be improved by introducing systematic traffic signal control. The parameters of the BPR function have a huge impact on the travel time, important indicators of the urban traffic analysis and should be reviewed carefully.

4. SOCIO-ECONOMIC FRAMEWORK IN NMA

4.1 Introduction

Socio-economic framework (i.e., population, number of workers and students, car ownership, etc.) is an essential variable to estimate the future travel demand of the city.



Source: JICA Expert Team

Figure 4.1 Conceptual Image of the Traffic Demand Estimation

To determine the future socio-economic framework by traffic zones, the spatial development structure of NMA is a vital factor to be considered. The elements of the spatial development structure were fundamentally considered by reviewing existing development plans.

4.2 Baseyear (2023) Socio-economic Framework in NMA

4.2.1 County Wise Information

Statistical documents, including the 2009 / 2019 Population & Housing Census and the National Statistical Yearbook, and the related information are summarized in Table 4.1

The number of registered vehicles, an indicator to estimate the number of car-available population, is available at the National Level, and estimation from the Person-Trip Survey result is difficult because the information in Nairobi City is as of the NIUPLAN Study (2013). In this Project, the vehicle ownership at the County Level is estimated from the share of the Gross County Product to the National Gross Domestic Product.

Table 4.1 Summary of County-Wise Socio-economic Information

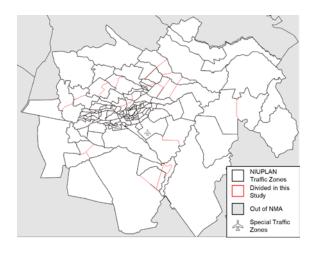
	Table 4.1	Summ	ary or	Coun	ty-vvis	e 300	10-eco	HOHIL	IIIIOII	Hatioi			
Category	Indicator	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
	Nairobi	3,591,599	3,714,786	3,842,199	3,973,981	4,110,283	4,251,260	4,397,073	4,516,000	4,594,000	4,672,000	4,750,000	
Population	Machakos	1,218,012	1,249,845	1,282,510	1,316,028	1,350,423	1,385,716	1,421,932	1,442,000	1,457,000	1,472,000	1,488,000	
(Source: 2009 /	Murang'a	986,648	997,982	1,009,447	1,021,044	1,032,774	1,044,639	1,056,640	1,077,000	1,088,000	1,100,000	1,112,000	
2019 Population &	Kiambu	1,903,706	1,981,077	2,061,592	2,145,380	2,232,573	2,323,310	2,417,735	2,501,000	2,552,000	2,602,000	2,653,000	
Housing Census)	Kajiado	834,919	876,530	920,215	966,077	1,014,225	1,064,773	1,117,840	1,179,000	1,209,000	1,238,000	1,268,000	
	Kenya	41,969,420	42,853,962	43,757,147	44,679,368	45,621,025	46,582,528	47,564,296	48,818,000	49,720,000	50,623,000	51,526,000	
	Nairobi	1,612,572	1,707,029	1,817,432	1,912,001	2,020,743	2,137,131	2,268,114	2,267,447	2,379,736	2,497,585	2,621,271	
	Machakos	218,816	226,474	238,078	241,146	246,942	261,253	264,050	265,962	272,192	278,568	285,093	
GCP / GDP	Murang'a	129,266	135,675	138,092	141,567	137,995	144,211	147,170	153,219	156,576	160,006	163,512	
Constant Prices KSh million	Kiambu	358,143	375,967	398,008	417,022	427,146	435,641	457,744	453,872	466,613	479,712	493,178	
	Kajiado	89,215	93,688	97,111	107,864	106,773	116,223	124,728	126,633	134,332	142,500	151,164	
	Kenya	6,015,951	6,301,542	6,635,134	6,926,656	7,178,460	7,580,588	7,967,464	8,001,274	8,330,758	8,673,810	9,030,989	
	Nairobi	449.0	459.5	473.0	481.1	491.6	502.7	515.8	502.1	518.0	534.6	551.8	
GCP / GDP per	Machakos	179.7	181.2	185.6	183.2	182.9	188.5	185.7	184.4	186.8	189.2	191.6	
Capita	Murang'a	131.0	135.9	136.8	138.6	133.6	138.0	139.3	142.3	143.9	145.5	147.0	
(2011 Constant	Kiambu	188.1	189.8	193.1	194.4	191.3	187.5	189.3	181.5	182.8	184.4	185.9	
Prices KSh 000)	Kajiado	106.9	106.9	105.5	111.7	105.3	109.2	111.6	107.4	111.1	115.1	119.2	
	Kenya	143.3	147.0	151.6	155.0	157.3	162.7	167.5	163.9	167.6	171.3	175.3	
	Motor Cars	709,812	779,256	847,745	906,358	973,056	1,047,855	1,130,338	1,196,054	1,268,574	1,345,491	1,427,072	
	Utilities, Panels Vans, Pick-ups, e	252,188	277,324	290,702	303,924	318,172	329,392	339,581	345,646	351,632	357,722	363,917	
	Lorries, Trucks and Heavy Vans	117,570	128,251	142,036	151,668	159,128	165,642	172,160	178,636	185,707	193,058	200,700	
	Buses and Mini-buses	95,644	98,067	100,990	103,268	104,799	106,676	112,327	114,311	116,026	117,767	119,534	
Registered Vehicles in Kenya	Motor-and-Auto cycles	738,219	853,670	993,090	1,116,629	1,308,230	1,497,224	1,714,649	1,967,250	2,258,803	2,593,565	2,977,940	
, , , , ,	Trailers	39,736	42,661	46,566	49,395	51,348	53,431	55,070	57,452	60,639	64,003	67,553	
	Other-motor vehicles	58,803	31,678	36,459	72,242	75,055	80,714	83,985	95,490	112,510	132,564	156,192	
	Total	2,011,972	2,210,907	2,457,588	2,703,484	2,989,788	3,280,934	3,608,110	3,954,839	4,353,891	4,804,169	5,312,907	
	Source:			SYB 2018				SYB	2022		Estimat		
Registered Vehicle	Motor Cars	16.9	18.2	19.4	20.3	21.3	22.5	23.8	24.5	25.5	26.6	27.7	
per 1,000 pop	Motor-and-Auto cycles	17.6	19.9	22.7	25.0	28.7	32.1	36.0	40.3	45.4	51.2	57.8	
Chara of CCB to	Nairobi	26.8%	27.1%	27.4%	27.6%	28.2%	28.2%	28.5%	28.3%	28.6%	28.8%	29.0%	
Share of GCP to GDP (souece:	Machakos	3.6%	3.6%	3.6%	3.5%	3.4%	3.4%	3.3%	3.3%	3.3%	3.2%	3.2%	
Gross County	Murang'a	2.1%	2.2%	2.1%	2.0%	1.9%	1.9%	1.8%	1.9%	1.9%	1.8%	1.8%	
Product Report • 2021)	Kiambu	6.0%	6.0%	6.0%	6.0%	6.0%	5.7%	5.7%	5.7%	5.6%	5.5%	5.5%	
	Kajiado	1.5%	1.5%	1.5%	1.6%	1.5%	1.5%	1.6%	1.6%	1.6%	1.6%	1.7%	
	Nairobi	53.0	56.8	60.4	63.0	66.6	69.5	73.2	75.1	78.9	82.9	87.2	
Estimated	Machakos	21.2		23.7	24.0			26.3	27.6		29.4	30.3	
Registered Cars	Murang'a	15.5	16.8	17.5	18.1	18.1	19.1	19.8	21.3		22.6	23.2	
per 1,000 pop	Kiambu	22.2	23.5	24.7	25.4	25.9	25.9	26.9	27.1	27.8	28.6	29.4	
	Kajiado	12.6	13.2	13.5	14.6		15.1	15.8	16.1	16.9	17.9	18.8	
	Nairobi	55.1	62.3	70.8	77.6		99.3	111.0	123.4	140.5	159.8	182.0	
Estimated	Machakos	22.0	24.5	27.8	29.5		37.2	40.0	45.3	50.7	56.6	63.2	
Registered MCs per 1,000 pop	Murang'a	16.1	18.4	20.5	22.4	24.4	27.3	30.0	35.0			48.5	
per 1,000 pop	Kiambu	23.1	25.7	28.9	31.3		37.0	40.7	44.6		55.1	61.3	
	Kajiado	13.1	14.5	15.8	18.0	19.2	21.6	24.0	26.4	30.1	34.4	39.3	

4.2.2 Spatial Distribution in NMA (the Study Area)

The spatial distribution of the socio-economic framework in NMA is estimated from Census (2019) report, the population distribution information from WorldPop 2020, and the persontrip-survey result (employment and school enrollment status at night-time and day-time).

NMA, the study area comprises of the entire area of Nairobi City and parts of the adjoining Counties. In the demand modelling, this area was divided into 135 traffic analysis zones in NIUPLAN Study (2013) and updated to 160 zones in this project by dividing the large TAZs along the BRT and other transit corridors. Meanwhile, JKIA and Willson Airport are also included as the special traffic zones. The areas beyond the study area have 16 zones.

		NIUPLAN	This Project	
	Nairobi City	106	112	
NMA	Substantial Metropolitan Area ¹⁾	14	33	
INIVIA	Outer Area	15	15	
	Subtotal	135	160	
C	Out of the NMA ²⁾	15	16	
Spe	cial Traffic Zones 3)	0	2	
	Total	150	178	



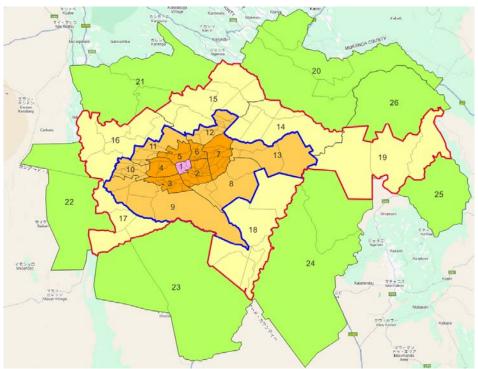
- 1) Coverage of the Person-Trip Survey
- 2) Zone #176: Other Foreign Countries (by land transport) is newly included
- 3) JKIA and Willson Airport are included

Source: JICA Expert Team

Figure 4.2 Traffic Zone System in the Model

For analysis purposes, NMA with the 160 traffic zones are divided into 26 urban clusters according to the distance from the CBD and directions as shown in **Figure 4.3**. The estimated base year (2023) socio-economic framework by the cluster is summarized in Table 4.2. The main findings are as follows:

- (i) CBD shows extremely high population density in the daytime and day-time ratio. The value (1,144 population / ha) is much higher than the CBD in Tokyo (Chiyoda-District in Tokyo, 732 population/ha).
- (ii) Day-time ratio is higher than 100 % at only CBD(#1), Inner North(#5), Suburbs-South (#9) and Far Outer-South West (#24). There is a high commuting trip demand mainly to the CBD.
- (iii) The vehicle ownership in Nairobi City is higher than in the other counties.



Source: JICA Expert Team

Figure 4.3 Proposed Urban Clusters in NMA

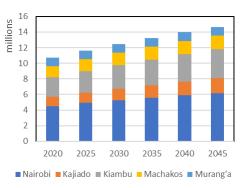
Table 4.2 Base year (2023) Socio-economic Framework in NMA

					2023														
						Population	on@Night			Workers			Students			Po	pulation@	Day	
	Proposed_Cluster		No. of TAZs	Area (ha)	(000)	Density (/ha)	Car Availabl e Pop (000)	e Rate	@Night	@Day	Day Night Ratio	•	@Day	Day Night Ratio	@Day	Density (/ha)	Day Night Ratio	Car Availabl e Pop (000)	Car Availabl e Rate
CBD	1	CBD	7	825	112							42		793%	944				
	2	South East	20	3,109	727	233.9	25.4	3.5%	266	276	104%	263	212	81%	686			29.6	
	3	South West	10	2,531	452	178.6	61.1	13.5%	186	170	91%	97	68	70%	407	161	90%	54.0	
	4	West	4	2,534	128	50.7	53.6			55		33	15	45%	110			24.8	
Inner	5	North	5	2,245	71	31.5	20.5		34	56		8	11	127%	96			21.7	
	6	North East	10	1,317	390	296.3	7.6			104		142	134	94%	342				
	7	East	14	4,537	1,181	260.3	60.4	5.1%	496	290		289	232	80%	919			28.1	3%
		Subtotal	63	16,272	2,950	181.3				952		833	671	81%	2,559				
	8	South East	4	10,253	563	54.9		7.8%	227	168	74%	169	134	79%	469			26.3	69
	9	South	5	20,662	104	5.0		40.5%		69		16	32	206%	143			33.3	
	10	West	10	2,874	429	149.1	20.8	4.8%	177	112		135	92	68%	320			12.6	
Suburbs	11	North West	7	4,909	183	37.4	47.6			66		29	18	62%	158			24.2	
	12	North East	12	4,048	257	63.6		6.7%		98	104%	116	109	94%	254			14.1	69
	13	East	4	11,957	152	12.7	12.2	8.1%		41		51	35	68%	119	9.9	78%	6.6	
		Subtotal	42	54,704	1,688	30.9	184	10.9%	683	553	81%	515	420	81%	1,463	3 27	87%	117	8%
Nairob	i City To	otal (CBD-Inner-Suburb)	112	71,801	4,750	66.2	421	8.9%	1,904	2,087	110%	1,390	1,423	102%	4,966	69.2	105%	464	9%
	14	North East (Kiambu)	6	17,229	274	15.9	22.3	8.1%	115	80	70%	79	74	94%	235	13.6	86%	13.0	5.5%
	15	North (Kiambu)	7	20,934	305	14.6	31.2	10.2%	123	97	79%	83	64	77%	260	12.4	85%	17.7	6.8%
Outer	16	North West (Kiambu)	6	19,003	586	30.9	36.1	6.2%	233	175	75%	156	122	78%	495	26.0	84%	20.1	4.19
	17	South West (Kajiado)	4	11,628	377	32.4	18.5	4.9%	137	107	78%	121	94	77%	320	27.5	85%	11.3	3.5%
(Adjoining)	18	South (Kajiado & Mahakos)	7	27,621	232	8.4	27.4	11.8%	104	99	95%	64	57	89%	220			17.7	8.0%
	19	East (Machakos)	3	32,299	110	3.4	3.3	3.0%		39		38	39	102%	108	3.3	99%	2.6	
		Subtotal	33	128,713	1,884	14.6	139	7.4%	752	597	79%	541	450	83%	1,637	13	87%		
Subst	antial M	IA Total (Nairobi-Outer)	145	200,515	6,634	33.1	560		2,656	2,684	101%	1,931	1,873	97%	6,603	32.9	100%	547	
	20	North East (Kiambu & Muranga)	4	51,232	410	8.0			165	141		112	110	98%	384			11.2	2.9%
	21	North West (Kiambu)	3	36,390	447	12.3		2.9%	180	145		122	112	92%	402			11.8	2.9%
	22	West (Kiambu & Kajiado)	2	30,554	62	2.0		2.070	24	21		18	16	92%	58			1.3	2.3%
Far Outer	23	South West (Kajiado)	2	65,778	61	0.9	1.1	1.9%	23	24		18	17	90%	60			1.1	1.9%
(Adjoining)	24	South East (Machakos)	2	69,770	46		1.4	0.0,0	20	24		15	15	99%	50			1.5	3.0%
	25	East (Machakos) 1	1	17,666	129				54	53		43	41	96%	126			3.8	3.0%
	26	East (Machakos) 2	1	24,713	55	2.2	1.7	3.0%	23	22	96%	18	17	95%	54	2.2	97%	1.6	3.0%
		Subtotal	15	296,101	1,211	4.1	35	2.9%	490	431	88%	346	328	95%	1,134	3.8	94%	32	
		NMA Total	160	496,616	7,845	15.8	594	7.6%	3,146	3,115	99%	2,278	2,201	97%	7,737	15.6	99%	579	7.5%

4.3 Future (2030/2035/2040/2045) Socio-economic Framework in NMA

4.3.1 Population Projection by the National Census (2019)

The 2019 Kenya Population and Housing Census projects the future population of the Whole Kenya and its Counties. It is expected that the population of Nairobi City and 5 counties in 2045 will be more than 6 million and 14 million, respectively.



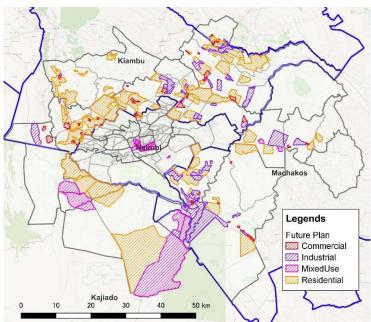
Source: 2019 Kenya Population and Housing Census

Figure 4.4 Projected Population in
the Related Counties

4.3.2 Spatial Distribution in NMA

For the zonal distribution of the population and other socio-economic indicators in NMA, Integrated Strategic Urban Development Plans (by Ministry of Transport, Infrastructure, Public Works, Housing and Urban Development) were referred and following landuse areas are extracted and the marginal population, employment and school enrollment are reflected.

- (i) Residential (mid and high-rised)
- (ii) Industry
- (iii) Mixed-use
- (iv) Commercial

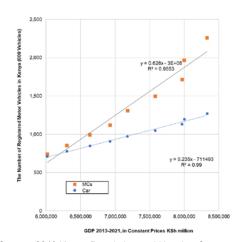


Source: Integrated Strategic Urban Development Plan(s)

Figure 4.5 Proposed Landuse in the Adjoining Counties

4.3.3 Projection of the Vehicle Ownership in NMA

For modelling purposes, the future vehicle ownership in NMA shall be developed. The regression analysis shows that there is a high correlation between the GDP and the number of registered motor vehicles (see Figure 4.6). The future GDP is estimated by multiplying the projected future population by the growth rate of the GDP per capita. The Gross County Product (GCP) by the County is, based on the current share in the statistical yearbook. Table 4.3 summarizes the projected vehicle ownership by county. The growth rate of ownership is higher in the adjoining counties



Source: 2019 Kenya Population and Housing Census
Figure 4.6 Relationship
between GDP and The Number of
Registered Vehicles

than in Nairobi City. The zonal distribution is based on the base year (2023) vehicle ownership collected from the Person-Trip Survey.

Table 4.3 Projections of the Vehicle Ownership in NMA

Category	Counties	2023	2030	2035	2040	2045
Estimated.	Nairobi	87.2	102.1	123.3	132.8	143.3
Estimated	Machakos	30.3	40.2	54.1	65.8	80.0
Registered	Murang'a	23.2	33.2	45.8	56.8	70.0
Cars per	Kiambu	29.4	36.6	47.2	55.2	64.5
1,000 pop	Kajiado	18.8	22.9	29.1	33.5	38.8
Cotinented	Nairobi	182.0	206.0	268.1	299.0	331.7
Estimated	Machakos	63.2	81.0	117.6	148.1	185.1
Registered Motorcycles per 1,000 pop	Murang'a	48.5	66.9	99.6	127.8	162.0
	Kiambu	61.3	73.8	102.8	124.2	149.3
	Kajiado	39.3	46.1	63.2	75.5	89.8

4.3.4 Summary

Figure 4.7 shows the projected future socio-economic framework in NMA and Figure 4.8 visualizes the zonal distribution of the night-time population and day-time population. The main findings are as follows:

- (i) The total population in NMA is projected to increase and reach to 10 million in 2035.
- (ii) For night-time population, Densely populated zones are located in the city center and along western (Ngong) and north-east (Thika) axes and Outer area (adjoining counties) are less populated but expected to be grown rapidly.
- (iii) For the daytime population, the general trend is the same with the nighttime population. But the daytime population in the CBD is projected not to grow further, while growth in the outer regions is rapid.

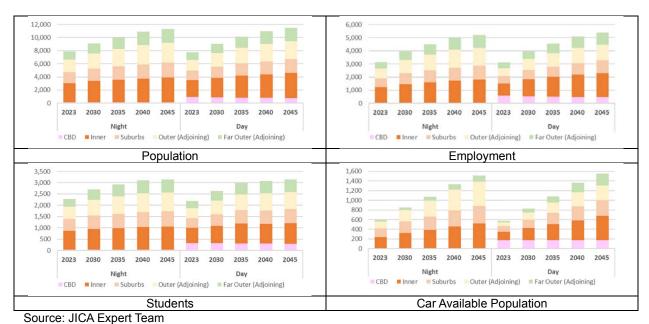


Figure 4.7 Summary of the Socio-economic Framework by the Urban Cluster Group

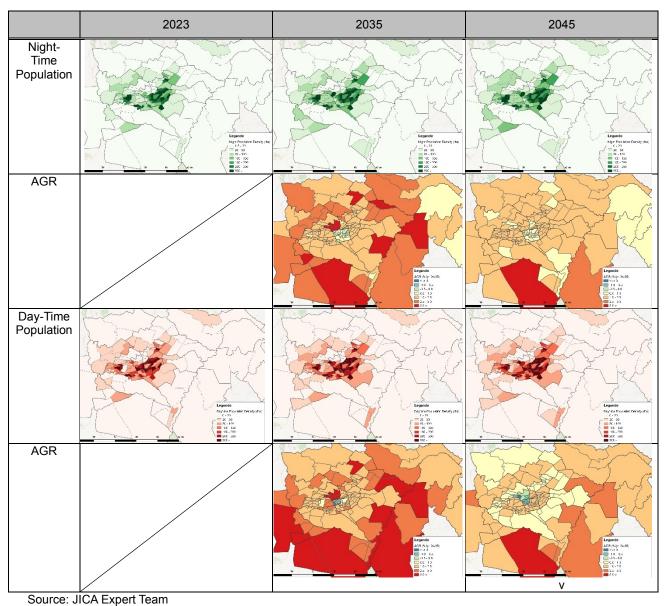
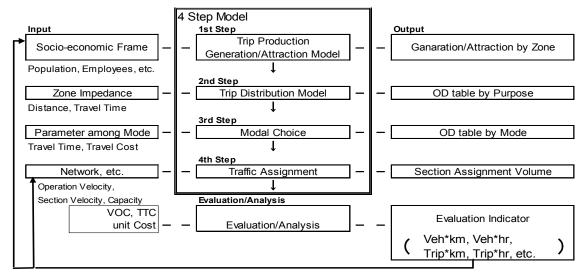


Figure 4.8 Population Distribution by Zonal Level

5. UPDATED TRANSPORT DEMAND MODEL

5.1 Introduction

Demand forecast methodology is an orthodox four-step model (see Figure 5.1). This chapter describes the outline of the transport demand models, which are updated in this Project.

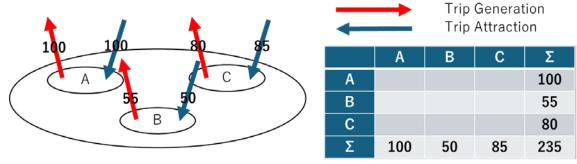


Source: JICA Expert Team

Figure 5.1 Flow Chart of 4-Step Analysis

5.2 Trip Generation and Attraction

Trip generation and attraction are handled as a part of trip production forecasting by the four-step method. The trip generation departs from each zone, and the trip attraction arrives at each zone.



Source: JICA Expert Team

Figure 5.2 Conceptual Image of Trip Generation / Attraction

The model parameters are established by a linear regression.

 $Gi=a_i*X_{1i} + b_i*X_{2i} +$

 $Aj = a_i * X_{1i} + b_i * X_{2i} +$

Where, G_i: Trip Generation in Zone i

A_j: Trip Attraction in Zone j

The predictive accuracy of the model is shown by the r-squared in Table 5.1. Two types of the models including the model by vehicle availability and common model. According to the explainability and fitting rate of the variables, the model is selected by the trip purpose.

Table 5.1 Trip Generation and Attraction Model Parameters

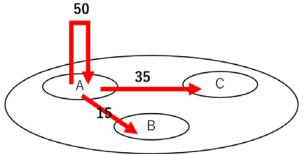
Trip	Trip Generation / Attraction Model				Car Available		Non-Available		Common	
	Purpose			Variables	β	R ²	β	R ²	β	R ²
	1	To Home	Population	Day	1.004	0.933	0.667	0.776	0.940	0.818
	2	To Work	Employees	Night	2.100	0.657	0.851	0.943	0.767	0.834
	3	To School	Students	Night	0.131	0.131	0.521	0.792	0.504	0.803
Trip Generation	41	Dutanta	Danielation	Night	0.085	0.540	0.044	0.000	0.042	0.000
	42	Private	Population	Day	0.114	0.548	0.046	0.806	0.059	0.828
	51	Desciones		Night	0.072	0.700	0.070	0.000	0.061	0.740
	52	Business	Employees	Day	0.191	0.730	0.058	0.629	0.084	0.718
	6	To Home	Population	Night	0.879	0.779	0.464	0.944	0.498	0.940
	7	To Work	Employees	Day	1.093	0.770	0.861	0.955	0.915	0.960
Trip Attraction	8	To School	Students	Day	0.154	0.803	0.956	0.812	0.884	0.898
	9	Private	Population	Day	0.143	0.534	0.129	0.804	0.146	0.863
	10	Business	Employees	Day	0.272	0.805	0.243	0.861	0.294	0.913
Freight (Generation /	/21	Total	Population	Night					0.029	0.524
Attraction)	22	iolai	Fopulation	Day					0.014	0.324

¹⁾ Excluding Walking and Bicycle Trips

Source: JICA Expert Team

5.3 Trip Distribution

In the trip distribution modeling, the trip generation and attraction by each zone are linked. The travel demand between the zones as the trip departs the zone arrives to another zone will be forecast.



	Α	В	С	Σ
Α	50	15	35	100
В	15	20	20	55
С	35	15	30	80
Σ	100	50	85	235

Figure 5.3 Conceptual Image of Trip Distribution

²⁾ Highlighted Items are selected

5.3.1 Intrazonal Trip Distribution Model:

Because the Person-Trip Survey Data, basis of the demand forecasting model include the NIUPLAN Study (2013), there's limitation to develop the accurate model. Intra-zonal trips which are made within the one traffic zone is estimated from the intrazonal trip ratio in the Base year (2023).

$$T_{ii} = I_i * G_i$$

Where:

Ti: Number of intrazonal trips by zone i

li: Intrazonal trip ratio for zone i

Gi: Trip Generation of Zone i

5.3.2 Interzonal Trip Distribution Model:

There are various estimation methods of the trip distribution models, including present pattern estimation, the gravity model and the logit model. In this Project, the orthodox gravity model is applied. Trips between each Traffic Zone are produced varying directly as the trip generation / Attraction and inversely as the zone impedance (distance between the zones).

Voorhess' gravity models were developed for simultaneous distribution. The models were for all mechanised modes of travel. The travel distance between zone was used as impedance to travel. The general form of the models and its application is illustrated mathematically in the following equations.

$$T_{ij} = G_i \frac{A_j d_{ij}^{-\lambda}}{\sum_{j=1}^{N} A_j d_{ij}^{-\lambda}}$$

Where.

Tij: Number of trips from Zone i to Zone j

G_i:Trip Generation in Zone i

A_i:Trip Attraction in Zone j

dij: zonal impedance from Zone I to j (In this project, distance is applied)

 λ : parameter

The predictive accuracy of the model is shown by the r-squared in Table 5.2. Two types of

the models including the model by vehicle availability and common model. According to the explainability and fitting rate of the variables, the common model is applied for all trip purposes.

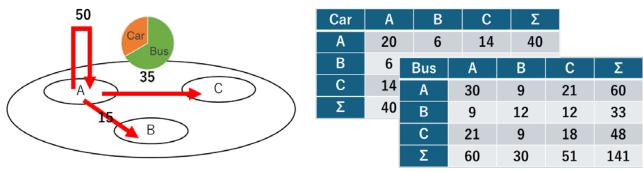
Table 5.2 Trip Distribution Model Parameters

	•	N /Effective		R^2		
Attributes	Purpose	N (Effective OD Pair)	λ	Before Frater	After Frater	
	Home	1,114	0.1	0.31	0.50	
Car	Work	1,130	0.05	0.15	0.42	
Available	School	54	0.05	0.75	0.97	
Available	Others	306	0.01	0.55	0.95	
	Business	280	0.01	0.32	0.84	
	Home	2,463	0.4	0.59	0.65	
Non	Work	2,147	0.3	0.62	0.65	
Available	School	729	0.45	0.6	0.76	
Available	Others	907	0.4	0.45	0.69	
	Business	719	0.15	0.55	0.65	
	Home	2,968	0.35	0.58	0.63	
	Work	2,703	0.3	0.48	0.53	
Common	School	752	0.45	0.6	0.75	
	Others	1,077	0.3	0.35	0.60	
	Business	900	0.2	0.46	0.57	

Source: JICA Expert Team

5.4 Modal Split

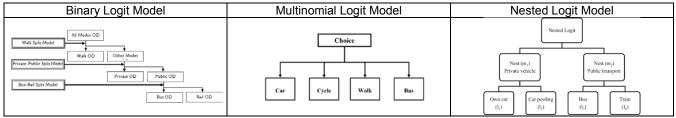
The modal split model is to forecast and analyse the travel modes choice at the time of a particular trip with an individual or a group. Generally, the travel demand and share for each traffic mode are estimated.



Source: JICA Expert Team

Figure 5.4 Conceptual Image of Modal Split

The most applied method to study modal split is the logit model, and it has various types of models, including (combination of)binary logit model, multinomial logit model and nested logit model (see Figure 5.5). Through the validation of the models, the nested logit model is applied.



Source: Various Sources

Figure 5.5 Examples of Modal Split Model

Based on the results of the SP survey (see 2.6), the mode choice model of people was estimated by trip purpose and vehicle-owning household characteristics. Table 5.3 shows the parameters of mode choice models. The main findings are as follows:

- (i) Dummy variables are assumed for taxi, bus, private car, and motorcycle. Except for private car and bus (public transport), they show a negative correlation with the utilities of the modes.
- (ii) The value of time can be estimated by dividing the parameter on travel time with the parameter on travel cost. The value of time for business trips is the highest, followed by the school trips, commuting trips and private trips. Student may be more sensitive about the travel time than workers.

Table 5.3 Parameters of Updated Mode Choice Models

Nostad	Logit Model	To V	Vork	To School		Private		NHB	
Nestea	Logit Model	θ	t	θ	t	θ	t	θ	t
Travel	Time (min)	-0.027	-13.38	-0.047	-11.77	-0.028	-15.58	-0.047	-9.56
Travel	Cost (KES)	-0.009	-22.63	-0.013	-15.42	-0.010	-26.18	-0.006	-6.69
	Car	1.684	16.69	4.439	4.76	1.332	13.46	0.422	2.15
Mode	Taxi	-0.142	-1.17	-0.396	-0.87	0.236	2.32	-0.569	-2.20
Dummy	MC / Boda Boda	-1.642	-10.91	-4.359	-7.28	-0.882	-6.64	-1.698	-5.32
	Bus	0.126	1.55	1.076	7.34	0.460	6.47	0.600	3.17
Short Trip	(Boda Boda)	0.991	7.62	2.032	6.65	0.412	3.83	1.292	4.83
Logsu	ım Variable	0.730	15.59	0.382	8.11	0.98	14.77	0.634	6.69
² ρ		0.2	201	0.2	212	0.1	78	0.1	53
Time Val	ue (KES/Min)	2.9	93	3.0	68	2.0	69	7.8	80

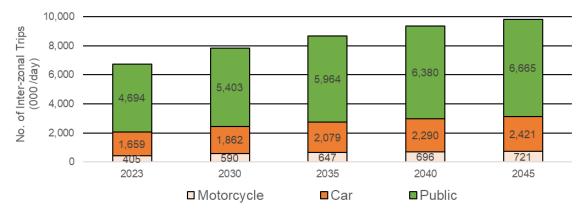
6. FUTURE TRAFFIC DEMAND IN NMA

6.1 Future Traffic Demand

6.1.1 Person Trips

This is based on the traffic models composed of trip generation/attraction, trip distribution and modal split, traffic demand by 5 trip purposes (to home, to work, to school, to others, and for business) and 4 modes (motorcycle, car, public). The projected growth of traffic demand by mode is shown in Figure 6.1. Below are the main findings.

- (i) Due to the population growth, economic growth (job opportunity and commercial activity), and motorisation, future travel demand will rapidly increase.
- (ii) Reflecting the projected high growth of car ownership, the modal share of private cars will increase and the growth of motorcycle use is remarkable
- (iii) Considering the SP Survey, a high modal share of public modes will be maintained (maintenance/improvement of public transport LOS is necessary).



¹⁾ Modal share is varied by the tested case (see Chapter 7). The OD table in the following case is applied: 2030-Case 2, 2035-Case 3, 2040-Case 4 and 2045-Case 5.

Source: JICA Expert Team

Figure 6.1 Growth of Passenger Trip Demand within NMA

6.1.2 Vehicle Trips (comparison with NIUPLAN Study)

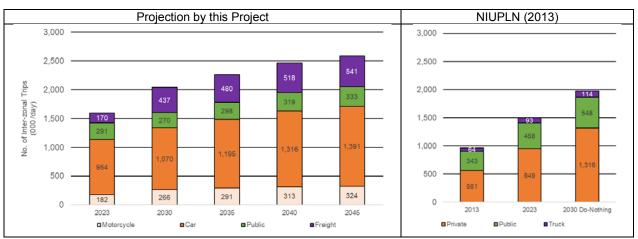
The estimated person trips are converted into the PCU bases, according to the assignment parameters including the PCU factor and load factor as shown in Figure 6.2. It shall be noted that, the public transport demand is assumed to be shifted from the mixture with the smaller vehicles into the large vehicle.

Table 6.1 Assignment Parameters by Vehicle Type

	PCU Factor	Load Factor	Value of Time (KES/min)
Motorcycle	0.50	1.11	2.25
Car	1.00	1.74	8.93
Public	1.74 / 2.00	28. 1/ 40.00	3.50
Freight Traffic	1.73	1.38	8.93

The main findings are as follows:

- (i) Due to the assignment parameters, the traffic impact by public transport is relatively lower than other modes.
- (ii) Compared with the estimated value by the NIUPLAN Study (2013), total traffic volume has similar values, but the compositions are significantly different. Traffic demand by public transport is lower than the projection by the NIUPLAN Study (2013), and the freight traffic is much higher.

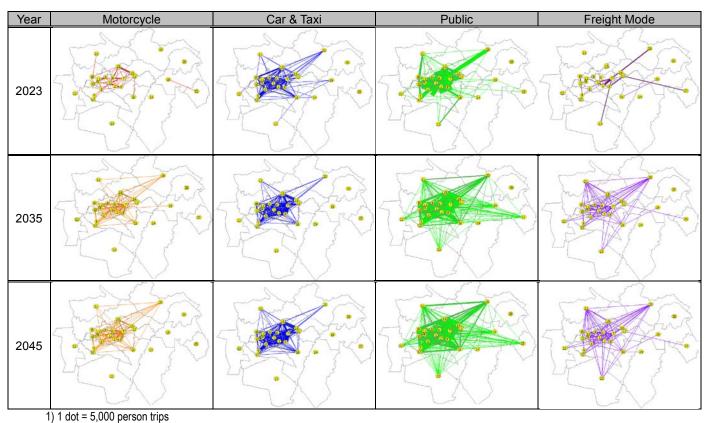


¹⁾ Modal share is varied by the tested case (see Chapter 7). The OD table in the following case is applied: 2030-Case 2, 2035-Case 3, 2040-Case 4 and 2045-Case 5.

Figure 6.2 Growth of PCU Trip Demand within NMA

6.2 Trip Distribution by Mode

Figure 6.3 visualises the trip distribution by travel mode in the cluster level. Because the population in CBD is projected not to increase from the value as of 2023, the traffic demand is expected to expand into the outer area.



Source: JICA Expert Team, worked by JICA STRADA Matrix Manipulator

Figure 6.3 Desire Lines by Travel Mode in the NMA

7. NETWORK PERFORMANCE ESTIMATION RESULT

7.1 Introduction

This chapter includes the traffic assignment results of the future traffic demand on the transport network. The two traffic assignment methodologies which are conceptuarized in Figure 7.1 are conducted according to the analysis purpose.

In highway assignment, raiway or mass-transit system is considered as road project (usually flow-independent under the capacity). The ridership is too sensitive about the travel speed along the corridor and the result is not for the design of the facilities, but suitable for the network performance in the planning stage.

In transit assignment, information of the local public transport routes, including alignment, fare, frequency, speed and capacity shall be reflected in the network. In Nairobi, it's practically impossible to conduct this method, because it is difficult to collect the concious infromation of the local public transport in Nairobi.

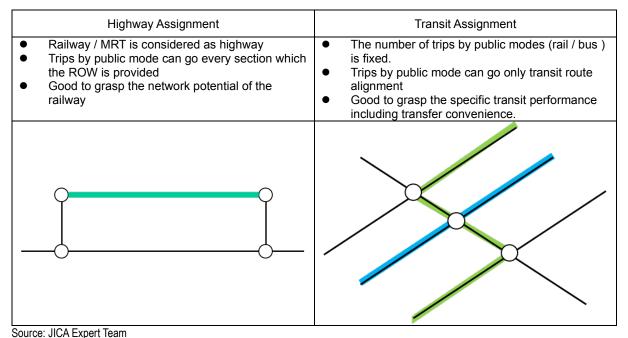


Figure 7.1 Outline of the Traffic Assignment Methodology

7.2 Highway Assignment for Potential Network Performance

7.2.1 Outline of the Traffic Assignment Cases

The five cases listed in Table 7.1 are tested. The proposed projects in each case are visualised in Figure 7.2. One purpose of the demand analysis is to review the potential performance of the proposed projects, and the assumed Level of Services of the proposed mass transit projects is summarised in Table 7.2.

Table 7.1 Tested Cases of the Highway Assignment

Case	Summary	2023	2030	2035	2045
Case 1	Do nothing (Existing network only)	1	✓	✓	1
Case 2	Case 1 with an existing transport network plan including 5 BRT lines.		√ 1)	1	✓
Case 3	Case 2 with the upgrading of commuter rail lines.			√ 1)	1
Case 4	Case 3 with new roads network				✓
Case 5	Case 4 with new UMRT				√ 1)

¹⁾ Including potential demand (without Capacity of the Mass Transit) case Source: JICA Expert Team

Table 7.2 Parameters of Assumed Performance of the Proposed Mass Rapid Transit

	OT 7 TOO GITTO GITTO	111101100 01 1110 1 10	pooca mass rapid			
	BRT	Commuter Rail	UMRT			
Capacity	150 pax/bus	2,000 pax/train	2,000 pax/train			
Frequency	60 trips/hr	15 trips/hr	20 trips/hr			
Peak hour Rate		10%				
PPHPD	10,000	30,000	45,000			
Speed	20 kph	30 kph (Inner) 50 kph (Suburbs)	30 kph			
Fare	KES 100 + 5 / km, common fare among the same mode					

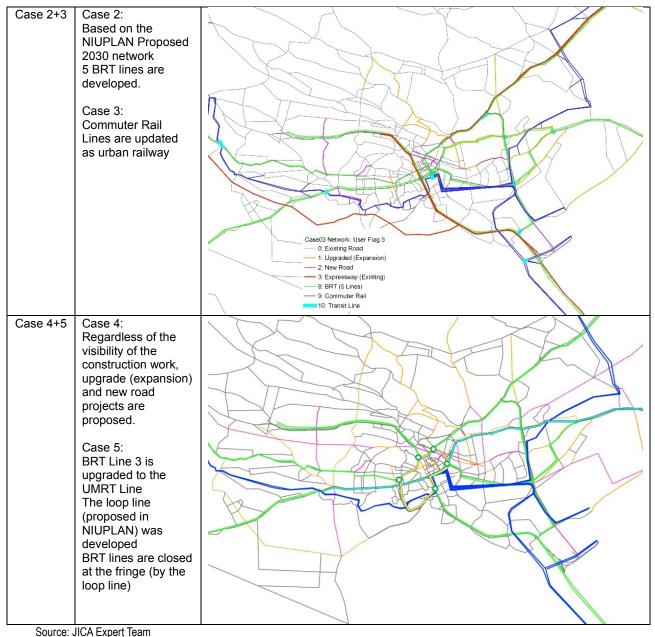


Figure 7.2 Outline of the Transport Network in the Tested Cases

7.2.2 Assessment of Future Traffic Demand on Baseline / Do-Nothing Case

This exercise simulates the road condition in the future if no intervention is made for the city. Road traffic volume will exceed the road capacity shortly (2030/2035), and the travel speed will be much slower, as in other megacities in the world. The result suggests the necessity of transport developments, including road and public transport and traffic management.

Table 7.3 Major Road Network Performance Indicators of Case 1 (Baseline / Do-Nothing) by Target Year

		<u></u>	,		
Year	Case	PCU-Km	PCU-hr	Ave. Speed	Ave. V/C
2023	Case 1	29,891	1,642	18.2	0.70
2030	Case 1	39,451	3,417	11.5	0.94
2035	Case 1	44,073	4,634	9.5	1.05
2045	Case 1	50,933	7,516	6.8	1.21

Source: JICA Expert Team

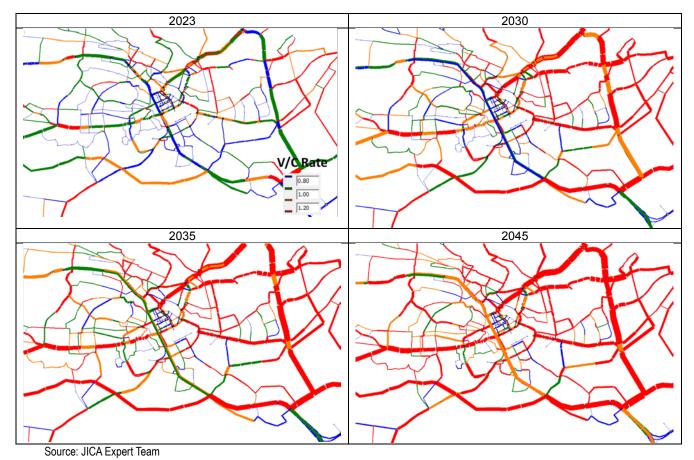


Figure 7.3 Traffic Assignment Result of Case 1 (Baseline / Do-Nothing) by Target Year

7.2.3 Assessment of Proposed BRT Lines (2030)

(1) Road Performance Indicators in NMA

In Case 2, Road projects which are proposed in the NIUPLAN Study (2013) and 5 BRT Projects are reflected. Figure 7.4 visualises the traffic assignment result of Case 2 as of 2030. Compared with Case 1 (Figure 7.3) in 2030, the congestion at several sections is mitigated.

Table 7.4 summarises the major transport network performance of Case 2 in every target

year. It shall be noted that the public transport is assumed to be converted from the small and medium vehicles (40 passengers, 2.0 PCU in average into the large buses (28.1 passengers, 1.74 PCU in average). The traffic performance in terms of the average V/C rate and average travel speed are improved. On the other hand, provision of the transport infrastructure is insufficient in 2035 and 2045.

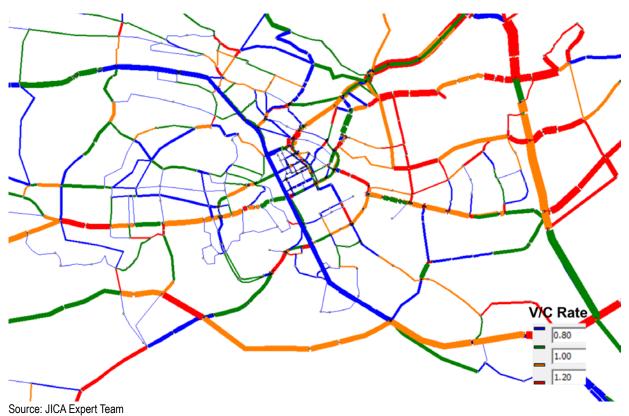


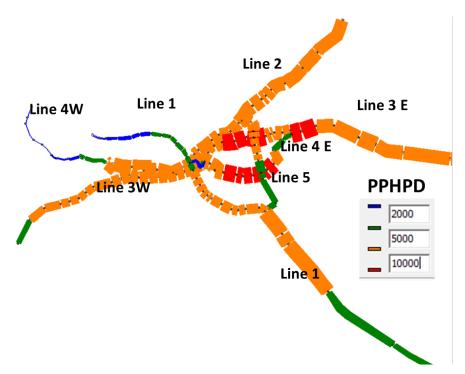
Figure 7.4 Traffic Assignment Result of Case 2 (Do NIUPLAN + BRT) in 2030

Table 7.4 Major Road Network Performance Indicators of Case 2 (Do NIUPLAN + BRT) by Target Year

Year	Case	PCU-Km	PCU-hr	Ave. Speed	Ave. V/C
2023	Case 1	29,891	1,642	18.2	0.70
2030	Case 1	39,451	3,417	11.5	0.94
2030	Case 2	34,908	1,947	17.9	0.79
2035	Case 2	39,064	2,590	15.1	0.88
2045	Case 2	45,245	4,051	11.2	1.02

(2) Performance Indicators of Proposed Mass Transit

The passenger volume of the proposed BRT is visualised in Figure 7.4. Due to traffic congestion along major arterial roads, BRT routes are expected to perform better. Table 7.5 summarises the major transport performance indicators of BRT with/without capacity limit of the BRT Lines. BRT Line 3 (Eastern Part) potentially has, much higher passenger demand than the capacity of BRT.



Source: JICA Expert Team

Figure 7.5 Traffic Volume of Proposed BRT in 2030

Table 7.5 Performance Indicators BRT, Case 2 (Do NIUPLAN + BRT) in 2030

Case				Length (km)	Pax-km (000/day)	PPHPD	Pax- km/km
		B1	Line 1	57.7	4,995	9,102	87
		B2	Line 2	22.8	3,672	9,856	161
		B3W	Line 3 (West)	21.0	2,440	7,640	116
With	BRT	B3E	Line 3 (East)	57.9	8,964	11,686	155
Capacity Limit Case	DKI	B4W	Line 4(West)	21.9	1,881	9,482	86
Limit Gage		B4E	Line 4 (East)	12.5	1,928	11,238	155
		B5	Line 5	11.2	1,180	7,649	105
			Subtotal	205	25,060	-	122
		B1	Line 1	57.7	5,174	9,439	90
		B2	Line 2	22.8	4,285	12,782	188
		B3W	Line 3 (West)	21.0	2,638	8,780	125
Without	BRT	B3E	Line 3 (East)	57.9	12,783	28,749	221
Capacity Limit Case	DKI	B4W	Line 4(West)	21.9	1,928	9,795	88
Lillin Gase		B4E	Line 4 (East)	12.5	1,756	12,405	141
		B5	Line 5	11.2	1,535	10,185	137
			Subtotal	205	30,100		147

7.2.4 Assessment of Upgrade of Commuter Rail Lines (2035)

(1) Road Performance Indicators in NMA

In Case 3, the upgrade of commuter railway lines is reflected. Figure 7.4 visualises the traffic assignment result of Case 3 as of 2035.

Table 7.6 summarises the major transport network performance of Case 3 in every target year. The traffic performance in terms of the average V/C rate and average travel speed is slightly improved from Case 2. On the other hand, the provision of the transport infrastructure is still insufficient in 2045.

Table 7.6 Major Road Network Performance Indicators of Case 3 (Case 2 + Commuter Rail) by Target Year

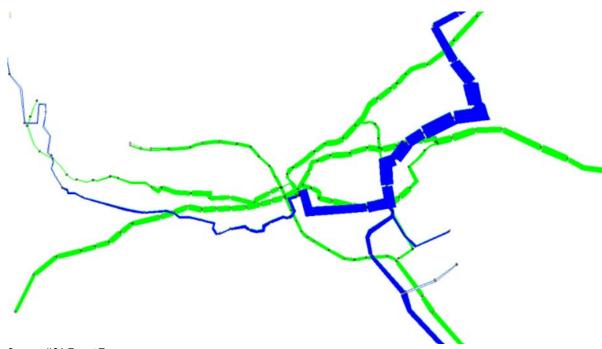
		ituii, by i	urgot rou.		
Year	Case	PCU-Km	PCU-hr	Ave. Speed	Ave. V/C
2035	Case 1	44,073	4,634	9.5	1.05
2035	Case 2	39,064	2,590	15.1	0.88
2035	Case 3	37,725	2,338	16.1	0.85
2045	Case 3	43,538	3,628	12.0	0.98

Source: JICA Expert Team

(2) Performance Indicators of Proposed Mass Transit

The passenger volume of the proposed Commuter railway and BRT is visualised in Figure 7.6. The CBD-Thika Line has high passenger demand. On the other hand, demand for other routes parallel to BRT is not high.

Table 7.7 summarises the major transport performance indicators of Commuter Rail and BRT, with/without a capacity limit. Under the case without a capacity limit, the passenger demand of commuter railway lines is lower than with a capacity limit case and some passengers seem to be taken by BRT. Commuter railways operate in currently non-urbanised areas, and the effectiveness of the network is lower than the BRT lines.



Source: JICA Expert Team

Figure 7.6 Traffic Volume of Proposed Commuter Rail and BRT in 2035

Table 7.7 Performance Indicators Commuter Rail and BRT of Case 3 in 2035

Case				Length (km)	Pax-km (000/day)	PPHPD	Pax- km/km
		B1	Line 1	57.7	4,457	6,188	77
		B2	Line 2	22.8	4,159	10,208	182
		B3W	Line 3 (West)	21.0	3,429	9,217	163
	BRT	B3E	Line 3 (East)	57.9	8,388	11,529	145
	DICT	B4W	Line 4(West)	21.9	2,086	10,335	95
With		B4E	Line 4 (East)	12.5	1,779	11,177	143
Capacity		B5	Line 5	11.2	857	5,651	77
Limit			Subtotal	205	25,155	-	123
Case		C1A	CBD-Limuru (to Dagoretti)	19.4	1,291	5,055	67
Case		C1B	CBD-Limuru (DGR-LMR)	24.2	387	1,027	16
	Commuter Rail	C3	CBD-Thika	49.2	19,746	27,418	401
		C2	CBD-Athi-Lukenya	45.9	5,584	8,943	122
		C2A	Syokimau-JKIA	4.0	7	84	2
		C4	CBD-Embakasi	12.9	511	2,140	39
			Subtotal	156	27,526	-	177
		B1	Line 1	57.7	4,835	6,973	84
		B2	Line 2	22.8	6,360	16,584	279
		B3W	Line 3 (West)	21.0	3,726	10,632	177
	BRT	B3E	Line 3 (East)	57.9	12,058	26,147	208
	DIXI	B4W	Line 4(West)	21.9	2,543	13,215	116
Without		B4E	Line 4 (East)	12.5	1,619	12,004	130
Capacity		B5	Line 5	11.2	1,364	8,255	122
Limit			Subtotal	205	32,505		159
Case		C1A	CBD-Limuru (to Dagoretti)	19.4	806	3,132	14
Cube		C1B	CBD-Limuru (DGR-LMR)	24.2	306	699	13
	Commuter	C3	CBD-Thika	49.2	15,564	23,101	316
	Rail	C2	CBD-Athi-Lukenya	45.9	5,279	8,170	115
	ixali	C2A	Syokimau-JKIA	4.0	7	84	2
		C4	CBD-Embakasi	12.9	310	1,259	24
			Subtotal	156	22,272	-	143

7.2.5 Assessment of Proposal of Introducing UMRT (2045)

(1) Road Performance Indicators in NMA

Case 4 proposes to upgrade (expansion) and new road projects, and Case 5 proposes to introduce UMRT lines, including the East-West Line, which is updated from BRT Line 3 and CBD Loop Line.

Table 7.6 summarises the major transport network performance of every case in 2045. The traffic performance in terms of the average V/C rate and average travel speed are significantly improved from Case 3 to 5.

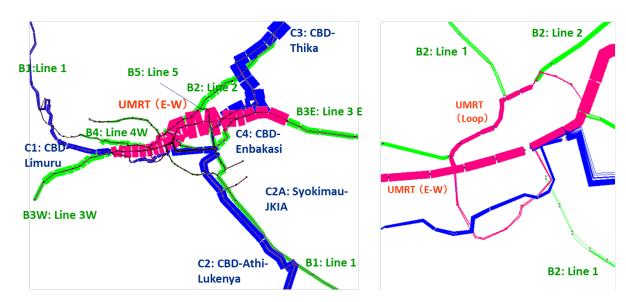
Table 7.8 Major Road Network Performance Indicators of Every Case in 2045

Year	Case	PCU-Km	PCU-hr	Ave. Speed	Ave. V/C
2045	Case 1	50,933	7,516	6.8	1.21
2045	Case 2	45,245	4,051	11.2	1.02
2045	Case 3	43,538	3,628	12.0	0.98
2045	Case 4	43,618	2,581	16.9	0.91
2045	Case 5	43,408	2,537	17.1	0.90

Source: JICA Expert Team

(2) Performance Indicators of Proposed Mass Transit

Passenger volume of the proposed mass transit network is visualised in Figure 7.7, and Table 7.7 summarises the major transport performance indicators. It shall be noted that BRT routes don't operate in the city centre (within the CBD Loop line). As mentioned in the previous sessions, UMRT, which is upgraded from BRT Line 3, shows high passenger volume with more than 40,000 PPHPD. CBD Loop Line, which is proposed in the NIUPLAN Study (2013), is reflected as the urban railway, but the passenger demand is not high.



Source: JICA Expert Team

Figure 7.7 Traffic Volume of Proposed Urban Mass Transit in 2045

Table 7.9 Performance Indicators Commuter Rail and BRT of Case 3 in 2035

			Length	Pax-km	PPHPD	Pax-
			(km)	(000/day)		km/km
	B1	Line 1	55.2	3,107	5,569	56
	B2	Line 2	21.6	4,167	10,719	193
	B3W	Line 3 (West)	13.4	2,561	11,195	190
BRT	B3E	Line 3 (East)	38.2	4,251	7,900	111
BKI	B4W	Line 4(West)	20.0	1,132	6,591	57
	B4E	Line 4 (East)	10.0	1,214	8,933	121
	B5	Line 5	11.2	1,239	6,316	111
		Subtotal	170	17,671	-	104
Commuter	C1A	CBD-Limuru (CBD to Dagoretti)	19.4	1,839	8,598	95
	C1B	CBD-Limuru (DGR-LMR)	24.2	1,486	4,287	61
Commuter	C3	CBD-Thika	49.2	17,035	27,322	346
Rail	C2	CBD-Athi-Lukenya	45.9	8,435	11,977	184
Naii	C2A	Syokimau-JKIA	4.0	9	107	2
	C4	CBD-Embakasi	12.9	83	431	6
		Subtotal	156	28,886	-	186
	U1W	Line 1 (West)	7.4	2,707	20,068	364
UMRT	U1E	Line 1 (East)	21.5	10,315	41,671	480
UIVIRI	U3	Line 3 (Loop Line)	12.4	719	9,320	58
		Subtotal	29	13,021	-	450

7.3 Transit Assignment for Demand Analysis of the Target Area

7.3.1 Outline of the Traffic Assignment Case

Generally, transit assignment is suitable for analysing the specific transit performance, including the convenience of transfer between travel modes in short term. Since the road-based public transport could be changed flexibly, analysis in the long-term is difficult by transit assignment, with specific information of the public transport in the City.

In this section, a case study of restructuring the existing bus route network is conducted. Although bus route reform originally covers the entire metropolitan area, the West Nairobi Area (Figure 7.8) is examined as a case study site. In the West Nairobi Area, the main urban area is up to 20 km from the CBD, with regional cities such as Karen, Kikuyu, and Ngong in the suburbs. The main commercial and business areas are concentrated in the CBD, but there are some subcentres such as the Junction and Kawangware areas.

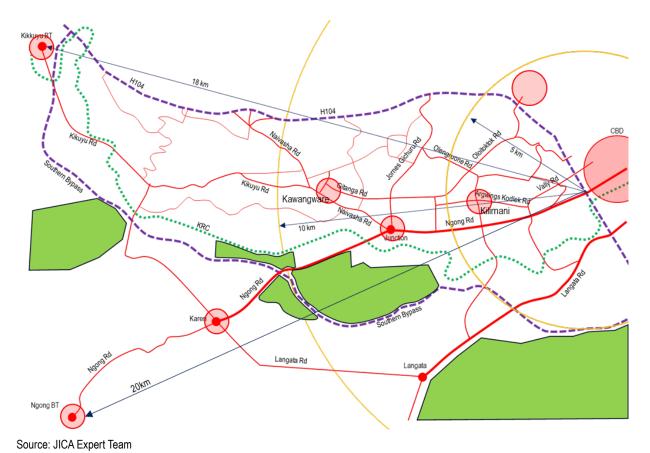
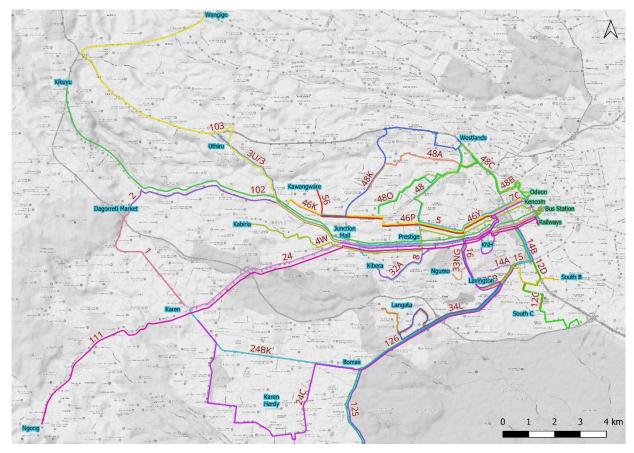


Figure 7.8 Outline of West Nairobi Area

7.3.2 Proposed Restructuring Plan

Figure 7.9 indicates the current public transport network in the Western Nairobi Area. The network is centred around the CBD, with congested routes in the city centre. All routes are approved by the NTSA or county government, but are often rerouted by the driver, due to the road conditions. There are competitions among operators with many touts, and safety for boarding and alighting is not guaranteed. Fares also vary by time of day and sometimes negotiation basis, and reckless driving in violation of traffic laws is widespread.



Source: JICA Expert Team

Figure 7.9 Current Bus and Matatu Network in West Nairobi Area

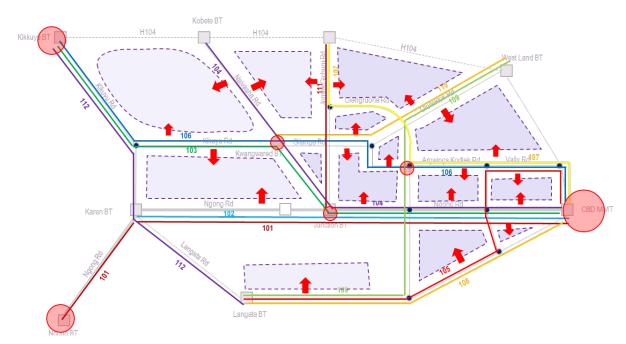
As a solution, the JICA Expert Team proposed to introduce trunk bus routes, which serve as the backbone of a city's public transport system. The routes connect major hubs, including city centres, residential areas, and train stations, with high-capacity and frequency service. These routes are supposed to support the following:

- (i) Efficient mass transit during peak hours
- (ii) Easy transfers to local feeder buses and last-one-mile services
- (iii) Reduced traffic congestion and environmental impact
- (iv) Improved accessibility across the metropolitan area

For the operation of the trunk routes, the following principles shall be applied:

- (i) Managed by one operation company
- (ii) LOS-based operation management
- (iii) Operation under a fixed timetable and fixed fare
- (iv) Efficient operations with the balance supply and demand (Efficient, data-driven operation)
- (v) Safety Management, promote gender/vulnerable people mainstreaming, etc.

JICA Expert Team proposed the truck bus route network in the West Nairobi Area. There are 12 trunk routes and local movement is supposed to be served by a matatu.



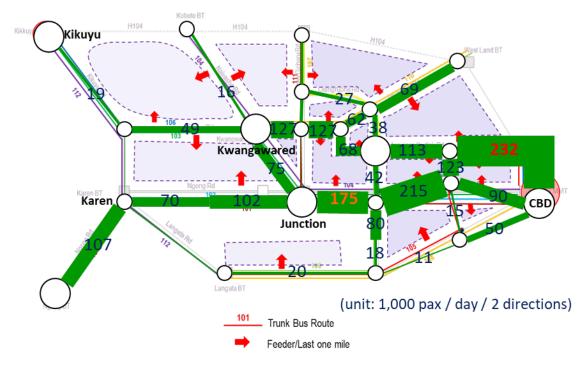
Source: JICA Expert Team

Figure 7.10 Proposed Trunk Route Network in West Nairobi Area

7.3.3 Passenger Demand Analysis

Figure 7.11 indicates the transit assignment results, and Table 7.10 shows the major performance indicators of the proposed 12 routes. It shall be noted that all public passenger demand is supposed to be assigned to the proposed bus routes. Through the validation from the actual traffic count result, the accuracy of the model seems to be ensured (see Figure 7.12). The main findings are as follows:

- (i) Public transport passenger demand in some sections is high, to introduce mass transit (BRT / MRT).
- (ii) Generally, too high frequency (more than 1 trip per minute) may cause congestion by buses around the stops. Conversion from smaller vehicles to larger vehicles could help mitigate the traffic congestion
- (iii) According to the major performance indicators (ridership, PPHPD, etc.), the demacation of the operation right by the route could be arranged.



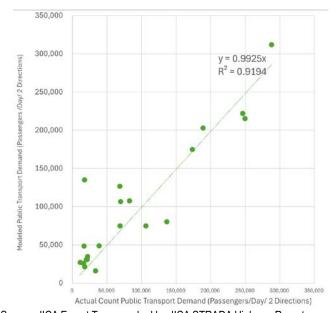
Source: JICA Expert Team

Figure 7.11 Sectional Transit Assignment Results

Table 7.10 Performance Indicators of the Trunk Routes

#	km	Ridership	PPHPD	Pax-km	km/Trip
101	20.8	196,403	4,509	1,475,339	7.5
102	13.7	74,934	1,840	354,303	4.7
103	22.5	174,940	3,536	676,191	3.9
104	14.0	143,227	3,132	459,364	3.2
105	14.8	173,499	4,735	314,287	1.8
106	10.4	147,845	2,740	624,848	4.2
107	9.2	115,503	2,426	306,372	2.7
108	12.1	205,458	5,697	260,814	1.3
109	14.6	169,875	4,195	342,470	2.0
110	8.4	78,811	2,613	427,625	5.4
111	6.8	60,884	1,024	126,884	2.1
112	20.7	37,017	433	127,765	3.5

Source: JICA Expert Team



Source: JICA Expert Team, worked by JICA STRADA Highway Reporter

Figure 7.12 Comparison of the Sectional Public

Passenger Volume with Modeled and Actual Traffic

Volume on the Road Sections

8. INTEGRATED PUBLIC TRANSPORT NETWORK PLAN AND STRATEGY

8.1 Conceptual Integrated Public Transport Network

From the result of the demand analysis up to 2045, the public transport network in NMA, with the current issues and preferred transit system between the urban cores, is conceptualised in Figure 8.1. The key issues for the integration of public transportation can be summarised as follows:

- (i) Functional network configuration with appropriate transport node facilities: the transit network shall be configured by the function, including arterial, secondary and feeder routes. Since the transfer between modes is increased, the importance of the transport node facilities is emphasized.
- (ii) Operations with a balance between supply and demand: current excessive competition makes the public transport industry unsustainable in the long term. Optimisation of the fleet with the configuration of the public transport network is required.
- (iii) Provision of quality public services, including traffic safety and gender/vulnerable Sensitivity: according to the guidance or service standards specified by the authority, the public transport service quality shall be provided to the citizens, including the vulnerable people.
- (iv) Improvement of the operation environment for the safe and smooth operation of public transportation: to operate the public transport service the road environment and facilities shall be improved to a certain level.

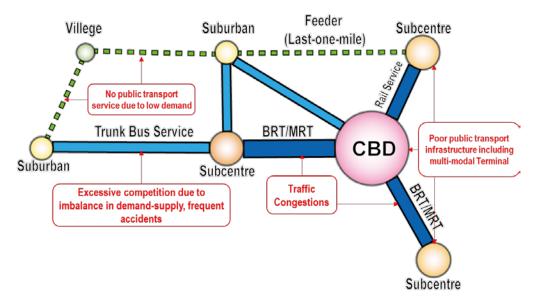


Figure 8.1 Conceptual Image of the Integrated Public Transport Network in NMA

8.2 Public Transport Network Plan and Public Transport Corridors (Long Term)

The principles of the public transport network plan are summarised as shown in Figure 8.2. The main findings are as follows:

The selection of the 5 BRT corridors is reasonable in terms of the demand. On the other hand, only BRT lines seem not to be capable for the future traffic demand since 2030.

As an alternative to the transit backbone, the upgrade of the commuter rail lines can be considered and studied¹. But the alignment of the existing tracks is in currently non-urbanised areas, and the passenger demand of the lines, expect of the CBD-Thika Line is not so high.

Any east-west corridor (BRT Line 3 or Line 4) may need to be upgraded to UMRT to support the passenger demand. With the CBD-Thika Line in the South-North (East) direction, this mass transit line will be the cross-backbone of the urban transit network.

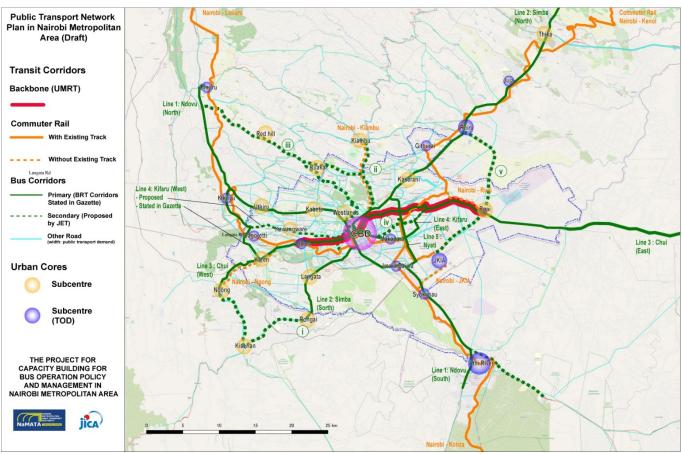
While the 5 BRT corridors are considered as the primary corridors, the following corridors have potential as the secondary corridors:

- (i) Langata Rd (to Langata, Rongai): Partly included as the BRT Line 2 (southern section)
- (ii) Kiambu Rd (to Kiambu)
- (iii) Limuru Rd (to Limuru)
- (iv) Heshima Ave Kangundo Rd (to connect CBD to Line 5)
- (v) Eastern Bypass

To mitigate the chaotic traffic situation in the CBD, formulating an inner transit network coordinated with proposed railway-city projects (Figure 8.3) is the alternative approach. Operation of BRT with a dedicated section in the CBD is considered to be impossible. If the bus operation in the CBD is restricted and divided parts are connected by the CBD Loop Line, which is proposed in the NIUPLAN Study (2013), anywhere within the area is less than a kilometre from the fringe. It is necessary to develop the intermodal function at the fringe stations.

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¹ KRC: Development of Commuter Rail Master Plan for Nairobi Metropolitan Region, 2018



Source: JICA Expert Team

Figure 8.2 Public Transport Network Plan in NMA

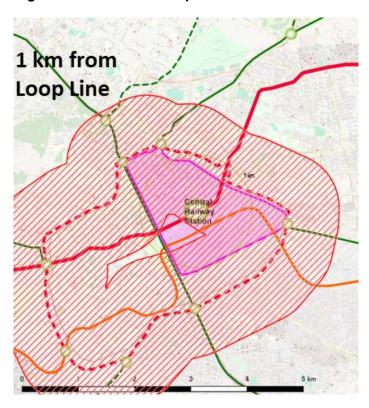


Figure 8.3 Inner Transit Network around CBD

8.3 Reforming Bus Transport Services in NMA (Short-Term)

While a mass transit network is proposed to meet future public transport passenger demand, the most urgent need in the short term is to expand the transportation system with a focus on buses, which meet various trip demands (as visualised in Figure 8.4). Not only introducing BRT but also modernisation of the bus service shall be discussed.

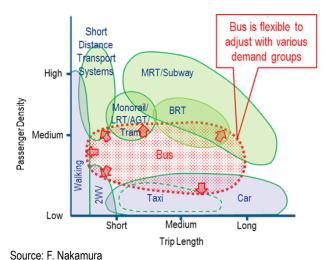


Figure 8.4 Coverage of Urban Transport
Modes and the Flexibility of Bus

8.3.1 Vision for Reforming Bus Transport Service

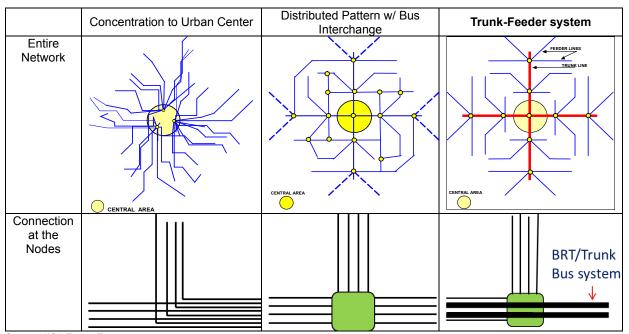
To encourage further challenges towards the reform, the following vision that should be shared by all stakeholders are proposed:

- (i) Through the establishment of an integrated, high-quality, and functional regional public transportation network, the balanced development of land use and economic activities in the entire metropolitan area will be promoted, and a transport society centred on public transportation will be created.
- (ii) Improving bus-related infrastructure, such as public transport terminals, bus stops, garages, sidewalks, etc., will improve the efficiency of bus services and contribute to improving the pedestrian and urban environment.
- (iii) To create an inclusive transport society through the introduction of new bus structures and the promotion of barrier-free access to related facilities.

8.3.2 Restructuring the Bus Network

A suitable bus network is up to the structure of the city. In NMA, development of sub-centres is proposed, but the urban structure is mono-centred and concentrated on the CBD. The existing bus network is concentration to the urban centre, without hierarchical classification but huge duplication. Considering the flexibility of bus transport, it is preferable to develop a public bus network with a systemised hierarchy of trunk routes and feeder routes in the NMA.

With the restructuring of the bus network, transfer between modes will be enhanced and he terminal facilities will be more important. To minimize passenger reluctance to transfer, improving transfer convenience through the development of the nodal points is one of the issues in public transport development. In the medium term, reform of the fare system also shall be discussed.



Source: JICA Expert Team

Figure 8.5 Examples of Urban Bus Network

As shown in 7.3.3 (Passenger Demand Analysis), the required number of trips and vehicles for trunk routes in the West Nairobi Area are estimated. If it is difficult to procure the large buses with high capacity, alternative medium-sized vehicles shall be mobilized but the congestion due to the bus traffic may not be able to be resolved. As part of the analysis, a conceptual development plan of the transport terminals is also proposed (see Figure 8.6). The current public transport system, including terminals and roads, is poorly developed, causing traffic congestion and degradation of the urban environment. One of the major components of the reform is, the development of related infrastructure, especially terminals and bus stops.

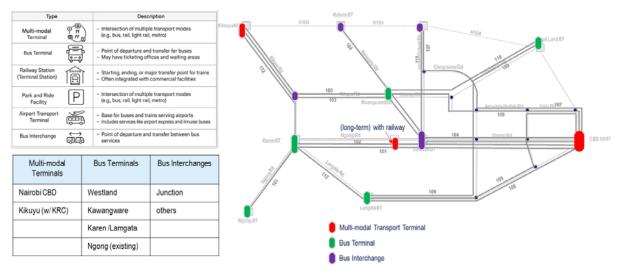


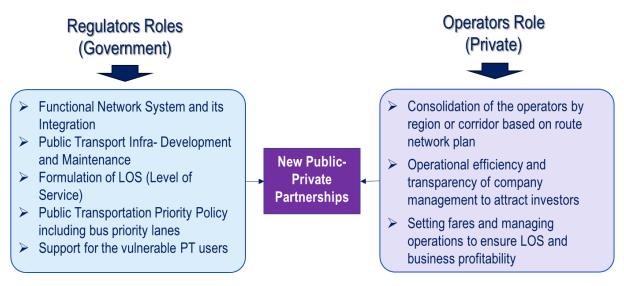
Figure 8.6 Proposed Transport Terminals in West Nairobi

8.3.3 Industrial Reform

(1) New Public-Private Partnerships

The major challenge to achieving the vision for reforming public transport is the current fragmented industrial structures of bus transport. The public transport operators in NMA and Kenya are mainly private operators, and even a minimum regulation to secure the service quality is not working. To implement the proposed measures, including route restructuring, terminal development and operation under the schedule, industrial reform of public transport operators is necessary.

As an alternative to the operation management system, a new partnership between the public authority and private operators is proposed. To provide quality public transportation services to create healthy urban development and an inclusive transportation society, bus transport shall be operated as a public service, rather than the for-profit private business it has been in the past. Proposals for what the government and the private sector need to do under the new partnership are shown in Figure 8.7.



Source: JICA Expert Team

Figure 8.7 Proposed Public-Private Partnership for the Bus Industry in NMA

(2) Fare Policy

■ Form of Fare

Bus fares are a critical component of public transport, as they determine both affordability for passengers and profitability for operators. Fare levels influence the number of passengers using the service. In Nairobi, bus fares are not approved by relevant agencies such as the NTSA or NCCG but are instead set independently by bus operators. It has

been observed that fares are adjusted based on the time of day, day of the week, weather conditions, and other factors, with operators setting higher fares during periods of high demand to maximise revenue. Globally, bus fares are generally set using the fully distributed cost method. However, most bus operators in NMA do not prepare financial statements, making it difficult to calculate fares using this approach.

There are 3 types of form of fare for route bus Fixed fare, Zone fare and Distance fare as shown in Table 8.1. Currently, a distance-based fare system is applied in the Nairobi Metropolitan Area (NMA). While it is considered reasonable since users pay according to the distance travelled, it requires additional equipment and the fare calculation process is more complex compared to fixed or zone fares.

Table 8.1 Form of Fare

	Pros and Cons	Image in NMA
Fixed (Flat)	 Does not require a boarding ticket One IC card validator is sufficient Easy for users to understand Difficult to apply consistent fares for both short- and long-distance travel 	Tallores Tallor
Zone	Easy for users to understand Requires a boarding ticket machine or an additional IC card validator and fare indicator Fares across zones may be more expensive	Total Control of Service Servi
Distance (Section)	 Reasonable, as fares are based on distance travelled Requires a boarding ticket machine or an additional IC card validator and fare indicator Fare setting method is more complex 	CHECK COLUMN TO CONTROL OF THE COLUMN TO COLUM

Source: JICA Expert Team

Public transport fares should be set based on data, using established fare calculation methods to ensure transparency, affordability, and sustainability. There are three major methods for fare calculation, as shown in Table 8.2. Among these methods, the fully distributed cost method is commonly applied to public transport fare setting globally, ensuring operators can recover operational costs while maintaining service quality. However, in environments where operators do not prepare financial statements, such as in NMA, adopting or combining elements of the yardstick or price-cap methods may be considered to promote efficiency and protect passengers from excessive fare increases while ensuring operators' financial viability.

Table 8.2 Fare Calculation Method

Method	Outline
Fully Distributed Cost Method	 This method adds the costs required to operate the service (fuel, equipment, operations, labour, etc.) to an appropriate profit margin to determine a rate that aligns with the cost of providing the service. Commonly used in public services such as electricity, gas, and water. Since profit is included in the cost, operators can maintain service provision without incurring losses.
Yardstick Method	 Compares the efficiency of different operators by calculating standard costs while adjusting for differences in business content and environment. Used as an incentive regulation to encourage efficient operations. Aims to maximise regulatory effectiveness while using minimal data.
Price-Cap Regulation Method	 Sets a predetermined maximum price, with regulation focusing only on this upper limit. Allows operators the flexibility to set lower fares, provided they remain below the cap. Designed to curb excessively high fares and protect passengers.

Source: JICA Expert Team

■ Fare Calculation- Using Fully Distributed Cost Method

The Fully Distributed Cost (FDC) Method calculates bus fares by summing all operating costs required to run the service, including fuel, labor, vehicle maintenance, repair, and depreciation costs, and adding a reasonable profit margin to ensure financial sustainability for operators. This method is typically used in public services to maintain operations without losses. In the context of Nairobi, the FDC method considers an average fare rate per km (e.g., 20 KES/km) and applies distance-based diminishing rates where the fare per km reduces as the trip distance increases, while ensuring minimum flat fares to cover fixed costs on short trips. This structured approach ensures that fare revenues align with actual operational costs while considering affordability, transparency, and the need for sustainable bus operations within the Nairobi Metropolitan Area.

Increased revenue

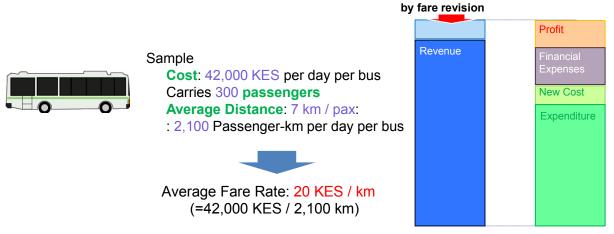


Figure 8.8 An Example of Fare Calculation

■ Considering Social Impact

Affordability is essential in bus fare setting to ensure accessibility for low-income and vulnerable groups. Following categories shall be take in considered for setting fares for public transportation.

Table 8.3 Key Factors Influencing Public Transport Fare Setting

Category	Key Factor	Notes
	Operation cost,	✓ Including vehicle procurement, maintenance, fuel, staff
Economic	subsidies, supply &	wages and facility management
	demand	✓ Costs increase with service coverage and frequency
		✓ Transport should cost no more than 10-15% of monthly
Social	Income levels, equity,	income
	accessibility	✓ Concessions or exemptions may apply to low-income or vulnerable groups
	Urban planning,	✓ Whether the focus is on profitability or equitable mobility
Policy-related	transport policy, regulation	✓ Links with urban congestion reduction or environmental goals
		✓ Presence or alternative modes like taxis, boda-boda, ride-
Market-based	Competition, alternative	sharing, etc.
	modes	✓ Fare hikes may reduce ridership and potentially lower revenue
Service-	Quality,	✓ Punctuality, safety, cleanliness, customer service, etc.
related	reliability, user satisfaction	✓ High service quality can justify slightly higher fares

Considering social impact ensures that fare setting does not exclude vulnerable groups while maintaining the viability of public transport services, contributing to equitable, inclusive urban mobility.

Further details on fare calculation methods are provided in Appendix A.

THE PROJECT FOR CAPACITY BUILDING FOR BUS OPERATION POLICY AND MANAGEMENT IN NAIROBI METROPOLITAN AREA

Public Transport Fare System in NMA

0. Table of Contents

- 1. Fare System in NMA
- 2. Fare System in Japan
- 3. Form of Fare
- 4. Fare Calculation Method
- 5. Fare Calculation Using Fully Distributed Cost Method -
- 6. Fare Calculation Considering Social Impact -
- 7. Fare Setting during Pilot Project
- 8. Other Consideration

1. Fare System in NMA

1. Fare System in NMA

■ Fare Chart

How do define the fares?







We hear that fares differ by...

• Time: Higher during peak-hour

• Weather: Higher during Rain

Day: Weekday and Weekend

Others: Music, Movie, etc.



Are there any other definitions? Is it up to drivers to decide?

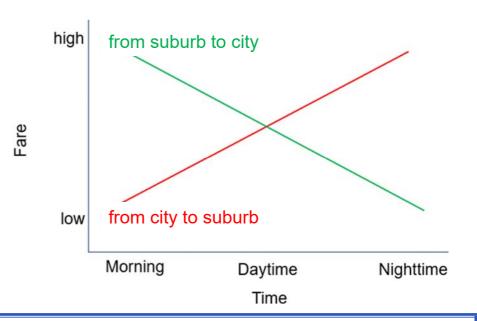
1. Fare System in NMA

■ Fare Chart from Survey in Route 111

	From	То	Ope	erator	5:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 13:59	14:00 15:29	15:30 16:59	17:00 19:59	20:00 20:59	21:00 23:59	Average	Highest L	owest
			K-Trans	;	80	80	80	80	100	100	100		80	80			
CE			Super M	/letro	60	70	70	70	80	100	100	100	100	80			
	ODD	NI	Metro Ti	rans	70	80	80	80	80	80	100	100	100				
	CBD	Ngong	Enabled	i	75	75	75	70	70	70	100	100	100	100			
CBD			NTVRS		75	75	75	100	100	100	125	125	125	125			
Ngong -			Nangkis	;	75	75	75	100	100	100	125	125	125	125			
Ngong	Averag	je			73	76	76	83	88	92	108		105	102	91	125	60
			K-Trans		100	100	80	80	70	70	70		70	70			
	Ngong	CBD	Super M	/letro	100	100	70	70	70	70	70	50	50	50			
			Enabled	t	100	100	80	70	60	60	50		50	50			
	Averag	e			100	100	77	73	67	67	63		57	57	72	100	50
			K-Trans		70	70	70	70	80	80	80		80	80			
CBD	CBD	Karen	Super M		60	60	60	70	80	100	100		100	80			
I			Enabled	i				60	60	60	100		100	100			
Karen	Averag				65	65	65	67	73	80	93		93	87	78	100	65
	Karen	CBD	K-Trans		70	70	60	60	60	60	60		60	60	62	70	60
		CBD Lenana	K-Trans		70	70	70	70	80	80	80		80	80			
CBD			Super M		60	70	70	70	80	100	100		100	80			
I	CBD		Super M		60	50	50	70	80	100	100	100	100	80			
Lenana			Metro Ti		50	60	60	60	80	80	100	100	100				
Lonana			Enabled	i				50	50	50	100	100	100	100			
	Averag	e			60	63	63	64	74	82	96		96	85	78	100	50
Ngong			K-Trans		50	50	40	40	40	40	40		40	40			
l	Ngong	Karen	Super M		50	50	30	30	30	30	30		30	30			
Karen			Enabled	i	50	50	50	30	30	30	30		30	30			
	Averag	e			50	50	40	33	33	33	33		33	33	37	50	30
Ngong			K-Trans	-	80	80	60	60	60	60	60		60	60			
ı	Ngong	Lenana	Super M		70	70	50	50	50	50	50		50	50			
Lenana	Averag	10	Enabled	i	100 83	100 83	80 63	50 53	50 53	50 53	50 53		50 53	50 53	60	100	50
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	CBD				0	5	50	II		CBI				30		50	
l leenit-l	Adams	C	. Motro	30						Hospital				20/30		30/40	
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14gorig 55 100/11					, 100	4		Ngor				70/80		100			
										1 1901	·9			. 0, 00			_

1. Fare System in NMA

- ✓ Differs with distance
- ✓ Differs with time
- ✓ Differs with the weather, type of vehicle
- ✓ Differs with the day (weekday/weekend)



1. Fare System in NMA

■ Current Status of Bus/Matatu Fare in NMA

1. Fares:

- Bus/Matatu are widely used in Nairobi, with fares ranging from 30KES to 150KES, depending on the route and demand.
- Fares increase during peak hours or on high-demand routes, with price hikes of 20-30% common.
- Bus fares are regular but can still fluctuate based on demand and fuel prices.

2. Factors Influencing Fare Changes:

- Fuel Prices: Higher fuel costs lead to fare increases.
- Peak Demand: Fares rise during rush hours or special events.
- **Regulatory Issues**: Individual Matatu SACCOs and bus operators set fares, leading to occasional unregulated increases.

3.Impact on Commuters:

 Fare increases significantly impact low-income commuters, who may rely more on walking or informal transport as alternatives

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1. Fare System in NMA

■ NTSA (Amendment) Bill (20th June 2023)

An Act of Parliament to amend the NTSA Act

Authority make regulations prescribing

(c) The measures for ensuring that fares imposed are fair and reasonable.



For Users

Fare will get lower



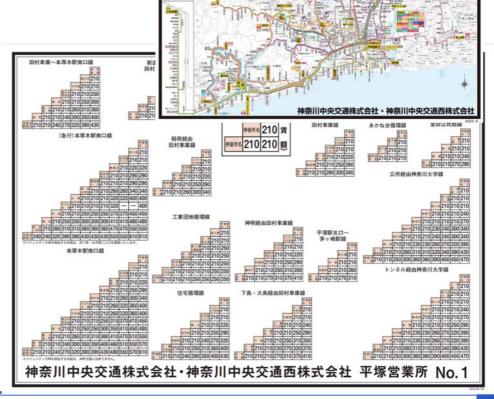
For Operators / Drivers

Fare will get higher

2. Fare System in Japan

2. Fare System in Japan

	Fare						
	Adult	Child					
IC	230円	115円					
Cash	230円	120円					



2. Fare System in Japan

Fixed Fare: Prepayment





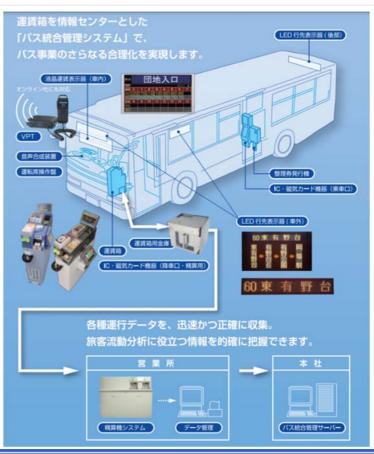
Zone Fare, Distance (Section) Fare : Postpaid Payment



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2. Fare System in Japan

Need to link IC card readers with voice synthesizers or fare indicators and fare data system that have data on bus stops.



2. Fare System in Japan

Revenue by Route

系統			44	10	C着券額(円)		チャージ	SF利用人員				
番号	駅別	系統	復	SF チケット	合計 (1人当り)	一日券	(円)	大人 小人	大割小割	合計		
A01		平塚駅~大通り~本厚木駅	往	409 0	409 409	0	0	1 0	0	1		
A01		本厚木駅~大通り~平塚駅	復	718 100		0	0	2	0	2		
(平	塚本厚:	木線 計)		1,127 100		0	0	3	0	3		

Revenue by Day/Month

日付	噻		IC着券	額(円)	#		S	F利用(人	.)			IC	を期利用	(人)	- 1	-	日券利用	(人)
111	B	SF	チケット	一日券	合計	大人	小人	大割	小割	合計	大人	小人	大割	小割	合計	大人	小人	合計
09/01	水	827,664	37,440	0	865,104	2,587	19	108	0	2,714	0	0	. 0	0	0	0	0	
09/02	木	712,301	20,420	0	732.721	2,086	17	116	0	2,219	0	0	0	0	0	0	0	
09/03	金	744,839	26,170	0	771,009	2,060	22	135	0	2.217	. 0	0	. 0	0	0	0	. 0	
09/04	±	264,339	4,100	2,130	270,569	681	- 1	52	0	734	0	0	0	0	0	12	0	
09/05	B	184,591	4,300	710	189,601	464	5	21	0	490	0	0	0	0	0	- 1	0	
09/06	月	684,898	28,490	0	713,388	2,075	34	134	0	2,243	0	0	0	0	0	0	0	
09/07	火	546,691	28,660	0	575,351	1,695	4	124	0	1,823	0	0	0	0	0	0	0	
09/08	水	469,166	32,330	0	501,496	1,510	6	105	0	1,621	0	. 0	- 0	0	0	0	0	
09/09	木	440,110	30,310	0	470,420	1,458	3	102	0	1,563	0	0	0	0	0	0	0	
09/10	金	438,116	30,360	0	468,476	1,413	8	110	- 1	1,532	0	.0	0	0	0	0	0	
09/11	±	171,662	6,980	710	179,352	534	5	63	0	602	0	0	0	0	0	2	0	
09/12	B	113,857	3,880	710	118,447	346	4	28	0	378	0	0	0	0	0	- 1	0	
09/13	月	365,974	25,590	0	391,564	1,325	0	62	0	1,387	0	0	0	0	0	0	. 0	
09/14	火	339,408	26,600	0	366,008	1,116	- 4	136	0	1,256	0	0	0	.0	0	0	0	

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006 上倉田団地	115	55	30	49	26		. 29	72	41	65	41	69	74	54	60	52	275	563		
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010 牛込町	139	45	51	62	45	.77	58	- 51	10		- 11	73	57	61	54	70	538	326	. 0	
011 上倉田	140	47	47	79	43	- 66	76	.41	50	29	d .	23	- 66	72	44	76	625	261		
012 八瀬	200	70	41	44	42	47	. 60	.40	21	42	16		. 16	73	.58	213	634	360	- 0	9 9
013 今井	54	51	62	65	71	56	68	70	61	27	38	14	- 115	22	54	83	637	159	. 0	. 7
014 模ケ谷真校前	45	27	44	57	46	60	90	66	52	50	. 60	31	15	2 1	17	49	633	66	- 0	- 6
015 白金ハイム前	37	24	29	24	25	16	. 11	26	27	20	22	21	10	29		20	329	20	0	3
016 広町駅	54	. 71	61	82	79	102	147	162	141	212	123	58	163	37	- 29	2	1531	- 0		15

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2. Fare System in Japan

■ Discount Fare

Child Fare	Half of Adult F	lalf of Adult Fare									
Commuter Pass	Commuter Student Child	Student 3 months 1 month: one-way fare x 2 x 30 days x @@%.									
Coupon Ticket		11 tickets sold for the price of 10, or at a certain percentage discount.									
One-day Pass	Ride as many that sold the ti		e within the area of operation of the bus operator								
Others	Pass for Elder	Fare for Disabled (Half of Adult Fare, Applicable for up to 1 person assisting) Pass for Elderly (Partial or full coverage by local government) Welfare Pass (Partial or full coverage by local government)									

3. Form of Fare

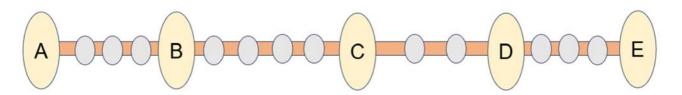
3. Form of Fare

■ Form of Fare for Route Bus

	Pros and Cons	Image in NMA
Fixed (Flat)	A Boarding ticket is not necessary, and one IC card validator is sufficient Easy for users to understand	The second secon
	Difficult to model consistent fares for short and long-distance travel	Narch Care Care Care Care Care Care Care Care
Zone	Fare structure is easy for users to understand	Home to the second of the seco
	Needs a boarding ticket machine or additional IC card validator and fare indicator Fares across zones may be more expensive	Part Service Control of the Control
Distance (Section)	Reasonable because users pay fares based on distance	O September of Control
	 Needs a boarding ticket machine or additional IC card validator and fare indicator Method of setting fares is more complicated 	OP CASES OF THE PROPERTY OF TH

3. Form of Fare

- Distance Based Fare
 - a. Fare Boundary Stop



Image

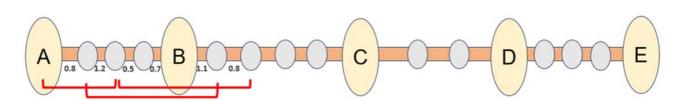
Distance	Distance (km)												
7.8	5.3	3.5	2.0	BSA									
5.8	3.3	1.5	BS B	100									
4.3	1.8	BS C	100	140									
2.5	BS D	100	140	190									
BS E	120	160	200	240									

Fare (JPY)

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3. Form of Fare

- **■** Distance Based Fare
 - **b.** Completely Distance Based Fare



Dist	ance	(km)	Fare (JPY)
0	~	2	100
2	~	3	130
3	~	4	150
4	~	5	180
5	~	6	200
6	~	7	220
7	~	8	250
8	~	9	270

4. Fare Calculation Method

4. Fare Calculation Method

■ Three Major Methods for Calculating Fare

Fully Distributed Cost Method

- Method in which the costs required to operate a business (fuel, equipment, operation, labor, etc.) are added to an appropriate profit margin to determine a rate that is appropriate with the cost of the business.
- This method is used for public services such as electricity, gas, and water. Since profit is included in the cost, companies have the advantage of being able to maintain public services without having to worry about losses.

Yardstick Method

- Method used to compare the efficiency of different operators.
- Calculates standard costs by adjusting the costs of operators for differences in business content and business environment.
- Used as an incentive regulation to encourage efficient business operations.
- Aim to extract the maximum effect from the minimum amount of data.

Price-Cap Regulation Method

- Set a predetermined maximum price and regulate only that amount.
- By regulating fares, operators are free to set fares at lower prices except for the upper limit.
- The purpose is to curb excessively high fares and protect users (consumers).

5. Fare Calculation

- Using Fully Distributed Cost Method -

5. Fare Calculation - FDC Method -

Overview of Transit Bus Fare System

Bus operator determines the fare rate based on

- Operating expenses (labor cost, fuel cost, vehicle repair cost, vehicle depreciation cost, etc.)
- Profit

The increase in revenue from transportation revenue and fare revision will be the same.

The fare rate (KES/km) is determined by the cost to transport 1 passenger for 1 km



Sample

Cost: 42,000 KES per day per bus Carries 300 passengers

Average Distance: 7 km / pax:

: 2,100 Passenger-km per day per bus

Increased revenue by fare revision



Average Fare Rate: 20 KES / km

This is why we need

- 1. Business Report that describes revenues and expenditure
- 2. OD data

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5. Fare Calculation - FDC Method -

Income and Expenditure (FY2018 : Kigali, Rwanda)

-							
	k	Total				Per vehicle	
Operator				Total			
No of Contract Vehicles	86	240	78	404			
Gross Revenue	4,780,795,930	12,491,457,816	3,474,634,315	20,746,888,061	55,590,650	52,047,741	44,546,59
Route income	4,533,038,855	12,491,457,816	3,443,828,244	20,468,324,915	52,709,754	52,047,741	44,151,64
Other income	247,757,075	CT INSTALLE	30,806,071	278,563,146	2,880,896	0	394,95
Direct Expenses	3,426,873,131	9,082,929,129	2,711,609,975	15,221,412,235	39,847,362	37,845,538	34,764,23
Fuel and lubricants	1,741,486,842	3,460,291,454	1,020,164,937	6,221,943,233	20,249,847	14,417,881	13,079,03
Maintenance	444,736,335	1,596,928,097	189,847,065	2,231,511,497	5,171,353	6,653,867	2,433,93
Tyres and tubes	160,674,289	320,836,147	102,114,805	583,625,241	1,868,306	1,336,817	1,309,16
Driver's salary (CTC)	424,765,258	1,184,698,335	217,776,540	1,827,240,133	4,939,131	4,936,243	2,792,00
Travel expenses drivers	0	0	88,218,300	88,218,300	0	0	1,131,00
Insuarance cost	69,223,644	154,800,000	61,665,683	285,689,327	804,926	645,000	790,58
Cleaning cost	0	0	34.578.500	34.578.500	0	0	443.31
RURA Fee (0.8%)	36.264.322	99.931.663	27,550,626	163.746.611	421,678	416.382	353.21
Internet Fee (10RWF)	177,405,890	544,910,190	121,618,070	843,934,150	2.062.859	2.270.459	1.559.20
AC Group Commission (5%)	217,781,718	597,327,381	166,110,509	981,219,608	2,532,346	2,488,864	2,129,62
Licensing and permits / Roadworthy	3.440.000	4.800,000	20,584,861	28.824.861	40,000	20.000	263.90
Rental of vehicles	0	780,800,110	507,268,975	1,288,069,085	0	3.253.334	6,503,44
Service vehicle running cost	0	16,455,752	16,420,104	32,875,856	0	68,566	210,51
Traffic fines	0	36.000.000	0	36.000.000	0	150.000	
Parking fees	143.870.833	264,990,000	131,139,000	539,999,833	1,672,917	1,104,125	1,681,20
Tracking	7,224,000	20,160,000	6.552.000	33.936.000	84.000	84.000	84.00
Gross Profit	1,353,922,799	3,408,528,687	763,024,340	5,525,475,826	15,743,288	14,202,203	9,782,36
Indirect Expenses	502,623,957	752,216,817	411,537,770	1,666,378,544	5,844,465	3,134,237	5,276,12
Ancillary costs	1.834.700	0	0	1,834,700	21,334	0	0,210,12
Audit fees	12.828.150	7,000,000	3.000.000	22,828,150	149,165	29.167	38.46
Bank charges	3.070.224	180.000	1,425,600	4.675.824	35.700	750	18.27
Cleaning materials	18,575,040	408,600,000	0	427,175,040	215,989	1,702,500	10,21
Electricity and water	3.301.164	0	2.159.700	5.460.864	38.386	0	27.68
Employee cost -Fixed cost	220,210,832	243,176,817	255,359,904	718,747,553	2.560.591	1.013.237	3,273,84
Fines	25.911.600	245,176,017	0	25.911.600	301.298	0	5,215,0
General expense	2.162.400	4.500.000	138.917.565	145,579,965	25,144	18.750	1,780.99
Insurance (Other)	91.836.000	4,500,000	0 0	91.836.000	1.067.860	10,750	1,700,93
Legal fees / Consulting	6,000,000	0	4,400,000	10.400.000	69.767	ů.	56.41
Maintenance (Equipment etc.)	0,000,000	ŏ	795,000	795,000	05,707	ŏ	10.19
Printing and stationery	11,128,656	6.960.000	424,600	18,513,256	129.403	29.000	5.44
Rental and lease expense	7,951,967	64,800,000	424,000	72,751,967	92.465	270,000	3,44
Security	75.216.000	4,320,000	0	79.536.000	874.605	18,000	
	13,200,000	4,320,000	1,700,000	14,900,000	153,488	18,000	21.79
Subscriptions							37.10
Telephone expense Uniform	3,947,220 5,450,004	2,880,000	2,894,401	9,721,621	45,898	12,000	37,10 5.91
		9,800,000	461,000	15,711,004	63,372	40,833	
Operation Profit	851,298,842	2,656,311,870	351,486,570	3,859,097,282	9,898,824	11,067,966	4,506,23
Depreciation			348,319,658				4,465,63
Finance charges	765.492.000	2.731.058.585	188,495,841	4,033,366,084	8.901.070	11,379,411	2,416,61
Vehicle instalments		-11-11-11-11-11	0	422122222			
Service Vehicle Installments			0				
Net Profit / Loss before TAX	85,806,842	▲ 74,746,715	▲ 185,328,929	▲ 174,268,802	997,754	▲ 311,445	▲ 2,376,01

5. Fare Calculation - FDC Method -

■ Fully Distributed Cost (FDC) Method

Basic steps for fare setting by FDC Method

Step1 Cost Calculation

- Operating expenses (labour, fuel, depreciation, taxes and dues etc.)
- Business remuneration (non-operating expenses (finance costs) and Reasonable Profit)

Step2 Fare Rate Calculation

Unit Cost per kilometre / **Average Ridership Density** = Average Fare Rate per km.

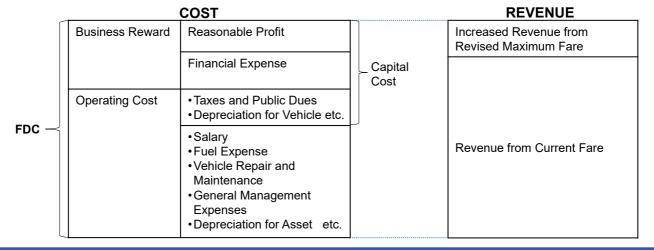
Step3
Fare Settings

Fare = Fare Rate * Distance * Discount for Long Distance Trips

5. Fare Calculation - FDC Method -

■ FDC Framework

- To obtain FDC, which is the operating costs to run the bus business, a reasonable business reward must be estimated. Then, the fare level whose total revenue does not exceed the FDC is determined.
- · Required Information:
 - Operating costs from the financial statements
 - > Rational logic for calculating Reasonable Profit and Financial Expense



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5. Fare Calculation - FDC Method -

Necessary Documents

- a. Revenue by each route
- b. OD data (number of passengers)
- c. Performance Report

			0	perating Rou	te					Oper	rating Dia	agram *5		Annua	l Transport	Performance	(From 1st	April of Last	Year to 31	st March)	
					Operatin	g Express	way / Highway				Last Travel Numbe Operating		Ridership				Average		Fare	Remar	
Route Numbe r ^{*2}	Origin ^{⁺3}	+0	Destin	Route Length (km) ^{†3}	Name	Section	Length (km)	Fare (RWF)	Frist Trip	Last Trip	Travel Time (min)		Operating Mileage (km)		Seasonal- pass (pax)	Average Trip Length (km) *7		Transport	Revenue (000 RWF)	Revenue / Operating Mileage (RWF/ km)	ks ^{*9}
									0								0				
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									0								0				
									R								0				
									0												
									R								0				
									0												
									R								0				
Total				0.0			0.0					0	0	0	0	0.0	0		0	0	

5. Fare Calculation - FDC Method -

■ Average Fare Rate per Kilometer

 Average Fare Rate is the theoretical foundation of compensation for transport services for passengers = Unit Cost per Operating 1 km

Estimation Method	FDC	=	Total Cost of the Business including Profit
Moured	FDC per km	=	FDC / Operation km (excluding Dead-Mileage Kilometer)
	Ridership Density	=	Passenger – km / Operation km ≒ Average Occupancy Rate
	Average Fare Rate	=	FDC per km / Ridership Density
		=	FDC per km / (Passenger – km / Operation km)
		=	(FDC / Operation km) / (Passenger – km / Operation km)
		=	FDC / Passenger - km

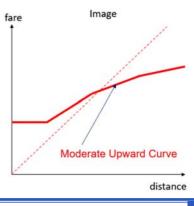
5. Fare Calculation - FDC Method -

■ Standard Fare Rate

- Based on the average wage rate, transport costs are recognized separately below and the fare per kilometer is calculated.
 - Fixed costs per ride: fixed labor costs such as basic wages, vehicle depreciation, etc.
 - Variable costs per distance: metered and hourly labor costs (e.g. overtime), fuel costs, repair costs
- In Japan, Long-distance diminishing is applied. With short distances, it is more expensive and vice-versa.

2km	5km	8km	11km		
× 2	× 1	× 0.9	×0.8		

Distance (km)	Standard Fare Rate (25JPY)	Calculation Formula
2	100	(2 km * 25 * 2) = A
3	125	A + (1 km * 25 * 1)
4	150	A + (2km * 25 * 1)
5	175	A + (3km * 25 * 1) = B
6	200	B + (1km * 25 * 0.9)
7	220	B + (2km * 25 * 0.9)
8	245	B + (3km * 25 * 0.9) = C
9	265	C + (1km * 25 * 0.8)
10	205	C - /21 * 25 * 0.8)



■ Image of Long Distance Diminishing

SF: Standard Fare Rate

Travel Distance	0 ~ 2 km	2 ~ 10 km	10 ~ 20 km	20 km ~	TOTAL	Fare per km
6 km	SF × 2 × 2	SF × 1 × 4			SF × 8.0	× 1.33
15 km	SF × 2 × 2	SF × 1 × 8	SF × 0.9 × 5		SF × 16.5	× 1.1
25 km	SF × 2 × 2	SF × 1 × 8	SF × 0.9 × 10	SF × 0.8 × 5	SF × 25.0	× 1.0

The longer you ride, The lower the fare per km

- Costs for short distances (in this case, 2 km) is equivalent to the fixed cost. This
 fixed cost shall be charged to passengers travelling less than 2 km.
- The minimum fare shall more than the fare charged for the 2 km travel. If the Standard Fare Rate is 10 KSH, 40 KSH shall be the minimum fare.

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5. Fare Calculation - FDC Method -

■ Standard Fare Rate

The typical profit to be earned by private operators is the percentage shown in the table below, depending on whether government support is available and the type of contract with the government.

Business Model	Typical Profit Margin	Remarks			
Public Transport (Contracted Operations)	3–7%	Publicly subsidized; lower financial risk.			
Competitive/Open Market (e.g., developing countries)	8–15%	Higher risk and fewer subsidies.			
PPP (Public-Private Partnerships)	5–10%	Often linked to performance- based contracts.			

Key Determining Factors

Risk Allocation

Higher margins may be justified if operators bear full revenue or investment risk.

Government Subsidy

Where subsidies are available, margins tend to be lower to maintain public service focus.

- Contract Type
- Gross-Cost Contract (operator paid by govt): ~3–5%
- Net-Cost Contract (operator bears fare risk): ~8-15%
- Economic and Regulatory Environment

 Margins vary by country and regulatory strictness.
- Diversified Revenue Sources

Advertising, station retail, and land development may supplement income, reducing reliance on fare margin.

To be profitable as a private business in Nairobi without government support, a rate of about 15% is considered appropriate, taking into account the risk involved.

6. Fare Calculation- Considering Social Impact -

6. Fare Calculation - Social Impact -

■ Is Current Bus/Matatu fare Reasonable for Citizens?

The ideal public transportation fare is:

Public transportation should be affordable for all socioeconomic groups, especially for low-income families who rely heavily on these services. Ideally, fares should not exceed a certain percentage of household income, typically around **10%**.

Assuming that the household uses public transportation as follows;

- Two members of the family commute to work or school every day.
- Average fare: 59 KES one way (100 KES for a round trip)
- Daily transportation cost for two persons
 100 x 2 = 200 KES
- Monthly Transportation fee (22 days work and attendance in school)
 200 x 22 = 4.400 KES
- Required household income: approximately more than 44,000 KES
- 44,000 KES is between the 70% and 80 % of households(72.4 percentile)

Over 70% of Nairobi households face financial constrains in accessing public transport.



This results in:

- High rates of walking (over 40% of the population)
- Limited access to education, healthcare, and employment opportunities
- Worsening urban transport inequality

High income group, 3.5	
group, 25.6	Low income group, 70.9

Classfication	Houshold Income (Ksh/month)
Low income group	46,355 or less
Middle income group	46,356-184,394
High income group	184,395-more

(KNBS)

6. Fare Calculation - Social Impact -

Key Factors Influencing Public Transport Fare Setting

When setting fares for public transportation, the table below shows some of the factors that are taken into account.

Category	Key Factors	Notes
Economic	Operation cost, subsidies, supply & demand	 ✓ Including vehicle procurement, maintenance, fuel, staff wages and facility management ✓ Costs increase with service coverage and frequency
Social	Income levels, equity, accessibility	 ✓ Transport should cost no more than 10-15% of monthly income ✓ Concessions or exemptions may apply to low-income or vulnerable groups
Policy-related	Urban planning, transport policy, regulation	 ✓ Whether the focus is on profitability or equitable mobility ✓ Links with urban congestion reduction or environmental goals
Market-based	Competition, alternative modes	 ✓ Presence or alternative modes like taxis, boda-boda, ride-sharing, etc. ✓ Fare hikes may reduce ridership and potentially lower revenue
Service- related	Quality, reliability, user satisfaction	 ✓ Punctuality, safety, cleanliness, customer service, etc. ✓ High service quality can justify slightly higher fares

6. Fare Calculation - Social Impact -

■ Three Fundamental Principals

Fares are generally determined based on the following three core principles:

a. Cost-Based Pricing (Full Cost Recovery)

- Fares are calculated based on the total operating and capital costs required to provide the service.
- Typical cost components include:
 - Vehicle procurement and depreciation/Fuel or electricity costs/Staff wages
 - Maintenance and insurance/ Overhead and financing costs (e.g., interest)

b. Affordability / Ability to Pay

- Emphasizes the financial capacity of users, especially lower-income populations.
- A common benchmark for transport should cost no more than 10–15% of monthly income.
- If calculated fares are too high:
 - Government subsidies may bridge the gap
 - Discounted fares, travel passes, or exemptions may be introduced

c. Sustainability & Profitability

This approach ensures that operators, especially private ones, can secure a reasonable profit for continued service provision.

- Fares are set to cover operating costs and allow for an expected profit margin.
- In private operations, profit margins are calculated and reflected in the fare structure.
- This is critical to ensuring the long-term sustainability of public transport services.

Profit Calculation Formula

Fare=(Total Costs × (1+Profit Margin)) / Estimated Passengers

6. Fare Calculation - Social Impact -

Transport Affordability Ratio

What is the Transport Affordability Ratio?

The Transport Affordability Ratio refers to the percentage of a household's monthly disposable income spent on public transportation. It is used globally to assess how financially accessible public transport is, especially for low-income groups.

General Formula:

Affordability Ratio (%) = (Monthly Public Transport Cost ÷ Monthly Disposable Income) × 100

International Standards and Benchmarks

Source	Recommendation
UN-Habitat	Public transport costs should ideally be less than 15% of household income
World Bank	Recommends a threshold of 5-10% for transport affordability
Social Welfare Norms	Some policies suggest a target of 3-5% for low-income household.

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6. Fare Calculation - Social Impact -

■ Sample of Transport Affordability Ratio by Country/City

Country/City	Income Group	Monthly Transport Cost	Monthly Income (EST.)	Affordability Ratio	Notes
Tokyo, Japan	Average household	¥12,000	¥400,000	3.0%	Based on commuter pass (within Tokyo)
New York City	Low-income	\$132	\$1,200	10.8%	MetroCard full fare
Germany	Low to average income	€49	€3,000	2.6%	Based on "Deutsuchlandticket"
Paris, France	Average Income	€84	€3,000	2.0%	Navigo monthly pass
Nairobi, Kenya	Urban laborer	KES3,500	KES20,000	17.5%	High dependency of Matatu, price volatility
Dar es Salaam	Informal worker	TZS 25,000	TZS170,000	15%	Including BRT system (DART)
South Africa	Low income	ZAR300	ZAR1,500	20%	High transport burden reported

3/

6. Fare Calculation - Social Impact -

■ Key Criteria for Selecting a Public Transport Fare Structure

Criterion	Description and Influence	Typical Suitable Fare Structures
Urban Size and Structure	Compact city vs. sprawling metro area; presence of suburban commuting	Small cities: Flat fare Large metros: Distance/Zone
Complexity of the Transport Network	Single operator vs. multiple lines and agencies	Simple: Flat fare Complex: Distance-based or Zonal
Cost Recovery vs. Equity	Balancing financial sustainability with fare affordability for all social groups	Cost-focused: Distance-based Equity-focused: Flat + subsidies
Income Distribution & Affordability	High share of low-income riders requires cautious fare setting	Income-based fares, discount schemes
Policy Objectives	E.g., reduce traffic congestion, promote public transport use, support disadvantaged groups	Flexible models (e.g. peak pricing, integrated zones)
Technical Infrastructure	Availability of systems like GPS, IC cards, automated fare collection	With tech: Distance-based or time-based pricing possible
User Convenience and Understanding	Simplicity encourages use; complex fares may discourage riders	Flat fare, stored-value cards
Fare Adjustment Flexibility	Ability to adapt quickly to policy or cost changes	Flexible: Zone system, smart fare systems

When designing a fare system, decisions are made from a variety of perspectives. However, after simulating specific demand and supply, a system must be chosen that is acceptable to both users and operators.

6. Fare Calculation - Social Impact -

■ Public Transport Fare System by City Size

City Size (Population Range)	Common Fare Systems	Reasons for Adoption & Operational Points	Examples (Cities/Transport)	
Small Cities/Regional Areas Up to 500,000	Flat Fare (common in bus services) Tickets or paper-based passes	 Simple routes with a desire for easy fare calculation Low costs for onboard equipment and avoiding complex systems 	Toyama Community Bus (Japan)Tallinn Bus (Estonia: free for residents)	
Medium-Sized Cities 500,000–2 million	Flat Fare + Time-based Fare (if there are transfers) Partly Distance-based Fare (BRT, metro)	- Bus + LRT/BRT systems coexist, increasing transfer demand - Smart card adoption makes time-based or distance-based fares viable	 Zurich ZVV (Switzerland): 90-minute valid tickets Portland TriMet (USA): 2.5-hour ticket 	
Large Urban Areas 2 million–10 million	In addition, the introd increase convenience	r distance-based fare system shal duction of smart cards and mobile se and efficiency. It is important to accessible transport system for u	payment systems will combine these systems	
Mega Cities Over 10 million	Distance-based Fare (per km) + Time-based transfer discounts Index-based fare or Peak pricing differentiation	 Long-distance commuting necessitates accurate distance-based pricing To encourage off-peak commuting, discounts are integrated Big data for demand-based dynamic pricing 	Beijing & Shanghai Metro (China): tiered fares for 3-10 km Singapore LTA: Distance- based with off-peak discount Seoul Metropolitan Area: 1,250 KRW basic fare + distance add-ons	

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6. Fare Calculation - Social Impact -

■ Government's Involvement in Public Transport Fare System

The government's involvement in public transport fare systems generally includes:

- **1.Regulation of Fares**: The government may regulate fares to ensure they are affordable, particularly for low-income groups, and to prevent unfair pricing.
- **2.Subsidies and Financial Support**: Governments often provide subsidies or financial assistance to transport operators to help keep fares low and support services, especially on less profitable routes.
- **3.Fare Structures**: The government designs fare structures (e.g., flat rates, distance-based, or zone-based pricing) to ensure efficiency and fairness in fare collection.
- **4.Monitoring and Transparency**: Ensuring fare changes are transparent and justifiable, and monitoring is done to prevent price manipulation or exploitation.
- **5.Discount Programs**: Governments often implement discount fare programs for certain groups, such as students, seniors, and people with disabilities.
- **6.Encouraging Technological Innovation**: Governments may encourage the use of advanced fare collection technologies, such as contactless payments, to improve efficiency and user experience.

In short, the government ensures that public transport fares are fair, affordable, and efficient while maintaining the financial sustainability of transport services.

7. Fare Setting during Pilot Project

7. Fare Setting during Pilot Project

■ Fare Chart from Survey in Route 111

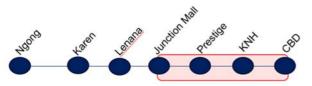
	From	То	Ope		5:00 7:59	8:00 8:59	9:00 9:59	10:00 10:59	11:00 13:59	14:00 15:29	15:30 16:59	17:00 19:59	20:00 20:59	21:00 23:59	Average	Highest L	owest
			K-Trans		80	80	80	80	100	100	100		80	80			
			Super M	etro	60	70	70	70	80	100	100		100	80			
			Metro Tr	ans	70	80	80	80	80	80	100	100	100				
	CBD	Ngong	Enabled		75	75	75	70	70	70	100	100	100	100			
CBD			NTVRS		75	75	75	100	100	100	125	125	125	125			
Nassa			Nangkis		75	75	75	100	100	100	125	125	125	125			
Ngong	Avera	ge			73	76	76	83	88	92	108	108	105	102	91	125	60
			K-Trans		100	100	80	80	70	70	70	70	70	70			
	Ngong	CBD	Super M	etro	100	100	70	70	70	70	70	50	50	50			
			Enabled		100	100	80	70	60	60	50	50	50	50			
	Avera	ge			100	100	77	73	67	67	63	57	57	57	72	100	50
			K-Trans		70	70	70	70	80	80	80		80	80			
CBD	CBD	Karen	Super M	etro	60	60	60	70	80	100	100	100	100	80			
I			Enabled					60	60	60	100	100	100	100			
Karen	Avera	ge			65	65	65	67	73	80	93	93	93	87	78	100	65
	Karen	CBD	K-Trans		70	70	60	60	60	60	60	60	60	60	62	70	60
			K-Trans		70	70	70	70	80	80	80	0 80	80				
CBD	CBD L		Super M	etro	60	70	70	70	80	100	100	100	100	80			
CBD		Lenana	Super M	etro	60	50	50	70	80	100	100	100	100	80			
Lenana			Metro Tr	ans	50	60	60	60	80	80	100	100	100				
Lenana			Enabled					50	50	50	100	100	100	100			
	Avera	ge			60	63	63	64	74	82	96	96	96	85	78	100	50
Nasas			K-Trans		50	50	40	40	40	40	40		40				
Ngong	Ngong	Karen Su		etro	50	50	30	30	30	30	30		30				
Karen			Enabled		50	50	50	30	30	30	30	30	30	30			
Raien	Avera	ge			50	50	40	33	33	33	33		33	33	37	50	30
Naona			K-Trans		80	80	60	60	60	60	60	60	60	60			
Ngong	Ngong	Lenana	Super M		70	70	50	50	50	50	50		50	50			
Lenana			Enabled		100	100	80	50	50	50	50		50				
Lonaria	Avera	ge			83	83	63	53	53	53	53	53	53		60	100	50
from	to			Off pe	ak		peak	fro	om	to				Off peak	. 0	n peak	
	CBD			20		5	50			CBE)			30		50	
	Adams			30				II		Hospi	ital			20/30		30/40	
Hospital	Lenana	Supe	r Metro	50				Pre	stige	Juncti	ion	Super M	etro	20		30/40	
				80		100	/150		-3-	Kare			-	50		70	
	Ngong			80		100	7 100	4		Ngor				70/80		100	
										ingoi	19			70/00		100	

7. Fare Setting during Pilot Project

■ Idea of Long Distance Diminishing

		5km	10km	15km	20km	25km
Standard Fare Rate	**ksh	×2.0	×1.0	×0.9	×0.8	×0.7
		5km	10km	15km	20km	25km
Standard Fare Rate	**ksh	×2.0	×1.0	×0.9	×0.8	×0.7
	15ksh	30	50	60	70	80
		15ksh * 2.0		1		
perational Cost	in per 5km	(15ksh	* 2.0) + (1	5ksh * 1.0)	+ (15ksh *	0.9)

■ Fare Surcharge for Specified Section



A flat surcharge of 20KES was applied for the users in the city area.

- Since no business report was available from the bus operators, standard costs were estimated from the current fare chart.
- As a result, assuming a fare rate of 3 KSH per km, the fares for every 5 km are shown on the left.
- NTSA instructed our team in advance that the fare table for the Pilot Project should not be lower than the existing Route 111 fare rate.
- Since the calculation of this table resulted in lower fares in some sections, a surcharge was introduced in certain sections to avoid lower fares than the existing ones.

7. Fare Setting during Pilot Project

■ Calculation by Distance-based and Long Distance Diminishing

		5km	10km	15km	20km	25km					000
Standard Fare Rate	**ksh	×2.0	×1.0	×0.9	×0.8	×0.7					CBD
	15ksh	30	50	60	70	80				National Hopital	1.87 30
		♣								2.09	3.95
		15ksh * 2.0	1	1					Prestige	30	30
		(15ks	ksh * 2.0) + (15ksh * 1.0) + (15ksh * 0.9)					2.66	4.74	6.61	
								Junction Mall	30	30	50
								3.40	6.06	8.14	10.01
							Lenana	30	50	50	60
							3.34	6.74	9.40	11.48	13.35
						Karen	30	50	50	60	60
						8.11	11.45	14.85	17.50	19.59	21.45
					Ngong	50	60	60	70	70	80

7. Fare Setting during Pilot Project

■ Calculation by Distance-based and Long Distance Diminishing and Fare Surcharge for Specified Section _____

						CBD
A flat surcharge is estimated as 20KES.					National Hopital	1.87 50
					2.09	3.95
It was applied for bus stops between CBD a		Prestige	50	50		
Junction Mall.			2.66	4.74	6.61	
Junction Mail.			Junction Mall	50	50	70
			3.40	6.06	8.14	10.01
		Lenana	30	70	70	80
		3.34	6.74	9.40	11.48	13.35
	Karen	30	50	70	80	80
	8.11	11.45	14.85	17.50	19.59	21.45
Ngong	50	60	60	90	90	100

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8. Other Consideration

8. Other Consideration

■ How to Secure the Profit as a Private Company

Who will bear this loss in terms of sustainable public transportation?

Operator

- Cost Reduction
- Compensation from Other Businesses

Government

Subsidies

Users

Increased Fare

GAP between bus business management and fare policy

Rising labor costs and fuel costs, and new capital investment (such as vehicle and related facility renewal, safety measures etc.) must also be considered.



Even though buses are operated by "private" companies, it is difficult for operators to pursue large profits because they are "public" transportation.

8. Other Consideration

Other Businesses by Bus Operators in Japan

Passenger Service

- Route Bus Business
- Charter Bus Business
- Taxi business

Real Estate

- Condominium Business
- Brokerage
- Leasing

Automobiles Sales

- Private Car Sales Business
- Bus and Truck Sales Business

Other Business

- Sports and Leisure Business
- Distribution Business
- · Advertising Business
- Resource Recycling Business
- · Automobile Maintenance Business
- Information Service Business
- Building Management Service
- Hotel Business
- Food and Beverage Service
- Commercial Vehicle Bodywork Business
- Outsourced Accounting Services

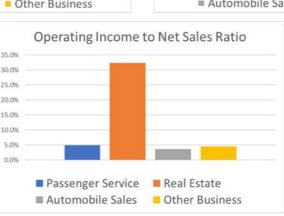
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8. Other Consideration

■ Income and Expenditure of one of the Bus Companies in Japan







FY2024

8. Other Consideration

■ Operation as a "Public" Transportation

- When a single operator services a specific area, it is necessary to ensure that local residents experience "Public" transportation services from the operator.
- Therefore, the operator should not only operate profitable routes but also routes with few users and routes in areas with many people who have difficulty traveling, which is not profitable route as a business.
- As an operator, it is important to understand the income and expenditure of each bus route and overall income and expenditure for all routes and ensure local transportation.
- This will make it possible to calculate optimal bus fares.

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Thank you for your attention

Chapter 6

Instruction Materials to be Prepared for Implementing the Mandates

Instruction Materials to be Prepared for Implementing the Mandates

Working Group 1

April 18, 2024

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Introduction

This document presents a series of one-page summaries outlining the scope and key points of proposed instructional materials necessary for implementing the mandates of Executive Order 2017. These summaries are crafted to facilitate initial discussions within Working Group 1, setting the stage for the comprehensive development of full-scale guidelines and manuals in the future. Each summary addresses distinct aspects of urban mobility and public transport enhancements, from strategic planning and infrastructure development to environmental assessments and financial strategies. These preliminary documents are designed to provide a foundational understanding and framework to aid in the structured development of detailed guidelines that will comprehensively support the transformation and effective management of public transport systems as mandated by the Executive Order.

1 Public Transport Strategy and Urban Mobility Planning Guide

The "Public Transport Strategy and Urban Mobility Planning Guide" to be developed under NaMATA as detailed in the Executive Order 2017 addresses clauses (a) and (b) of the Authority's functions.

1-1. (a) Develop a sustainable integrated public transport strategy for the Metropolitan Area

Content Description:

This section of the guide provides a comprehensive framework for creating a cohesive and sustainable public transport strategy across the Nairobi Metropolitan Area. It focuses on developing an integrated approach that combines various modes of transport to create a seamless and efficient system. The strategy aims to enhance accessibility, reduce congestion, and improve environmental outcomes by encouraging the use of public and non-motorized transport.

Specific Aspects Covered:

System Integration: Guidelines on integrating different transport modes, such as buses, trains, and

non-motorized paths, into a unified public transport system.

Sustainability Practices: Strategies for incorporating sustainability into public transport operations,

including the use of clean energy, promoting electric buses, and improving the

energy efficiency of transport facilities.

Funding and Financing: Exploration of sustainable funding and financing options for public transport

projects, including public-private partnerships, government subsidies, and

international funding sources.

Policy Development: Development of supportive policies that encourage public transport use and

streamline the regulatory environment for easier implementation of transport

projects.

1-2. (b) Develop a sustainable urban mobility plan for the Metropolitan Area derived from the strategy

Content Description:

This section of the guide details the process of translating the overarching public transport strategy into a specific urban mobility plan. This plan includes detailed actions, project implementations, and timelines designed to improve mobility across the metropolitan area, particularly focusing on reducing travel times, increasing safety, and enhancing the user experience.

Specific Aspects Covered:

Project Planning and Management: Detailed plans for the execution of transport projects that align with the strategic

goals, including timeline management, resource allocation, and stakeholder

coordination.

User-Centric Design: Emphasis on designing transport systems that prioritize the needs of the users,

including accessibility for the disabled, elderly, and other vulnerable groups.

Technology Integration: Incorporation of advanced technologies such as real-time passenger information

systems, mobile ticketing solutions, and intelligent transportation systems to

enhance operational efficiency and passenger convenience.

Monitoring and Evaluation: Frameworks for monitoring the implementation of the urban mobility plan and

evaluating its impact on urban transport metrics and user satisfaction.

The "Public Transport Strategy and Urban Mobility Planning Guide" is an essential tool for NaMATA, providing both strategic and operational guidance to improve public transport and urban mobility in a coordinated, sustainable, and user-focused manner. By following the guidelines, NaMATA can ensure that the transport infrastructure and services effectively meet the current and future needs of the Nairobi Metropolitan Area.

2 Integrated Mass Rapid Transit System Planning Guide

The "Integrated Mass Rapid Transit System Planning Guide" to be crafted under NaMATA as stipulated in the Executive Order 2017 is meticulously designed to cater to clauses (c) and (d) of the Authority's functions.

2-1. (c) Formulate and oversee the development of a sustainable, evidentially based, Integrated Mass Rapid Transit System Strategy.

Content Description:

This section of the guide provides a comprehensive framework for formulating a strategic approach to developing an Integrated Mass Rapid Transit (MRT) System in the Nairobi Metropolitan Area. It emphasizes creating a system that is based on robust evidence and sustainable practices, aiming to enhance urban mobility, reduce congestion, and minimize environmental impacts.

Specific Aspects Covered:

Strategic Planning: Detailed strategies for the planning and conceptualization of the MRT system,

including feasibility studies, route planning, and demand analysis.

Sustainability Considerations: Incorporation of sustainable development principles in the design and operation

of the MRT system, such as energy-efficient technologies, use of renewable

energy sources, and green building standards for infrastructure.

Data Collection and Analysis: Guidelines for collecting and analyzing data necessary for evidence-based

planning, including passenger flow, urban development patterns, and

environmental impact assessments.

Stakeholder Engagement: Strategies for engaging a broad range of stakeholders, including government

agencies, private sector partners, and the community, to gather insights and

build support for the MRT project.

2-2. (d) Plan, regulate, and coordinate the supply of adequate and effective Mass Rapid Transit System;

Content Description:

This section details the operational aspects of planning, regulating, and coordinating the MRT system to ensure it meets the transportation needs of the metropolitan area effectively and efficiently.

Specific Aspects Covered:

Regulatory Framework: Development of a comprehensive regulatory framework that governs the

operation, maintenance, and safety standards of the MRT system.

Coordination Mechanisms: Establishment of coordination mechanisms among various entities involved in

the MRT system to ensure seamless operations and maintenance. This includes coordination between different transport modes and integration with other

public transport systems.

Infrastructure Development: Guidelines for the development of MRT infrastructure, including stations,

tracks, and related facilities, ensuring they are designed to handle projected

passenger volumes and provide accessibility.

Quality and Performance Standards: Setting high standards for service quality and performance to ensure reliability,

safety, and customer satisfaction in the MRT service delivery.

The "Integrated Mass Rapid Transit System Planning Guide" serves as a critical tool for NaMATA, providing detailed guidance on both strategic planning and operational execution for developing and managing an MRT system. By employing the methodologies outlined in this guide, NaMATA can ensure that the MRT system not only supports the urban mobility needs of the Nairobi Metropolitan Area but does so in a manner that is sustainable, efficient, and aligned with global best practices.

3 Public-Private Partnerships in Mass Transit Development Guide

The "Public-Private Partnerships in Mass Transit Development Guide" as it pertains to NaMATA under the Executive Order 2017 is directly associated with clause (f) of the Authority's functions: (f) Provide an enabling environment for orderly and structured development of the mass transit system, including both bus rapid transit and commuter rail within the Metropolitan Area.

Content Description:

This section of the guide focuses on leveraging public-private partnerships (PPPs) to develop and enhance mass transit systems like bus rapid transit (BRT) and commuter rail services. The guide would elaborate on creating a conducive environment that encourages and facilitates private sector involvement in public transit projects. This includes outlining the regulatory frameworks, partnership models, and collaboration strategies necessary to attract private investment and expertise.

Specific Aspects Covered:

Partnership Models: Description of various models of PPPs, including BOT, build-own-operate-

transfer (BOOT), and joint venture agreements that might be suitable for transit

projects.

Risk Management: Guidance on identifying, managing, and sharing risks associated with PPP

projects in mass transit, ensuring that risks are adequately allocated between

public and private entities.

Financial Structuring: Detailed frameworks for the financial arrangements, including funding

mechanisms, revenue sharing models, and incentives for private investors to

ensure the financial viability of the projects.

Contractual Obligations: Standard contracts and procurement processes for PPPs, including performance

benchmarks, compliance requirements, and mechanisms for dispute resolution.

Stakeholder Engagement: Strategies for engaging stakeholders, including local communities, government

agencies, and private investors, to ensure transparency and build trust among

all parties involved.

Monitoring and Evaluation: Systems for the ongoing monitoring and evaluation of PPP projects to ensure

they meet agreed-upon timelines, budgets, and service quality standards.

The "Public-Private Partnerships in Mass Transit Development Guide" is designed to facilitate the strategic involvement of the private sector in developing robust, efficient, and sustainable mass transit solutions in the Nairobi

Metropolitan Area. By providing detailed guidance on setting up and managing PPPs, the guide helps NaMATA and other stakeholders maximize the benefits of private sector participation while minimizing potential challenges and risks. This resource is crucial for ensuring that PPP initiatives are implemented effectively and contribute positively to the region's overall transport infrastructure development goals.

4 Land Acquisition and Infrastructure Development Policy Guide for Transit Systems

The "Land Acquisition and Infrastructure Development Policy Guide for Transit Systems" associated with NaMATA under the Executive Order 2017 focuses on clause (f) from the functions of the Authority: (f) Provide an enabling environment for orderly and structured development of the mass transit system, including both bus rapid transit and commuter rail within the Metropolitan Area.

Content Description:

This guide focuses on the critical aspects of land acquisition and infrastructure development for transit systems within the Nairobi Metropolitan Area. It aims to provide a structured and legally sound approach to procuring land necessary for constructing transit infrastructure like roads, railways, stations, and ancillary facilities. The guide would set out policies and procedures for transparent, fair, and efficient land acquisition processes while ensuring minimal disruption to affected communities and stakeholders.

Specific Aspects Covered:

Policy Framework: Establishment of clear policy guidelines that govern land acquisition,

emphasizing compliance with local and national laws, respect for property

rights, and consideration for social and environmental impacts.

Compensation and Resettlement: Detailed procedures for compensating displaced individuals or businesses,

including resettlement strategies that ensure livelihood restoration and socio-

economic stability for affected communities.

Community Engagement: Strategies for engaging with local communities and stakeholders throughout the

land acquisition process to ensure transparency, gain public trust, and address

any concerns or grievances.

Infrastructure Planning: Guidelines for the planning and development of infrastructure projects,

ensuring they align with broader urban development goals and efficiently

integrate with existing transportation networks.

Legal and Regulatory Compliance: Information on navigating the legal and regulatory framework associated with

land acquisition, including necessary permits, environmental clearances, and

adherence to public policy.

Monitoring and Evaluation: Mechanisms for monitoring the execution of land acquisition and infrastructure

projects to ensure they adhere to policy guidelines, timelines, and budgets while

achieving intended outcomes.

The "Land Acquisition and Infrastructure Development Policy Guide for Transit Systems" shall be designed to support NaMATA's goal of providing an enabling environment for the development of mass transit systems. By offering comprehensive guidance on acquiring land and developing transit infrastructure, the guide ensures that these critical activities are conducted in a manner that is both sustainable and conducive to the long-term growth and efficiency of the metropolitan transport system. This guide serves as an essential tool for policymakers, urban planners, and project managers involved in the expansion and enhancement of public transit facilities in the region.

5 Transport Infrastructure Development and Coordination Framework

The "Transport Infrastructure Development and Coordination Framework" connected to NaMATA as detailed in the Executive Order 2017 is directly associated with clause (g) of the Authority's functions: (g) Coordinate with other government agencies and other parties for the development and operation of transport infrastructure, facilities, and

works necessary for the discharge of the functions of the Authority;

Content Description:

This framework serves as a guideline for the coordination and development of transport infrastructure within the Nairobi Metropolitan Area. It emphasizes the collaborative efforts required between NaMATA and various government agencies, private sector partners, and other relevant stakeholders. The framework outlines the necessary steps and protocols for ensuring that all parties work together effectively to build, maintain, and operate integrated transport systems that are sustainable, efficient, and responsive to the needs of the metropolitan population.

Specific Aspects Covered:

Collaborative Planning: Guidelines for joint planning sessions with various stakeholders, including local

governments, transportation agencies, and private sector entities to ensure that all transport projects are well-integrated and support the region's overall

development goals.

Resource Sharing: Strategies for sharing resources, such as funding, technology, and human

resources, among different agencies to optimize the use of public assets and

reduce redundancy.

Project Coordination: Mechanisms for the coordination of multiple projects across different agencies

to avoid overlaps, minimize disruptions, and maximize efficiency during

construction and operation.

Regulatory Alignment: Ensuring that all transport infrastructure projects comply with existing

regulations and are supported by coherent policies that facilitate smooth

implementation and operation.

Stakeholder Engagement: Continuous engagement processes to involve citizens, business communities,

and other interest groups in the planning and development stages to gather input

and build public support for infrastructure projects.

Performance Monitoring: Setting up systems to monitor the performance of transport infrastructure

projects, assessing their impact on urban mobility, and making adjustments as

necessary to meet long-term transportation needs.

The "Transport Infrastructure Development and Coordination Framework" shall be crafted to facilitate effective collaboration and strategic alignment among various entities involved in transport infrastructure development in the Nairobi Metropolitan Area. By providing a clear structure for coordination and development, the framework ensures that transport projects are not only implemented efficiently but also contribute to the broader objectives of urban mobility and sustainable development. This document is crucial for guiding the systematic growth and integration of transport facilities, which are key to the region's economic and social well-being.

6 GIS and Real-Time Monitoring Implementation Guide for Road Network Management

The "GIS and Real-Time Monitoring Implementation Guide for Road Network Management" associated with NaMATA under the Executive Order 2017 is designed to fulfill clause (h) of the Authority's functions: (h) Develop an inventory and undertake continuous evaluation of the declared road network status within the Metropolitan Area.

Content Description:

This guide focuses on implementing Geographic Information System (GIS) technology and real-time monitoring tools to manage and evaluate the road network effectively within the Nairobi Metropolitan Area. The guide provides detailed methodologies for deploying these technologies to create a comprehensive inventory of the road network and to facilitate ongoing assessments of road conditions and traffic patterns. This allows for data-driven decision-making to enhance road safety, efficiency, and sustainability.

Specific Aspects Covered:

GIS Deployment: Detailed instructions on setting up GIS systems, including the selection of

appropriate software, hardware, and data sources. This includes how to map the entire road network digitally, capturing all relevant attributes such as road

widths, traffic densities, surface types, and conditions.

Real-Time Monitoring Systems: Guidelines for integrating real-time traffic monitoring systems using sensors,

cameras, and other IoT (Internet of Things) devices. This section explains how to collect and analyze traffic data to manage traffic flow, detect congestion

points, and identify areas requiring maintenance or upgrades.

Data Management and Analysis: Procedures for managing the vast amounts of data generated by GIS and

monitoring systems. This includes data storage, updating practices, and the use of analytical tools to interpret data for planning and operational purposes.

Reporting and Visualization: Techniques for visualizing transportation data in user-friendly formats such as

maps, graphs, and dashboards. This ensures that transportation planners, decision-makers, and the public can easily understand and utilize the

information.

Maintenance Scheduling: Using data from the system to plan and prioritize maintenance work, ensuring

that resources are allocated efficiently and road conditions are kept at optimal

levels for safety and performance.

Emergency Response Enhancement: Leveraging real-time data to improve the responsiveness of emergency services,

such as quick rerouting in the event of accidents or natural disasters.

The "GIS and Real-Time Monitoring Implementation Guide for Road Network Management" is a crucial resource for NaMATA, enabling the authority to harness modern technology to maintain and enhance the metropolitan road network. By providing a clear framework for the implementation and use of GIS and real-time monitoring systems, the guide supports the proactive management of transportation infrastructure, leading to improved mobility, safety, and quality of life for residents of the Nairobi Metropolitan Area.

7 Road Quality Assessment and Maintenance Schedule Manual

The "Road Quality Assessment and Maintenance Schedule Manual" associated with NaMATA under the Executive Order 2017 specifically addresses clause (h) of the Authority's functions: (h) Develop an inventory and undertake continuous evaluation of the declared road network status within the Metropolitan Area.

Content Description:

This manual provides a detailed approach to assessing the quality of road infrastructure and scheduling maintenance activities within the Nairobi Metropolitan Area. It outlines systematic procedures for inspecting road conditions, identifying necessary maintenance work, and prioritizing these activities based on critical needs and available resources. This ensures that the road network remains safe, functional, and efficient.

Specific Aspects Covered:

Road Assessment Techniques: Detailed methodologies for conducting thorough road quality assessments. This

includes guidance on the use of visual inspections, structural testing, and the deployment of advanced technologies like ground-penetrating radar or drones

to identify wear, damages, and potential failure points.

Data Collection and Management: Instructions for collecting and managing data from road assessments. This

section would include forms, checklists, and software recommendations for compiling and storing assessment data in a centralized database for easy access

and analysis.

Maintenance Prioritization: Criteria and algorithms for prioritizing maintenance tasks based on factors such

as road condition, traffic volume, and risk of failure. This helps in allocating resources effectively and ensuring that the most critical repairs are addressed

promptly.

Maintenance Scheduling: Procedures for creating and managing a maintenance schedule that aligns with

budgetary constraints and logistical considerations. This includes templates and

tools for planning and tracking maintenance activities over time.

Quality Control and Assurance: Standards and practices for ensuring the quality of maintenance work. This

section advises on setting up oversight mechanisms, including third-party audits and quality control checks, to ensure that maintenance work meets specified

standards.

Reporting and Documentation: Guidelines for documenting maintenance activities and outcomes. This ensures

transparency and provides a record for future reference, which is crucial for

ongoing road management and planning.

The "Road Quality Assessment and Maintenance Schedule Manual" is an essential tool for NaMATA, ensuring that road infrastructure is regularly and effectively maintained. By providing a comprehensive guide to assessing road conditions and managing maintenance schedules, the manual helps maintain the integrity and safety of the metropolitan road network, supporting efficient transportation and economic activities in the region.

8 Traffic Management and Road Use Guide

The "Traffic Management and Road Use Guide" shall be developed in line with NaMATA under the Executive Order 2017 is designed to address clause (i) from the Authority's functions: (i) Formulate strategies to ensure overall improvement in traffic flow, planned and programmed traffic engineering and traffic management works within the Metropolitan Area.

Content Description:

This guide provides comprehensive strategies and methodologies for managing and regulating traffic flow and road usage across the Nairobi Metropolitan Area. It aims to enhance the efficiency and safety of the road network by integrating modern traffic management techniques and smart technology solutions. The guide outlines best practices and actionable plans to optimize road use, reduce congestion, and improve the overall mobility experience for commuters.

Specific Aspects Covered:

Traffic Analysis Techniques: Procedures for analyzing traffic patterns using data from traffic counters,

cameras, and sensors. This section would include methodologies for interpreting traffic data to understand peak usage times, common congestion

points, and traffic composition.

Traffic Control Measures: Detailed information on implementing traffic control measures such as signal

timing adjustments, use of traffic control centers, and dynamic message signs

to manage real-time traffic conditions effectively.

Road Use Regulations: Guidelines for establishing and enforcing road use regulations that could

include lane discipline, weight restrictions, and the management of commercial

vehicle operations within city limits.

Public Awareness Campaigns: Strategies for conducting public awareness campaigns aimed at informing road

users about traffic rules, road safety, and the benefits of using alternative modes

of transportation.

Incident Management Protocols: Protocols for rapid response and management of traffic incidents to minimize

their impact on traffic flow. This includes procedures for clearing accidents,

managing on-site traffic during incidents, and communicating with the public.

Evaluation and Adjustment: Mechanisms for evaluating the effectiveness of implemented traffic management strategies and making necessary adjustments based on observed

outcomes. This could involve regular reviews and the incorporation of feedback

from commuters and stakeholders.

The "Traffic Management and Road Use Guide" serves as a vital resource for NaMATA and other related agencies involved in urban planning and transportation management within the Nairobi Metropolitan Area. By providing structured approaches and modern solutions for traffic management, the guide helps in reducing road congestion and enhancing the quality of urban life. It ensures that transportation policies and practices not only keep pace with the growing demands of the metropolitan population but also contribute to sustainable urban development.

9 Intermodal Transport Coordination Strategy

The "Intermodal Transport Coordination Strategy" created under NaMATA as outlined in the Executive Order 2017 addresses clause (j) of the Authority's functions: (j) Ensure optimal utilization of intermodal means of transport including air, road, rail, and non-motorized transport and any other modes targeting mass movement within the Metropolitan Area.

Content Description:

This strategy document provides a comprehensive plan for integrating various modes of transport within the Nairobi Metropolitan Area to enhance the efficiency and accessibility of the transport system. The strategy focuses on creating seamless connections between different transport modes, reducing transfer times, improving reliability, and increasing the convenience for commuters. It aims to promote a more coordinated and cohesive approach to transport planning and implementation.

Specific Aspects Covered:

Infrastructure Integration: Guidelines for the development and enhancement of infrastructure that supports

intermodal connectivity. This includes the design and construction of transit hubs, interchanges, and terminals where passengers can easily switch from one

mode of transport to another.

Service Synchronization: Strategies for aligning schedules, ticketing systems, and information services

across different modes to facilitate smooth transfers and reduce waiting times. This may involve the development of digital platforms that provide real-time

data and booking capabilities.

Policy and Regulatory Frameworks: Development of policies and regulations that support intermodal transport, such

as incentives for using public transport, regulations that streamline operations across modes, and policies that encourage private sector participation in

intermodal projects.

Stakeholder Collaboration: Mechanisms for fostering collaboration among various stakeholders, including

transport operators, government agencies, private sector partners, and the community, to ensure that intermodal strategies are effectively implemented

and maintained.

Accessibility and Inclusivity: Ensuring that intermodal facilities and services are accessible to all, including

the elderly, disabled, and those with reduced mobility. This includes the design of pedestrian-friendly environments around transit hubs and the provision of

adequate signage and assistance services.

Monitoring and Evaluation: Establishing systems for monitoring the performance of intermodal transport

initiatives and evaluating their impact on travel behavior, congestion, and environmental sustainability. This feedback will be used to refine and improve

the strategy over time.

The "Intermodal Transport Coordination Strategy" is a critical tool for NaMATA as it strives to create a more integrated and efficient transportation system in the Nairobi Metropolitan Area. By addressing the complexities of coordinating different transport modes and ensuring that they work together harmoniously, this strategy helps to enhance the overall effectiveness of the region's transport network, improving mobility and accessibility for all its residents.

10 Public Transit Subsidy Program Development Guide

The "Public Transit Subsidy Program Development Guide" associated with NaMATA as detailed in the Executive Order 2017 specifically addresses clause (k) of the Authority's functions: (k) Assist in poverty alleviation by increasing economic efficiency through lower transport costs and prices within the Metropolitan Area.

Content Description:

This guide focuses on the development and implementation of subsidy programs for public transit aimed at making transportation more affordable for low-income residents and thereby alleviating poverty. It outlines strategies to reduce transport costs, which can help increase access to employment, education, and services, contributing to broader economic efficiency and social inclusion within the metropolitan area.

Specific Aspects Covered:

Subsidy Program Design: Guidelines on designing effective subsidy programs that target the right

beneficiaries (such as low-income commuters, students, elderly, and disabled persons), determining the amount of subsidy, and selecting the most appropriate

forms of public transport to subsidize.

Funding Sources: Exploration of various funding options for the subsidy program, including

government budgets, external grants, and crosssubsidization from other public revenue streams. This section ensures that the programs are financially

sustainable.

Eligibility Criteria: Establishment of clear criteria for eligibility to ensure that subsidies are granted

to individuals who genuinely need financial support to access public

transportation.

Implementation Mechanisms: Detailed procedures for the implementation of subsidy programs, including the

distribution of benefits (such as through smart card systems or mobile apps) and

mechanisms to prevent fraud and ensure fair access.

Monitoring and Evaluation: Frameworks for monitoring the effectiveness of subsidy programs in increasing

transport accessibility and reducing economic burdens on lower-income populations. This includes tracking usage patterns and assessing the impact on

overall economic activity.

Stakeholder Engagement: Strategies for involving various stakeholders, including public transport

providers, local communities, and social welfare organizations, in the planning and implementation phases to gain insights and support for the subsidy

programs.

The "Public Transit Subsidy Program Development Guide" serves as a vital resource for NaMATA and related entities in creating and managing subsidy schemes that make transportation more affordable and accessible. By reducing the cost of public transit, these programs play a crucial role in enhancing mobility for economically disadvantaged groups and supporting broader social and economic development goals within the Nairobi Metropolitan Area.

11 Economic Impact Assessment Guide for Transport Cost Reduction

The "Economic Impact Assessment Guide for Transport Cost Reduction" associated with NaMATA under the Executive Order 2017 is directly linked to clause (k) of the Authority's functions: (k) Assist in poverty alleviation by increasing economic efficiency through lower transport costs and prices within the Metropolitan Area.

Content Description:

This guide provides a comprehensive methodology for assessing the economic impacts of transport cost reduction initiatives within the Nairobi Metropolitan Area. It aims to evaluate how lowering transport costs can alleviate poverty, enhance access to essential services, and stimulate economic activity by making commuting more affordable for the general population and particularly for low-income groups.

Specific Aspects Covered:

Assessment Framework: Detailed steps for conducting economic impact assessments, including defining

the scope of the study, selecting appropriate economic indicators, and

identifying data sources.

Cost-Benefit Analysis: Guidelines for performing cost-benefit analyses to evaluate the direct and

indirect economic benefits of reduced transport costs, such as increased employment opportunities, higher disposable incomes, and improved business

productivity.

Data Collection and Analysis: Techniques for collecting quantitative and qualitative data from various

stakeholders, including transport users, businesses, and government agencies. This section also covers methods for analyzing this data to draw meaningful

conclusions about the impacts of cost reduction.

Socio-Economic Factors: Consideration of socio-economic factors that influence how transport cost

reductions impact different groups within the metropolitan area, including

analysis of impacts on vulnerable populations.

Policy Recommendations: Development of policy recommendations based on the assessment findings.

This could include suggestions for further reducing transport costs, optimizing

subsidy schemes, or enhancing public transport services.

Reporting and Dissemination: Advice on preparing assessment reports and disseminating findings to

stakeholders, policymakers, and the public to inform future transport planning

and policy-making.

The "Economic Impact Assessment Guide for Transport Cost Reduction" is an essential tool for NaMATA and other relevant bodies, enabling them to understand the broader economic implications of making public transport more affordable. By providing a clear and systematic approach to assessing these impacts, the guide helps in making informed decisions that support sustainable economic development and poverty alleviation in the Nairobi Metropolitan Area.

12 Guide to Implementing Green Transport Initiatives

The "Guide to Implementing Green Transport Initiatives" shall be developed under NaMATA as specified in the Executive Order 2017 is tailored to address clause (l) of the Authority's functions: (l) Improve the environmental sustainability of the transport system in the Metropolitan Area;

Content Description:

This guide provides comprehensive methodologies and best practices for implementing environmentally friendly or 'green' transport initiatives within the Nairobi Metropolitan Area. It aims to promote sustainable transportation by reducing environmental impacts, enhancing energy efficiency, and fostering the adoption of cleaner technologies.

The guide is a resource for planning and executing projects that align with environmental sustainability goals, helping to reduce the carbon footprint of the transport sector.

Specific Aspects Covered:

Sustainable Transport Solutions: Introduction to various sustainable transport solutions, including the promotion

of electric vehicles, bicycles, and public transit as alternatives to traditional

gasoline-powered vehicles.

Infrastructure Development: Guidelines for developing and enhancing infrastructure that supports green

transport solutions, such as charging stations for electric vehicles, secure

bicycle lanes, and pedestrian paths.

Policy Frameworks: Development of supportive policy frameworks that encourage green initiatives,

including incentives for using sustainable transport modes, regulations to limit emissions from public transport vehicles, and policies to integrate sustainability

into transport planning and procurement processes.

Public Awareness and Engagement: Strategies for raising public awareness about the benefits of green transport

solutions and engaging with community members to increase their participation and support. This includes educational campaigns, community consultations,

and collaborative projects.

Partnerships and Collaboration: Approaches to foster partnerships between government agencies, private sector

entities, and non-governmental organizations to leverage resources, expertise,

and technologies for sustainable transport projects.

Monitoring and Evaluation: Mechanisms for monitoring the implementation and impact of green transport

initiatives, including setting up indicators for environmental impact, user adoption rates, and overall satisfaction. This section also covers the continuous evaluation and adjustment of strategies based on performance data and feedback.

The "Guide to Implementing Green Transport Initiatives" serves as a critical resource for NaMATA, providing detailed guidance on how to integrate sustainability into the region's transportation systems effectively. By adopting the practices outlined in this guide, NaMATA can lead by example in reducing environmental impacts and promoting a healthier, more sustainable metropolitan area for future generations.

13 Environmental Impact Assessment Guide for Transport Projects

The "Environmental Impact Assessment Guide for Transport Projects" shall be developed under NaMATA as outlined in the Executive Order 2017 specifically addresses clause (l) of the Authority's functions: (l) Improve the environmental sustainability of the transport system in the Metropolitan Area;

Content Description:

This guide offers a structured approach for conducting Environmental Impact Assessments (EIAs) for transport projects within the Nairobi Metropolitan Area. It aims to ensure that all transport initiatives are evaluated in terms of their environmental consequences, helping to prevent negative impacts and enhance positive outcomes. By integrating environmental considerations into the early stages of project planning and decision-making, the guide facilitates the development of transport infrastructure that is both sustainable and environmentally responsible.

Specific Aspects Covered:

EIA Process Overview: Detailed explanation of the EIA process, including scoping, impact analysis,

mitigation planning, and reporting. This section outlines the key steps involved in conducting an EIA and the specific considerations for transport projects.

Legal and Regulatory Requirements: Summary of the legal and regulatory framework governing environmental

assessments in the region, including any national or local laws that must be

adhered to during the assessment process.

Impact Identification and Analysis: Techniques for identifying and analyzing the potential environmental impacts

of transport projects, such as emissions, noise pollution, biodiversity loss, and water contamination. This includes methodologies for quantifying impacts and

assessing their significance.

Mitigation and Management Strategies: Guidelines for developing effective mitigation strategies to minimize

adverse environmental impacts. This might include the design of pollution control measures, habitat restoration initiatives, and sustainable construction

practices.

Public Participation: Protocols for involving the public and other stakeholders in the EIA process.

This section emphasizes the importance of transparency and community engagement in assessing environmental impacts and developing consensus on

project decisions.

Monitoring and Compliance: Frameworks for setting up environmental monitoring systems during and after

project implementation to ensure compliance with environmental standards and the effectiveness of mitigation measures. This includes regular monitoring

reports and corrective action procedures.

The "Environmental Impact Assessment Guide for Transport Projects" is a vital resource for NaMATA and associated stakeholders, providing the necessary tools and knowledge to conduct thorough environmental assessments. This ensures that transport projects not only meet regulatory requirements but also contribute positively to the environmental health of the Nairobi Metropolitan Area, promoting sustainable development practices that protect and enhance the natural and built environment.

14 Environmental and Land Use Planning Guide

The "Environmental and Land Use Planning Guide" associated with NaMATA under the Executive Order 2017 is specifically designed to support clause (m) of the Authority's functions: (m) Facilitate the integration of transport and land use planning in the Metropolitan Area;

Content Description:

This guide offers comprehensive strategies and methodologies for integrating environmental considerations and land use planning with transport infrastructure development within the Nairobi Metropolitan Area. It focuses on creating a cohesive approach that aligns land use decisions with transportation planning to promote sustainable development, enhance connectivity, and improve quality of life for residents.

Specific Aspects Covered:

Integrated Planning Principles: Introduces principles of integrated planning that ensure transport projects are

developed in harmony with land use policies and environmental conservation. This includes aligning transport corridors with urban growth patterns, protecting ecologically sensitive areas, and promoting mixed-use developments.

Sustainability Considerations: Guidelines on incorporating sustainability into transport and land use planning,

including the use of green infrastructure, promotion of non-motorized transit

options, and minimization of environmental disruption.

Stakeholder Collaboration: Strategies for effective stakeholder engagement, ensuring that planners,

developers, community members, and environmental groups are involved in the planning process. This includes conducting workshops, public consultations,

and collaborative decision-making sessions.

Zoning and Land Use Regulations: Advice on developing and enforcing zoning regulations that support sustainable

transport solutions, such as transit-oriented development (TOD), which

encourages high-density development near transit stations to maximize access

and reduce car dependency.

Impact Assessment Tools: Provides tools and techniques for assessing the environmental and social

impacts of land use decisions and transport projects. This may include geographic information systems (GIS) for spatial analysis and modeling tools

to predict traffic, economic, and environmental impacts.

Policy Development and Implementation: Offers guidance on formulating policies that integrate environmental and

land use planning with transportation. It also covers the implementation of these

policies through local planning documents and regulatory measures.

The "Environmental and Land Use Planning Guide" serves as an essential resource for NaMATA and other related governmental bodies, providing a framework for planning transport systems that are environmentally sustainable and well-integrated with land use policies. By following the guidelines in this document, NaMATA can ensure that transportation infrastructure development supports broader urban development goals and adheres to principles of sustainability, enhancing the overall urban environment and making the Nairobi Metropolitan Area a better place to live and work.

15 Advanced Traffic Management Solutions Guide

The "Advanced Traffic Management Solutions Guide" to be crafted under NaMATA as specified in the Executive Order 2017 is intended to address clause (n) of the Authority's functions: (n) Make better use of existing road space for all modes and reduce the need for the construction of new roads within the Metropolitan Area.

Content Description:

This guide details advanced traffic management strategies and technologies aimed at optimizing the use of existing road infrastructure in the Nairobi Metropolitan Area. It focuses on enhancing traffic flow, improving safety, and increasing the efficiency of current road networks to accommodate various modes of transport without necessarily expanding road capacity through new constructions.

Specific Aspects Covered:

Traffic Optimization Techniques: Introduces cutting-edge methods for traffic management, including adaptive

signal control technology, which adjusts traffic lights in real-time based on traffic conditions, and dynamic lane usage systems that can change directions

during peak times.

Demand Management Strategies: Offers strategies for managing traffic demand rather than increasing supply.

This includes congestion pricing, park-and-ride schemes, and encouraging the

use of public transit during peak hours through incentives.

Real-Time Traffic Data Systems: Guidelines for implementing realtime traffic monitoring systems that use

cameras, sensors, and GPS data to provide traffic operators and the public with up-to-date information on traffic conditions, helping to manage congestion and

optimize routes.

Multimodal Integration: Strategies for enhancing the integration of different transport modes within the

road network, such as dedicated bus lanes, well-planned bike paths, and

pedestrian zones that ensure safe and efficient movement for all users.

Incident Management and Emergency Response: Procedures and technologies for quick response to traffic incidents, which minimize traffic disruption and restore normal flow swiftly.

This includes the deployment of rapid response teams and the use of mobile

apps to alert drivers to incidents and road closures.

Public Awareness and Behavioral Change:Initiatives to inform and educate the public about traffic issues and alternative transport modes that can alleviate road congestion. This might

involve campaigns promoting carpooling, telecommuting, and off-peak travel.

The "Advanced Traffic Management Solutions Guide" is a crucial tool for NaMATA, empowering the agency to improve traffic conditions and road utilization in the Nairobi Metropolitan Area efficiently. By deploying advanced technologies and innovative management strategies outlined in this guide, NaMATA can enhance the capacity and functionality of existing road networks, supporting sustainable urban mobility and reducing the need for extensive new road construction.

16 Non-Motorized Transport Infrastructure Enhancement Guide

The "Non-Motorized Transport Infrastructure Enhancement Guide" to be developed under NaMATA in accordance with the Executive Order 2017 is specifically designed to support clause (n) of the Authority's functions: (n) Make better use of existing road space for all modes and reduce the need for the construction of new roads within the Metropolitan Area.

Content Description:

This guide focuses on enhancing and expanding infrastructure for non-motorized transport (NMT) such as walking and cycling within the Nairobi Metropolitan Area. It aims to promote safer, more accessible, and more efficient alternatives to motorized transport, thereby reducing congestion, improving public health, and enhancing the overall urban environment.

Specific Aspects Covered:

Infrastructure Design and Development: Provides detailed design standards and best practices for developing

pedestrian pathways, bicycle lanes, and other NMT facilities. This includes considerations for safety, accessibility, connectivity, and integration with other

modes of transport.

Safety and Accessibility Improvements: Outlines strategies to improve safety and accessibility on existing

pathways and lanes. This might involve the installation of better lighting, improved signage, pedestrian crossings, and traffic calming measures to ensure

that NMT options are safe and welcoming for all users.

Integration with Public Transit: Details methods for integrating NMT infrastructure with public transport

systems to create seamless multimodal transport networks. This includes the provision of bike racks on buses, safe parking at transit stations, and easy

transitions between different modes of transport.

Policy and Regulatory Frameworks: Advises on the development of supportive policies and regulations that

encourage the use of NMT. This could include zoning laws that require new developments to include NMT facilities, ordinances that protect the rights of pedestrians and cyclists, and incentives for businesses that support NMT.

Community Engagement and Advocacy: Techniques for engaging the community to promote the use and support

of NMT. This involves outreach programs, educational campaigns, and partnerships with local schools, businesses, and community organizations to

raise awareness about the benefits of NMT.

Monitoring and Evaluation: Establishes metrics and procedures for monitoring the use and effectiveness of

NMT infrastructure and for evaluating progress towards enhancing NMT facilities. This includes ongoing assessments to ensure that infrastructure meets

the needs of users and adapts to changing conditions.

The "Non-Motorized Transport Infrastructure Enhancement Guide" is a critical resource for NaMATA, providing comprehensive guidance on expanding and improving non-motorized transport options. By following the guidelines in this document, NaMATA can help to transform the metropolitan transport landscape, making it more sustainable, healthy, and efficient by effectively utilizing existing road spaces and reducing the reliance on motorized vehicles.

17 Parking Management Strategies Guide

The "Parking Management Strategies Guide" to be developed under NaMATA as specified in the Executive Order 2017 is tailored to address clause (o) of the Authority's functions: (o) Regulate both on-street and off-street parking on declared corridors and impose fees and penalties with respect thereto;

Content Description:

This guide provides a comprehensive framework for managing parking within the Nairobi Metropolitan Area. It focuses on optimizing the use of parking resources to alleviate congestion, enhance urban mobility, and support economic activity. The guide outlines effective strategies for regulating and managing both on-street and off-street parking, including the implementation of parking fees and penalties to encourage turnover and discourage long-term parking in congested areas.

Specific Aspects Covered:

Parking Demand Management: Techniques for assessing parking demand and developing strategies to manage

it effectively. This includes the use of demand-responsive pricing, timerestricted parking, and incentives for alternative transportation methods that

reduce parking demand.

Technology Integration: Implementation of advanced technologies for parking management, such as

electronic parking meters, mobile app-based payment systems, and real-time parking availability indicators. These technologies can improve user experience

and operational efficiency.

Regulatory Frameworks: Development and enforcement of parking regulations that support strategic

urban planning goals. This section details the creation of zoning laws, parking standards, and compliance measures that align with broader transportation

policies.

Economic and Financial Models: Guidance on economic aspects of parking management, including the

structuring of fees and fines, financial models for revenue generation, and

funding mechanisms for parking infrastructure improvements.

Sustainability Practices: Incorporation of sustainability practices in parking areas, such as green parking

solutions that include permeable surfaces, electric vehicle charging stations, and

dedicated carpooling spaces.

Community and Stakeholder Engagement: Strategies for engaging with businesses, residents, and other stakeholders

to ensure that parking management plans meet community needs and receive broad support. This includes public consultations and collaborative planning

processes.

Monitoring and Evaluation: Procedures for monitoring the effectiveness of parking management strategies

and making adjustments based on data collected from ongoing operations and

stakeholder feedback.

The "Parking Management Strategies Guide" serves as an essential tool for NaMATA, equipping the authority with the knowledge and strategies needed to effectively regulate and manage parking. By implementing the practices outlined in this guide, NaMATA can enhance urban mobility, reduce traffic congestion, and improve the overall livability of the Nairobi Metropolitan Area.

18 Research and Development Guidelines for Public Transport

The "Research and Development Guidelines for Public Transport" to be created under NaMATA as described in the Executive Order 2017 is designed to support clause (p) of the Authority's functions: (p) Conduct studies and research for, amongst other things, identification of the Mass Rapid Transit System routes, corridors, network, and service

levels.

Content Description:

This guide provides a comprehensive framework for carrying out research and development activities in the public transport sector within the Nairobi Metropolitan Area. It focuses on fostering innovation and continuous improvement through systematic research, helping to identify optimal routes, enhance service efficiency, and improve overall system performance.

Specific Aspects Covered:

Research Methodologies: Detailed methodologies for conducting transport research, including data

collection techniques, statistical analysis, modeling, and simulation. This section ensures that research is robust, reliable, and applicable to real-world

challenges.

Project Identification and Prioritization: Guidelines for identifying and prioritizing research projects based on their

potential impact on public transport efficiency and service quality. This includes assessing the feasibility and strategic importance of various research

initiatives.

Innovation in Transport Technologies: Encouragement of innovative approaches to solve transport problems,

such as the development of new materials for infrastructure, advanced traffic

management systems, and environmentally friendly technologies.

Collaboration with Academia and Industry: Strategies for enhancing collaboration between NaMATA,

academic institutions, and industry partners to leverage external expertise, share

knowledge, and co-develop solutions.

Funding and Resource Allocation: Advice on securing funding for research projects, including grants, partnerships,

and investment strategies. This section also covers the efficient allocation of

resources to maximize the return on research investments.

Implementation of Findings: Processes for translating research findings into practical applications within the

public transport system. This includes pilot projects, policy formulation, and

system upgrades based on validated research outcomes.

Monitoring and Reporting: Systems for monitoring the progress and outcomes of research projects,

including mechanisms for tracking advancements, assessing the effectiveness of implemented solutions, and disseminating findings to relevant stakeholders.

The "Research and Development Guidelines for Public Transport" is a vital resource for NaMATA, providing the authority with the necessary tools to foster a culture of innovation and continuous improvement in public transport. By guiding research and development activities, these guidelines help NaMATA to enhance service delivery, improve transport infrastructure, and ultimately contribute to a more effective and sustainable public transport system in the Nairobi Metropolitan Area.

19 Funding and Financial Strategies for Public Transport

The "Funding and Financial Strategies for Public Transport" to be developed under NaMATA in accordance with the Executive Order 2017 is specifically designed to fulfill clause (q) of the Authority's functions: (q) Develop appropriate and sustainable funding mechanisms in order to achieve the objectives of the Authority.

Content Description:

This guide provides a detailed framework for establishing robust and sustainable financial strategies for funding public transport projects within the Nairobi Metropolitan Area. It aims to ensure that there are adequate and consistent financial resources available to support the development, maintenance, and enhancement of public transport systems,

contributing to long-term transport sustainability and efficiency.

Specific Aspects Covered:

Financial Planning and Budgeting: Guidelines for effective financial planning and budget management, including

the development of annual budgets, long-term financial forecasts, and contingency planning to accommodate unforeseen expenses or changes in

funding.

Revenue Generation Strategies: Exploration of various revenue generation options beyond traditional

government funding, such as public-private partnerships, farebox revenues, advertising, and ancillary services like retail developments within transport

hubs.

Cost Management and Efficiency: Strategies for managing costs and improving financial efficiency in public

transport operations. This includes the adoption of cost-saving technologies, optimization of service routes, and implementation of energy-efficient systems.

Grant and Funding Applications: Guidance on how to identify and apply for grants and external funding from

international donors, government programs, and private foundations that

support public transportation projects.

Stakeholder Engagement in Funding: Methods for engaging stakeholders, including local businesses and the

community, in funding initiatives. This might involve campaigns for funding referendums, sponsorship opportunities, and community-based funding

mechanisms.

Financial Reporting and Transparency: Standards for maintaining high levels of financial transparency and

accountability, including regular financial reporting, audits, and public disclosures that build trust and support from investors, stakeholders, and the

general public.

Risk Management and Financial Controls: Implementation of robust financial controls and risk management

procedures to safeguard assets, manage risks associated with funding and

investments, and ensure compliance with financial regulations.

The "Funding and Financial Strategies for Public Transport" serves as an essential tool for NaMATA, equipping the authority with strategic approaches to securing and managing finances necessary for the development and continuous improvement of public transport infrastructure. By employing the practices outlined in this guide, NaMATA can enhance the financial sustainability of the transport sector, supporting broader economic and social development goals within the Nairobi Metropolitan Area.

20 Legislative Guide for Expanding Transport Authority Functions

The "Legislative Guide for Expanding Transport Authority Functions" to be developed under NaMATA as outlined in the Executive Order 2017 is specifically designed to support clause (r) of the Authority's functions: (r) Perform any other functions vested upon the Authority under this Order.

Content Description:

This guide provides a detailed framework for understanding, navigating, and potentially expanding the legislative and regulatory powers of NaMATA. It aims to equip the Authority with the knowledge and tools needed to adapt and enhance its functions effectively within the legal frameworks governing public transportation in the Nairobi Metropolitan Area. The guide focuses on ensuring that NaMATA can undertake a broader range of functions as required by emerging transport needs and challenges.

Specific Aspects Covered:

Legal Framework Overview: An overview of the existing legal and regulatory framework that defines and

governs the functions of NaMATA. This section helps identify the scope of the

Authority's current powers and any limitations imposed by law.

Procedure for Amending Functions: Step-by-step guidance on the legal processes required to propose, advocate for,

and implement changes in the legislative framework that expands or modifies the Authority's functions. This includes how to navigate government processes,

legislative bodies, and public consultations.

Case Studies and Precedents: Examples and case studies from other jurisdictions where transport authorities

have successfully expanded their functions. These case studies provide practical insights and lessons learned that can guide similar efforts by NaMATA.

Stakeholder Engagement Strategies: Strategies for effectively engaging stakeholders, including government officials,

the private sector, community groups, and the general public, to gain support for legislative changes. This section includes methods for building coalitions,

conducting advocacy campaigns, and leveraging public support.

Impact Assessment: Guidelines for conducting impact assessments to evaluate the potential effects

of expanding NaMATA's functions. This includes assessing the social, economic, and environmental impacts of proposed legislative changes.

Drafting Proposals and Legislation: Practical advice on drafting legislative proposals, including the language,

format, and content that should be included in effective legislative documents.

Monitoring and Evaluation: Framework for monitoring the implementation of new functions and evaluating

their effectiveness in achieving desired transport outcomes. This helps ensure that legislative changes lead to meaningful improvements in transportation

services and infrastructure.

The "Legislative Guide for Expanding Transport Authority Functions" is a crucial resource for NaMATA, providing the necessary guidance to navigate the complex landscape of transportation legislation and governance. By utilizing this guide, NaMATA can proactively seek to expand and adapt its functions to better meet the needs of the Nairobi Metropolitan Area, ensuring that the Authority remains effective and responsive in its mission to enhance urban mobility and transport infrastructure.

21 Adaptive Management Framework Guide for Metropolitan Transport Authorities

The "Adaptive Management Framework Guide for Metropolitan Transport Authorities" to be developed under NaMATA as outlined in the Executive Order 2017 supports clause (r) of the Authority's functions: (r) Perform any other functions vested upon the Authority under this Order.

Content Description:

This guide provides a strategic framework for adaptive management within metropolitan transport authorities like NaMATA. It focuses on enhancing the Authority's ability to respond dynamically to changes and challenges in the urban transport environment. By implementing adaptive management practices, NaMATA can continually improve its strategies and operations to better meet the needs of the Nairobi Metropolitan Area.

Specific Aspects Covered:

Adaptive Management Principles: Introduction to the core principles of adaptive management, which is a

systematic approach for improving management policies and practices by

learning from the outcomes of operational activities.

Feedback Loops and Decision-Making: Details on establishing feedback loops that capture operational data and

user feedback, which are essential for informing decision-making processes. This includes the use of real-time data analytics to adjust transport services and

infrastructure as needed.

Scenario Planning: Guidance on scenario planning to anticipate future changes and potential

challenges in the metropolitan transport environment. This includes developing flexible strategies that can adapt to different future conditions, ensuring

resilience and sustainability.

Stakeholder Engagement: Strategies for engaging with stakeholders, including passengers, businesses,

community leaders, and government entities, to gather diverse insights and

foster collaborative problem-solving.

Continuous Learning and Development: Emphasis on continuous learning, involving regular training and

development opportunities for staff to stay updated with the latest trends and

technologies in transport management.

Innovation and Experimentation: Encouragement of innovation through pilot projects and experiments that test

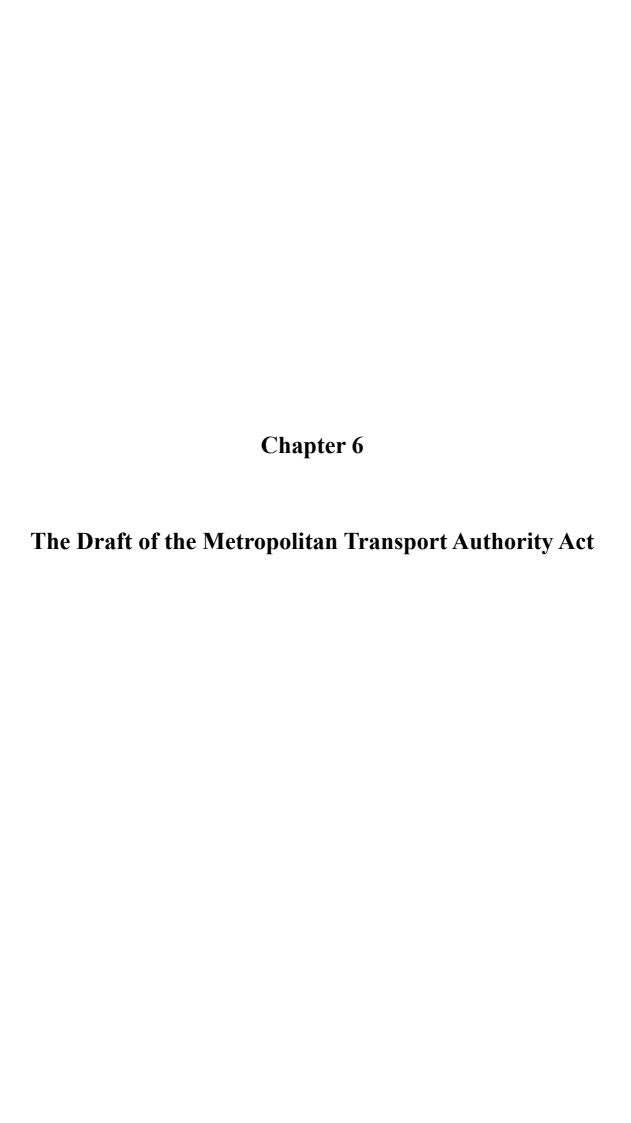
new ideas, technologies, and processes. This section includes methods for evaluating the success of these initiatives and scaling successful practices.

Policy and Strategy Updates: Procedures for regularly reviewing and updating policies and strategies to

reflect new knowledge, changing conditions, and technological advancements. This ensures that management practices remain effective and aligned with

overall goals.

The "Adaptive Management Framework Guide for Metropolitan Transport Authorities" is a crucial resource for NaMATA, equipping the authority with methodologies to remain agile and responsive in managing transportation services and infrastructure. By applying the practices outlined in this guide, NaMATA can enhance its capacity to adapt to changing circumstances, thereby improving the efficiency, effectiveness, and sustainability of transport solutions in the rapidly evolving urban landscape of the Nairobi Metropolitan Area.



The Metropolitan Transport Authority Act

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Part 1: Preliminary

Section 1.1: Short Title

This Act may be cited as the Metropolitan Transport 'Authority Act, 2024 (MTA Act).

Section 1.2: Commencement

This Act shall come into force on such a date as the Cabinet Secretary responsible for transport may, by notice in the Gazette, appoint. Different dates may be appointed for different provisions of this Act.

Section 1.3: Objectives

The objectives of this Act are:

- (1) Establish a Metropolitan Transport Authority: The Authority will be responsible for the governance, planning, regulation, and administration of public transportation within a metropolitan area.
- (2) Ensure Integrated Transport Systems: Promote and oversee the integration of various modes of public transport, including buses, railways, trams, and non-motorized transport systems, to create an efficient, coordinated public transportation network.
- (3) Enhance Efficiency, Accessibility, and Affordability: Develop policies and frameworks that guarantee reliable, accessible, and affordable public transportation for all metropolitan residents, with special attention to underserved and vulnerable groups.
- (4) Promote Sustainable and Environmentally Friendly Transport: Implement policies that support sustainable public transportation systems that reduce environmental impact, improve air quality, and promote the use of eco-friendly technologies.
- (5) Ensure Public Safety and Compliance: Regulate transport services to ensure the safety of passengers and operators, mandating compliance with service standards, safety requirements, and operational protocols.
- (6) Enhance Economic Growth and Livelihoods: Facilitate economic growth by improving access to employment and essential services through a well-structured, reliable public transportation system.

Section 1.4: Interpretation

In this Act, unless the context otherwise requires, the following terms shall have the meanings assigned to them:

- (1) "Authority" refers to the Metropolitan Transport Authority established under this Act.
- (2) "Metropolitan Area" refers to any region declared as a metropolitan area by the Authority for the purpose of public transportation management and oversight. This includes but is not limited to:
 - (a) Nairobi Metropolitan Area: Covering the counties of Nairobi City, Kiambu, Machakos, Kajiado, and Murang'a.
 - (b) Mombasa Metropolitan Area: Covering the County of Mombasa and surrounding regions that may be designated.
 - (c) Kisumu Metropolitan Area: Covering the County of Kisumu and any surrounding counties that may be designated.
 - (d) Any other region within the Republic of Kenya that is declared a metropolitan area by the Minister in consultation with the Authority, based on growth, population density, and transport demands.
- (3) "Public transport" refers to any transportation service, including buses, trains, trams, and ferries, that is operated for the general public along established routes with fixed or variable schedules and charges.
- (4) "Operator" means any individual, company, or legal entity that provides public transport services within the jurisdiction of the Authority under this Act.
- (5) "Matatu" means a public service vehicle (PSV) designed to carry 9 to 14 passengers, excluding the driver, for hire or reward. Matatus are regulated under the Traffic Act (Cap. 403) and NTSA regulations, which govern their licensing, safety, and operational standards.
- (6) "Bus" means a public service vehicle (PSV) designed to carry more than 25 passengers, excluding the driver, regulated under the Traffic Act (Cap. 403) and NTSA regulations for licensing, safety, and operational standards.
- (7) "Taxi" means a motor vehicle designed to carry up to 7 passengers, excluding the driver,

for hire or reward, regulated under the Traffic Act (Cap. 403) and NTSA regulations for licensing, safety, and operational standards.

- (8) "Taxi" means a motor vehicle designed to carry up to 7 passengers, excluding the driver, for hire or reward, regulated under the Traffic Act (Cap. 403) and NTSA regulations for licensing, safety, and operational standards.
- (9) "Fare" refers to the financial charge imposed on passengers for the use of public transport services regulated by the Authority.
- (10) "Infrastructure" refers to physical structures such as roads, railways, stations, bus stops, and terminals, including any related facilities and services supporting public transportation.
- (11) "Service standards" refers to the minimum quality benchmarks set by the Authority that must be adhered to by public transport operators, covering areas such as safety, efficiency, cleanliness, and customer service.
- (12) "Minister" refers to the Minister in charge of Transport, or any individual delegated with the authority to act on behalf of the Minister.
- (13) "Sustainable practices" refers to actions, technologies, and policies that promote environmental protection, reduce emissions, conserve resources, and ensure long-term viability of public transport systems.
- (14) "Vehicle" includes buses, trains, ferries, trams, motor vehicles, and other modes of transport that carry passengers within the Metropolitan Area.

Part 2: Establishment of Governing Authorities and Administration

Section 2.1: Creation of Metropolitan Transport Authorities

1. Establishment of Metropolitan Transport Authorities:

A Metropolitan Transport Authority shall be established for any urban area that has been declared a metropolitan area by the Minister responsible for transport, in consultation with relevant county governments and based on urban growth, population density, and transport needs.

As of the enactment of this Act, the following metropolitan areas shall have their own Metropolitan Transport Authorities:

- Nairobi Authority (Nairobi MTA or NaMATA)
- Mombasa Authority (Mombasa MTA)
- Kisumu Authority (Kisumu MTA)

As additional cities grow and form metropolitan areas, new Metropolitan Transport Authorities will be established to manage the public transport systems in those areas.

2. Declaration of New Metropolitan Areas:

The Minister responsible for transport, in consultation with relevant stakeholders, may declare additional urban areas as metropolitan areas based on the following criteria:

- Rapid urbanization and population growth.
- Economic importance of the region.
- Increasing demand for an integrated and efficient public transport system.

Upon such a declaration, a new Authority shall be established for that area, responsible for public transport planning, regulation, and administration within its jurisdiction.

Section 2.2: Powers and Functions of the Metropolitan Transport Authority (MTA)

1. Strategic Licensing and Regulation

The MTA shall have the authority to issue strategic licenses and regulate public transport services within the metropolitan area. This includes issuing metropolitan-specific regulations and guidelines, ensuring services meet the unique needs of urban transit while aligning with national standards set by the National Transport and Safety Authority (NTSA).

Regulations issued by the MTA shall complement national standards, such as vehicle safety, driver qualifications, and licensing, while introducing metropolitan-specific requirements related to fare structures, service quality, and multi-modal integration.

2. Fare Determination

The MTA shall determine fare structures for public transport services operating within the metropolitan area. Fare regulation shall ensure equity, affordability, and transparency for all passengers. The MTA will issue fare-related guidelines, ensuring that the established fare system reflects the economic realities of the region and aligns with both national and local policies.

3. Strategic Planning

The MTA shall engage in long-term strategic planning for the metropolitan public transport system. This involves coordinating with relevant national bodies such as the NTSA, county governments, and other stakeholders to address issues such as population growth, urban expansion, and environmental concerns. The MTA shall issue regulations to promote sustainability, efficiency, and service integration across different transport modes.

4. Safety and Environmental Standards

The MTA shall enforce safety standards and environmental regulations for public transport services in the metropolitan area. These standards will align with national requirements while addressing metropolitan-specific environmental challenges, such as emissions reduction, noise pollution, and the adoption of clean energy technologies for transport. The MTA's environmental regulations shall be periodically reviewed to adapt to evolving needs and innovations in sustainable transport.

5. Coordination with National Authorities and Stakeholders

The MTA shall work closely with the NTSA and other relevant national bodies to ensure that metropolitan regulations are consistent with national laws. The MTA will also consult with operators, passenger advocacy groups, and other stakeholders to ensure that its regulations are practical, fair, and well-suited to the needs of the metropolitan area.

6. Coordination with County Governments

The MTA shall collaborate with county governments within the metropolitan area to ensure that public transport services meet both local and regional needs. The MTA's regulations shall address metropolitan-specific issues while ensuring that county-level concerns are represented in strategic planning and policy-making processes.

7. Public Consultation and Participation

Before issuing any new regulations or guidelines, the MTA shall engage in a public consultation process. This will involve relevant stakeholders, including county governments, transport operators, and the general public. The consultation process is designed to ensure that regulations are inclusive, transparent, and address the needs of all affected parties.

8. Authority to Issue Metropolitan-Specific Regulations

The MTA is empowered to issue regulations and guidelines that address the unique challenges

faced by metropolitan transport systems. These regulations shall focus on areas such as fare regulation, service delivery standards, and the integration of transport modes. National-level requirements, such as vehicle safety and driver qualifications, will remain under the purview of the NTSA, with MTA regulations complementing these standards to reflect metropolitan needs.

9. Publication and Accessibility of Regulations

All regulations and guidelines issued by the MTA shall be published in the Kenya Gazette and made readily accessible to the public. This includes digital availability on the MTA's official website and at public offices to ensure transparency and ease of access for all stakeholders.

10. Review and Revision of Regulations

The MTA shall periodically review its regulations to ensure they remain relevant and effective. These reviews shall involve stakeholder consultations, and the MTA will collaborate with national authorities to align regulations with evolving national and local needs.

11. Enforcement of MTA Regulations

The MTA shall have the authority to enforce its regulations in collaboration with the NTSA and other law enforcement agencies. Any violations by operators, such as non-compliance with fare structures or service standards, shall be subject to penalties as defined under this Act. Enforcement efforts will be carried out to ensure consistency and fairness in line with both metropolitan and national regulations.

Section 2.3: Organizational Structure of Metropolitan Transport Authorities

1. Board of Directors:

Each Authority shall have an independent Board of Directors responsible for overseeing the operations, strategic planning, and regulation of public transport within its jurisdiction.

The Board of Directors shall be composed of:

- (1) A Chairperson appointed by the Minister responsible for transport.
- (2) Representatives from relevant county governments within the metropolitan area.
- (3) Experts in transport planning, engineering, urban development, and environmental sustainability.
- (4) Representatives from public transport operators and civil society organizations.

(5) The Board shall be responsible for setting policy, approving strategic plans, and ensuring compliance with regulations.

Amendment of Organizational Structure: The Board of Directors shall have the authority to amend the organizational structure of the Authority based on evolving needs, as metropolitan areas grow or as specific challenges and opportunities arise.

2. Chief Executive Officer (CEO):

Each Authority shall appoint a Chief Executive Officer (CEO) responsible for the day-to-day administration of the Authority.

The CEO shall implement the policies and decisions of the Board of Directors, oversee the operations of public transport services, and ensure compliance with the service standards set by the Authority.

The CEO shall be responsible for financial management, budgeting, and resource allocation within the Authority.

3. Essential Departments:

The following departments represent the critical and minimum structure that each Authority must establish. Additional departments may be created depending on the specific needs of each metropolitan area, as determined by the Board of Directors.

- (1) Transport Planning and Development Department:
 - (a) Primary Responsibilities:
 - Develop long-term and short-term transport plans that align with the broader urban development strategies of the metropolitan area.
 - Coordinate the integration of various transport modes (such as buses, trams, and rail) to create an efficient, cohesive public transport system.
 - Conduct transport demand forecasting, urban mobility assessments, and passenger flow analysis to optimize service delivery.
 - Collaborate with local and regional authorities to ensure that public transport infrastructure development aligns with urban planning efforts.
 - (b) Minimum Functions:
 - Preparation of the Metropolitan Structure Planning and Metropolitan Transport Plan.

- Integration of transport modes (multi-modal systems).
- Infrastructure planning and development coordination.
- Data analysis and mobility research.

(2) Operations Management Department

(a) Primary Responsibilities:

- Oversee and manage the daily coordination of public transport services provided by private operators, ensuring compliance with operational standards, service reliability, and safety.
- Coordinate the scheduling, routing, and dispatching of public transport services to meet passenger demand and ensure service efficiency.
- Monitor the performance of operators' fleets and ensure timely responses to operational disruptions and emergencies.
- Collaborate with operators and internal departments to ensure the integration of transport modes and the smooth functioning of the network.

(b) Minimum Functions:

- Service scheduling and dispatching coordination with operators.
- Real-time monitoring and operations control.
- Fleet oversight and compliance monitoring.
- Incident and disruption management.
- Coordination of intermodal transfers and communication with passengers.

(3) Regulation, Licensing, and Compliance Department:

(a) Primary Responsibilities:

- Ensure all public transport operators are properly licensed, and vehicles meet the minimum service and safety standards set by the Authority.
- Develop and enforce regulations governing the operation of public transport services, including fare structures, schedules, and operational safety protocols.
- Monitor compliance with environmental, safety, and service quality standards and take enforcement actions against non-compliant operators.

(b) Minimum Functions:

- Licensing and permits for transport operators.
- · Service standard compliance checks and inspections.

- Regulation of fares, routes, and service schedules.
- Enforcement of safety and environmental regulations.

(4) Finance and Administration Department:

(a) Primary Responsibilities:

- Manage the financial resources of the Authority, including budgeting, financial planning, and auditing of public transport funds.
- Oversee fare collection systems and ensure that revenue management is transparent and efficient.
- Ensure the effective management of human resources, including hiring and workforce development.

(b) Minimum Functions:

- Budgeting, financial management, and reporting.
- Fare system management (including collection and subsidies).
- Human resources management.

(5) Safety, Standards, and Environmental Sustainability Department:

(a) Primary Responsibilities:

- Ensure the safety of passengers, operators, and the general public by setting and enforcing safety standards for public transport vehicles and operations.
- Promote environmentally sustainable practices within the transport sector, including emission reduction strategies and the adoption of green technologies.
- Coordinate vehicle safety inspections and monitor environmental impacts.

(b) Minimum Functions:

- Passenger and vehicle safety enforcement.
- Environmental sustainability policies and monitoring.
- Emission standards compliance.

4. Flexibility to Establish Additional Departments:

Based on the unique needs of each metropolitan area, the Board of Directors may decide to establish additional departments or specialized units as necessary. These may include, but are not limited to:

(1) Customer Service and Public Relations Department: Responsible for addressing customer

complaints, managing public outreach, and ensuring a positive passenger experience.

- (2) Technology and Innovation Department: Focused on integrating technology into the transport system, including electronic ticketing, real-time passenger information, and smart infrastructure development.
- (3) Legal and Policy Department: Responsible for handling legal matters, drafting policies, and ensuring that the Authority complies with national laws and regulations.

Part 3: Scope and Application

Section 3.1: Jurisdiction

1. Authority Jurisdiction:

Each Authority shall have jurisdiction over public transport systems within its designated metropolitan area, which includes the entirety of the metropolitan area as declared by the Minister responsible for transport.

As of the enactment of this Act, the following metropolitan areas have been declared and are governed by their respective Metropolitan Transport Authorities:

- (1) Nairobi Authority (Nairobi MTA): Covering the Nairobi Metropolitan Area, including the counties of Nairobi City, Kiambu, Machakos, Kajiado, and Murang'a.
- (2) Mombasa Authority (Mombasa MTA): Covering the Mombasa Metropolitan Area and any surrounding regions declared as part of the metropolitan area.
- (3) Kisumu Authority (Kisumu MTA): Covering the Kisumu Metropolitan Area and any surrounding regions declared as part of the metropolitan area.

The Minister, in consultation with county governments, may declare additional metropolitan areas as cities grow and meet the criteria set forth in this Act. Upon such a declaration, a Authority will be established to govern the newly designated area.

2. Geographical Scope:

The Authority's jurisdiction shall encompass all public transport systems operating within the metropolitan boundaries, including road transport (buses, minibuses, matatus), railways, trams, ferries, and non-motorized transport (e.g., bicycles, pedestrian pathways).

The Authority may, as necessary, regulate transport systems that extend beyond the metropolitan area if they provide critical connectivity to the region (e.g., inter-county or regional commuter services).

Section 3.2: Integration and Coordination

1. Integration of Transport Modes:

Each Authority shall be responsible for integrating different modes of public transport to create a cohesive and seamless transportation network within the metropolitan area.

The integration will include the coordination of bus services, rail systems, trams, and non-motorized transport to ensure efficient and reliable movement of passengers.

The Authority will develop transport hubs and intermodal terminals to facilitate easy transfer between different transport modes.

2. Coordination with National Transport Bodies:

Each Authority will coordinate with national transport bodies, including the Kenya Railways Corporation, Kenya Airports Authority, and Kenya Urban Roads Authority, to ensure that national transport infrastructure projects are aligned with regional public transport plans.

Where necessary, the Authority may enter into agreements with these national bodies to manage and operate specific transport infrastructure within the metropolitan area.

3. Regional and Inter-metropolitan Coordination:

The Authority will work with other metropolitan transport authorities to ensure that public transport services between metropolitan areas are well-coordinated, especially in the case of inter-metropolitan commuter services.

Collaborative frameworks will be established to ensure that long-distance commuter services and inter-metropolitan transport infrastructure (such as railways and highways) are planned and managed efficiently.

4. Public and Private Sector Coordination:

The Authority will collaborate with both public and private transport operators within the metropolitan area to ensure that services are provided efficiently and adhere to the quality and safety standards set by the Authority.

The Authority shall promote public-private partnerships (PPPs) to support the development of transport infrastructure, service delivery, and technological innovations in public transport.

5. Land Use and Transport Integration:

The Authority will work in close collaboration with urban planning authorities to ensure that public transport planning is integrated with land use planning.

Transport planning will consider the needs of residential, commercial, and industrial zones, and will ensure that new developments are well-connected to public transport networks.

The Authority will also contribute to the formulation of regional growth strategies, ensuring that transport infrastructure keeps pace with urban expansion and economic development.

Part 4: Regulatory Framework

Section 4.1: Fare Structures

- (1) The Authority shall establish and regulate fare structures for all public transport services within its jurisdiction, ensuring that:
 - (a) Fares are affordable for the general public, particularly for low-income groups;
 - (b) Fares are sustainable for public transport operators, allowing them to cover operational costs while maintaining quality services.
- (2) The Authority may implement various fare models to meet the diverse needs of the population, including but not limited to:
 - (a) Flat rate fares, where passengers pay a fixed amount for a journey regardless of distance;
 - (b) Distance-based fares, where fares are calculated based on the length of the journey;
 - (c) Concessionary fares for specific groups, including students, the elderly, persons with disabilities, and other vulnerable populations.
- (3) The Authority shall ensure that fare structures are transparent and clearly communicated to the public, providing passengers with information on fare calculations, discount schemes, and concessionary fare eligibility.

Section 4.2: Fare Reviews and Adjustments

- (1) The Authority, through its Board of Directors, shall conduct periodic reviews of fare structures to account for:
 - (a) Changes in operational costs faced by public transport operators, including fuel prices, labour costs, and maintenance expenses;
 - (b) Inflationary pressures and other economic factors that may impact the affordability of fares for passengers;
 - (c) The need to maintain service quality and operational sustainability.
- (2) The Authority shall ensure that fare adjustments are reasonable, equitable, and aligned with the broader objective of providing accessible public transport services to all segments of the population.
- (3) Public consultations may be conducted as part of the fare review process to gather input from stakeholders, including passengers, transport operators, and civil society organizations.
- (4) The Authority shall communicate any fare adjustments to the public in advance, ensuring transparency and giving passengers sufficient time to prepare for changes.

Section 4.3: Service Quality Standards

Performance-Based Contracts (PBCs) as Default:

Performance-Based Contracts (PBCs) shall be the default contract model for public transport operators within the metropolitan area, designed to emphasize service quality outcomes such as punctuality, safety, cleanliness, and customer satisfaction.

However, PBCs are not mandatory and may be introduced progressively as the Authority builds its management capacity and collects operational data. The Authority may opt for other contract models (e.g., Gross Cost Contracts, Net Cost Contracts, or Franchise Contracts) based on its current capacity and the specific needs of the metropolitan area.

Contracts will be structured around Key Performance Indicators (KPIs) such as punctuality, safety, vehicle cleanliness, and customer service. Financial incentives or penalties will be linked to these KPIs to encourage high performance from operators.

2. Flexibility in Contracting:

The Authority may begin with simpler contract models if it does not have sufficient administrative capacity or reliable operational data from operators. This flexible approach will allow the Authority to gradually develop its systems and oversight mechanisms as it collects data and enhances its management capabilities.

In the absence of formal contracts, the Authority will focus on establishing baseline service standards for operators, even without financial or operational data submission from public transport operators. Initial contracts may therefore prioritize essential service delivery (e.g., basic routes, schedules, and vehicle safety) while allowing room for refinement as more data becomes available.

3. Collection of Operational and Financial Data:

To move towards more formal contracting models, including Performance-Based Contracts, the Authority shall work with public transport operators to start submitting basic operational data (such as ridership, vehicle usage, and service frequency) and financial data (such as operating costs and fare revenue).

This data collection process will be gradual, with the Authority providing support to operators in the submission and verification of data. Over time, this data will form the basis for more accurate performance measurement and contract development.

4. Monitoring and Enforcement:

The Authority shall monitor public transport operators to ensure they meet minimum service standards, regardless of the contract type in place. Monitoring mechanisms may include vehicle inspections, passenger surveys, and data collection on service punctuality, safety, and cleanliness.

Penalties for non-compliance with service quality standards may include fines, suspension of licenses, or reduced access to transport infrastructure. Conversely, operators that exceed service quality benchmarks may be eligible for performance bonuses or other incentives.

Section 4.4: : Infrastructure Usage

Regulation of Public Transport Infrastructure:

(1) Authority's Regulatory Powers:

Each Authority shall regulate the use of public transport infrastructure within its jurisdiction, including but not limited to bus terminals, train stations, tram lines, ferry docks, and transport hubs. The Authority shall ensure that all infrastructure is accessible to licensed operators, and that its use is conducted in accordance with established safety, operational, and environmental standards.

(2) Infrastructure Maintenance:

The Authority shall be responsible for ensuring that all public transport infrastructure is maintained to high safety and operational standards. The Authority may conduct regular inspections and impose penalties or restrictions on operators who fail to comply with infrastructure usage requirements or cause damage to public transport facilities.

2. Allocation of Infrastructure Resources:

(1) Criteria for Allocation:

The Authority shall allocate the use of key public transport infrastructure based on the following criteria: (a) Operational needs, including the capacity requirements of operators and the demand for transport services in different areas; (b) Service quality, with priority given to operators who consistently meet or exceed service standards established by the Authority; (c) Compliance with standards, where only licensed operators who fully comply with the safety, environmental, and operational standards set by the Authority may access infrastructure resources.

(2) Priority Access:

Priority access may be granted to operators providing essential services, such as those serving underserved areas, low-income populations, or critical transport corridors identified in the Metropolitan Transport Plan. The Authority shall also encourage operators to expand services to high-demand areas lacking adequate transport coverage.

(3) Revocation or Restriction of Access:

The Authority reserves the right to revoke or restrict access to public transport infrastructure if an operator is found to be in violation of the terms of use, fails to maintain compliance with service quality standards, or engages in unsafe practices.

Part 5: Public-Private Partnerships (PPPs)

Section 5.1: Role and Scope of PPPs in Kenya's Public Transport System

The Authority may engage in Public-Private Partnerships (PPPs) to develop, operate, and maintain public transport infrastructure and services across the Nairobi Metropolitan Area and other metropolitan regions. In the Kenyan context, this includes rail services operated by the Kenya Railways Corporation (KRC) and the planned Bus Rapid Transit (BRT) infrastructure. PPPs shall focus on expanding capacity, improving service delivery, and promoting modern technology, particularly in developing sustainable Mass Rapid Transit (MRT) systems.

These partnerships shall align with Kenya's Vision 2030 goals, the Bottom-Up Economic Transformation Agenda, and comply with the Public Private Partnerships Act, 2013 and the Kenya Railways Corporation Act.

Section 5.2: Strategic Planning and Coordination of PPPs

The Authority shall strategically plan and coordinate PPP projects to ensure their alignment with both national and metropolitan transport strategies. In particular, the MTA will work with KRC to support the integration of commuter rail services, including the use of KRC-managed buses for last-mile connectivity. Additionally, BRT systems, developed in collaboration with both county governments and private partners, shall be integrated with rail and other public transport systems to ensure seamless service delivery.

The National Transport and Safety Authority (NTSA) regulations shall apply to all vehicles operated under PPP agreements, ensuring safety and operational compliance.

Section 5.3: Governance Framework and Legal Compliance

The MTA shall adopt a transparent governance framework to manage PPPs, ensuring all projects comply with the Public Private Partnerships Act, 2013 and other relevant national laws. Private sector partners shall be selected through competitive procurement processes, based on their ability to deliver projects in line with the Kenya Vision 2030 objectives and the National Transport Policy.

This governance framework shall define clear roles and responsibilities for both public and private partners, including risk management, financial sustainability, and compliance with service delivery standards. Special consideration will be given to projects that integrate rail and bus services operated by KRC and future BRT systems.

Section 5.4: Risk Sharing and Financial Management

All PPP agreements shall include detailed provisions on risk-sharing between the Authority and private partners. In particular, private partners involved in the development of BRT infrastructure and KRC commuter services shall bear operational and financial risks associated with performance, while the MTA retains regulatory and policy-making roles. These agreements shall clearly define financial obligations, including the revenue-sharing mechanisms for services such as commuter rail, bus services, and BRT.

The Public Private Partnerships Act, 2013 shall govern the financial and risk management aspects of all PPP projects. Where applicable, the MTA may provide incentives, such as government subsidies or tax exemptions, to encourage private sector participation in infrastructure development.

Section 5.5: Monitoring, Evaluation, and Accountability

The Authority shall implement robust monitoring and evaluation mechanisms to ensure that PPP projects comply with Kenyan safety, environmental, and operational standards, as set out by the NTSA, Kenya Bureau of Standards (KEBS), and Kenya Railways Corporation Act. Private sector partners shall be required to submit regular performance and financial reports to the Authority.

The MTA will conduct periodic audits and inspections to ensure compliance with the contractual obligations and service quality standards, including safety measures for passengers using KRC-managed buses and the BRT system. Environmental compliance, especially regarding the reduction of carbon emissions, will be a key focus in monitoring efforts.

Section 5.6: Infrastructure Maintenance and Sustainability

The MTA shall ensure that all public transport infrastructure developed under PPP agreements, including BRT lanes, bus terminals, rail stations, and related commuter services, is maintained to high standards. These facilities must comply with the Kenya Railways Corporation Act, which mandates safety and operational efficiency for rail infrastructure, as well as NTSA regulations governing the safe operation of buses.

Maintenance schedules shall be included in all PPP agreements, with private partners required to adhere to the prescribed standards for safety, cleanliness, and accessibility. The Authority will oversee the long-term sustainability of the infrastructure, ensuring that it continues to meet the needs of the Nairobi Metropolitan Area and other metropolitan regions.

Section 5.7: Dispute Resolution and Termination

All PPP contracts shall include clear dispute resolution mechanisms, as outlined in the Public Private Partnerships Act, 2013. In case of disputes, parties may seek mediation or arbitration, with final recourse to Kenyan courts where necessary.

The Authority reserves the right to terminate contracts where private partners fail to meet key performance indicators (KPIs) or financial obligations. In the event of contract termination, the MTA shall ensure the continuity of commuter services, including those operated by KRC and the BRT system, to protect the public interest.

Section 5.8: Embracing Technological Innovation and Environmental Standards

The Authority shall prioritize PPP projects that integrate modern technology, such as smart ticketing, real-time passenger information systems, and automated fare collection, particularly for MRT systems like KRC commuter rail and BRT services. Additionally, the MTA will promote environmentally friendly projects in line with Kenya's commitment to reducing greenhouse gas emissions, as outlined in the Climate Change Act, 2016.

Operators involved in PPPs must adhere to sustainability standards, including the use of clean energy solutions where possible, and follow national and metropolitan guidelines for reducing the environmental impact of transport infrastructure and operations.

Section 5.9: Local Conditions Reflected in this Rewrite:

Integration of KRC Rail and Commuter Bus Services: The PPP framework reflects KRC's dual role in rail and bus transport, ensuring that these services are part of the strategic transport network.

BRT Infrastructure Development: Recognizing that BRT is under development, the PPP section emphasizes the need for private sector involvement in constructing and maintaining BRT infrastructure in compliance with local regulations.

Adherence to Kenyan Laws: The PPP section integrates compliance with relevant Kenyan laws, including the Public Private Partnerships Act, 2013, Kenya Railways Corporation Act, NTSA regulations, and Climate Change Act, 2016.

Sustainability and Technological Innovation: The section highlights Kenya's focus on reducing emissions and promoting technological innovations, such as smart ticketing systems and real-

time passenger information.

Part 6: Metropolitan Transport Planning

To ensure the effective planning and development of public transport infrastructure and services within the metropolitan area, the Authority shall be responsible for the preparation, review, and implementation of the Metropolitan Structure Plan and the Metropolitan Transport Plan. These plans shall serve as the framework for integrating land use, transport corridors, and public transport services in alignment with regional and national development strategies.

The plans shall be prepared in consultation with county governments, national authorities, and other relevant stakeholders, and shall be reviewed and updated periodically to reflect changes in population growth, transport demands, and land use policies.

Section 6.1: Metropolitan Structure Plan

1. Preparation and Maintenance:

The MTA shall prepare, maintain, and update a Metropolitan Structure Plan that provides a comprehensive framework for the spatial development of the metropolitan area. This plan shall serve as the basis for the long-term integration of public transport infrastructure with land use and other key urban planning factors, such as housing, economic growth, and environmental sustainability.

2. Purpose:

The Metropolitan Structure Plan shall: (a) Identify and delineate key transport corridors, growth zones, and transit-oriented development (TOD) areas within the metropolitan area; (b) Provide guidance for the development of transport infrastructure, including roads, railways, bus terminals, and other transit hubs; (c) Establish priorities for public transport investments and identify areas of future expansion based on population growth and regional development goals; (d) Integrate public transport planning with other urban planning initiatives, such as housing development, commercial zoning, and environmental protection policies.

3. Review and Update:

The Authority shall review and update the Metropolitan Structure Plan at least once every five years or as necessary to reflect changes in: (a) Land use patterns; (b) Transport demand; (c) Demographic and population shifts; (d) Regional and national development objectives.

4. Implementation Guidelines:

The Authority shall issue Guidelines outlining the detailed process for the preparation, review, and approval of the Metropolitan Structure Plan. These Guidelines shall: (a) Set forth the procedural requirements for stakeholder engagement, public consultation, and inter-agency coordination; (b) Provide for the use of planning data, including demographic studies, transport demand assessments, and environmental impact analyses; (c) Ensure that the planning process is transparent, inclusive, and aligned with the broader urban development strategies of the metropolitan area; (d) Establish the specific criteria and standards for evaluating and approving amendments to the Plan.

5. Regulatory Alignment:

All public transport infrastructure and land use developments within the metropolitan area shall be in conformity with the Metropolitan Structure Plan. The Authority shall work in coordination with relevant county governments and urban planning bodies to ensure that the Plan's objectives are reflected in local zoning laws and development regulations.

Section 6.2: Metropolitan Transport Plan

1. Preparation and Maintenance:

The MTA shall prepare, maintain, and update a Metropolitan Transport Plan, based on the Metropolitan Structure Plan, to provide a comprehensive and detailed framework for the development, operation, and management of public transport services within the metropolitan area. The Plan shall cover all modes of transport, including buses, rail, trams, non-motorized transport, and emerging transport technologies.

2. Purpose:

The Metropolitan Transport Plan shall serve as the central framework for ensuring the efficient, integrated, and sustainable operation of public transport services in the metropolitan area. The Plan shall: (a) Identify and plan for the development of key transport infrastructure projects, including transit routes, terminals, stations, and maintenance facilities, ensuring their alignment with broader land use and urban development objectives; (b) Establish a coherent and connected network of multi-modal transport services, ensuring seamless integration between buses, rail, trams, and other transport modes; (c) Promote the expansion of public transport services to underserved areas, ensuring equitable access to affordable and reliable transport across the metropolitan region; (d) Prioritize the use of environmentally sustainable and low-emission technologies in public transport systems, in alignment with the Authority's environmental

sustainability goals; (e) Facilitate the efficient movement of people and goods throughout the metropolitan area, supporting economic development and reducing traffic congestion.

3. Review and Update:

The Metropolitan Transport Plan shall be reviewed and updated at least every five years or as necessary to reflect: (a) Changes in transport demand due to population growth, shifts in employment centres, or regional development; (b) Technological advancements in public transport systems, including smart transport solutions, real-time data integration, and digital payment platforms; (c) Evolving land use patterns and urban development priorities, as outlined in the Metropolitan Structure Plan; (d) The need for additional infrastructure investments to accommodate growing demand or emerging transport needs; (e) The integration of environmental sustainability goals, including reductions in greenhouse gas emissions and the adoption of green transport technologies.

4. Implementation Guidelines:

The Authority shall issue Guidelines for the detailed preparation, implementation, and periodic review of the Metropolitan Transport Plan. These Guidelines shall: (a) Outline the procedures for stakeholder engagement, public participation, and coordination with relevant government agencies, transport operators, and civil society organizations; (b) Establish the standards and benchmarks for evaluating the performance, coverage, and efficiency of the public transport system; (c) Provide for the use of transport demand modeling, demographic analysis, and traffic flow assessments to inform transport planning decisions; (d) Ensure that the planning and development of transport infrastructure are in accordance with the Metropolitan Structure Plan, supporting long-term spatial development objectives; (e) Incorporate provisions for the adaptive management of transport services, allowing for flexible adjustments in response to changing conditions, such as population growth or unexpected disruptions.

5. Coordination with Other Plans and Agencies:

The Metropolitan Transport Plan shall be developed in coordination with other relevant plans, including but not limited to: (a) The Metropolitan Structure Plan, to ensure the alignment of transport and land use planning; (b) County government development plans, to facilitate seamless cooperation between local authorities and the Authority; (c) National and regional economic growth strategies, to ensure that transport services support broader economic development goals.

6. Funding and Resource Allocation:

The Metropolitan Transport Plan shall include provisions for the funding and resource allocation necessary to implement the proposed transport infrastructure and services. This may include: (a) Identification of funding sources, including public investment, public-private partnerships (PPPs), and international financing options; (b) Cost estimates for key infrastructure projects and public transport services; (c) Provisions for the maintenance and upgrading of existing transport infrastructure to ensure long-term operational efficiency and safety.

7. Regulatory Compliance:

All public transport developments and operations within the metropolitan area shall be in compliance with the Metropolitan Transport Plan. The Authority shall collaborate with county governments, national ministries, and other regulatory bodies to ensure that all transport infrastructure and services are developed in accordance with the standards and objectives set forth in the Plan.

Part 7: Monitoring and Compliance

Section 7.1: Oversight of Service Standards

The Authority shall oversee the compliance of all public transport operators with the service standards outlined in the Public Transport Act or other applicable laws and regulations.

The Authority shall have the power to inspect, audit, and monitor the performance of public transport services to ensure they meet prescribed quality, service, and operational standards, including punctuality, cleanliness, customer service, and fare collection.

Section 7.2: Performance Monitoring and Data Collection

The Authority shall monitor the performance of operators based on data submitted regularly, including but not limited to service frequency, passenger volume, and financial performance.

Regular data audits shall be conducted to verify the accuracy and completeness of the submitted reports.

Section 7.3: Enforcement of Compliance

Where operators fail to meet the required service standards, the Authority shall have the power to:

- (1) Issue warnings for first-time or minor violations.
- (2) Impose financial penalties for repeated or significant breaches of service agreements.
- (3) Revoke or suspend licenses in cases of persistent non-compliance.
- (4) All enforcement actions shall be conducted in accordance with the provisions of the Public Transport Act.

Section 7.4: Reporting, Transparency, and Data Confidentiality

1. Public Reporting and Transparency

The Metropolitan Transport Authority (MTA) is committed to maintaining transparency and public accountability in the public transport sector. To this end, the MTA shall publish regular reports on the compliance and performance of public transport operators. These reports shall include, but are not limited to:

(1) Operational Performance:

Data on passenger volumes, service reliability, adherence to schedules, and major service disruptions.

(2) Fleet Compliance:

Safety records and emissions compliance of the public transport fleet, including regular inspections and vehicle certification results.

(3) Financial Summaries:

Aggregated and anonymized financial data, including revenue collection, operational costs, subsidies, and any other relevant financial information.

The MTA shall also provide a mechanism for public feedback on service quality and performance, which shall be integrated into the ongoing monitoring and reporting process to improve accountability and service delivery.

2. Data Confidentiality

In line with the Data Protection Act, 2019 and other applicable data privacy laws, the MTA is committed to ensuring the protection of individual operator data and personal information. The following provisions apply:

(1) Protection of Individual Data:

Financial data of individual operators, as well as personal information of drivers, conductors, and other staff, shall be kept confidential. Disclosure of such data shall be strictly regulated and only allowed under authorized circumstances.

(2) Legal Exceptions:

The disclosure of individual operator data or personal information shall only occur when required by law, such as in the context of audits, investigations, or legal proceedings conducted by regulatory or enforcement authorities.

3. Reporting Frequency

The MTA shall adhere to the following reporting timelines to ensure consistent and transparent communication of its oversight activities:

(1) Annual Reports:

The MTA shall publish an annual report summarizing the overall performance of the public transport sector. This report will cover key operational metrics, fleet safety, and financial performance, ensuring comprehensive accountability.

(2) Ad-hoc Reports:

The MTA may publish ad-hoc reports on specific issues, such as compliance with environmental standards, safety audits, or incidents that significantly affect service delivery. These reports shall be released as needed to keep stakeholders informed.

4. Public Accessibility

All reports shall be made publicly accessible through the MTA's official website, at key transport hubs, and at public offices. The reports shall be presented in a clear and understandable format for the general public, with detailed data available for industry stakeholders and regulators.

5. Mechanism for Public Feedback

The MTA shall establish and maintain a mechanism for public feedback regarding service quality and performance. This feedback shall be integrated into the Authority's monitoring process, allowing for regular review and improvement of public transport services based on passenger experiences and concerns.

Part 8: Monitoring and Enforcement of Safety, Security, and Environmental Standards

This title better encapsulates the dual focus on safety and environmental standards, while also allowing room for security concerns.

Section 8.1: Oversight of Metropolitan-Specific Safety Standards

The Authority shall oversee the implementation of metropolitan-specific safety standards in public transport operations, ensuring that public transport infrastructure and services adhere to safety protocols unique to the metropolitan environment.

Focus areas include but are not limited to:

- (1) Safety at high-traffic intermodal hubs (e.g., BRT stations, train stations).
- (2) Pedestrian and non-motorized transport (NMT) safety in and around major transport corridors and hubs.
- (3) Prevention of overcrowding in public transport vehicles, particularly during peak hours.

Section 8.2: Coordination with NTSA and Other Authorities

- (1) The Authority shall coordinate with the National Transport and Safety Authority (NTSA) to ensure compliance with national safety standards for public transport, including vehicle safety, driver qualifications, and road safety measures.
- (2) The Authority shall collaborate with the National Police Service, local enforcement, and emergency response teams to ensure quick responses to accidents, emergencies, and any security incidents within the metropolitan transport system.

Section 8.3: Safety Inspections and Audits

The Authority shall conduct regular safety audits and inspections of public transport infrastructure, such as BRT stations, bus depots, ferry docks, and pedestrian crossings.

The focus of these inspections will be:

- (1) Ensuring the safety of passengers, particularly in high-risk urban environments.
- (2) Identifying and mitigating safety risks in areas with heavy passenger traffic. Joint

inspections may be conducted with the NTSA to verify compliance with national safety regulations, particularly in areas identified as high-risk.

Section 8.4: Public Safety Campaigns and Passenger Education

The Authority shall launch public safety campaigns addressing urban-specific risks, such as:

- (1) Safe pedestrian crossings near transport hubs.
- (2) Boarding and alighting procedures for buses, trams, and ferries.
- (3) Emergency response protocols for passengers. Educational materials and safety signage shall be prominently displayed at major transport hubs, emphasizing passenger safety during peak hours and in crowded areas.

Section 8.5: Environmental Standards

1. Compliance with National Emissions Regulations

All public transport operators within the metropolitan area shall comply with the national emissions standards set by the National Environmental Management Authority (NEMA) and the NTSA.

Vehicle emissions must meet the requirements set forth in the Environmental Management and Coordination Act (EMCA) of 1999 and its subsequent regulations related to air quality.

2. Promotion of Low-Emission and Eco-Friendly Vehicles

The Authority shall promote the use of low-emission and eco-friendly vehicles, including electric buses, hybrid vehicles, and vehicles powered by clean fuel technologies.

This shall be in line with national climate policies and the goal of reducing the environmental footprint of public transport services.

Section 8.6: Adoption of Sustainable Practices

1. Sustainability Requirements for Public Transport Operators

All public transport operators within the metropolitan area shall be required to adopt sustainable practices aimed at reducing environmental impact, including:

(1) Use of energy-efficient vehicles or vehicles powered by low-emission technologies such as electric or hybrid systems.

- (2) Implementation of waste reduction strategies through responsible resource management and recycling initiatives.
- (3) Adoption of technologies that minimize carbon emissions and improve fuel efficiency.

2. Authority's Role in Promoting Sustainability

The Authority shall create programs to incentivize the adoption of sustainable practices by public transport operators.

Incentives may include financial support, such as subsidies, tax exemptions, or preferential access to public transport infrastructure, for operators who meet sustainability targets. (2) The Authority shall regularly monitor public transport operators for compliance with these sustainability practices and may impose penalties or corrective measures for non-compliance.

3. Section 9.7: Environmental Impact Assessments (EIAs) and Environmental Impact Statements (EISs)

(1) Compliance with National Environmental Laws

All transport infrastructure development projects initiated by the Authority, including the construction of new terminals, bus depots, and rail lines, must comply with the Environmental Impact Assessment (EIA) and Environmental Impact Statement (EIS) requirements stipulated in the Environmental Management and Coordination Act (EMCA) of 1999. (2) EIAs and EISs must be conducted in accordance with guidelines issued by NEMA to ensure that all potential environmental impacts are properly assessed and mitigated before the project begins.

(2) Consultation with NEMA

The Authority shall collaborate with NEMA and other environmental agencies during the planning and execution of infrastructure projects to ensure full compliance with national environmental laws and regulations. (2) Projects likely to have a significant environmental impact shall undergo thorough review and implement necessary mitigation measures to minimize ecological disruption.

Part 9: Disaster Management and Emergency Response

The MTA shall establish comprehensive disaster management and emergency response procedures to safeguard public transport systems against a wide range of threats. These threats include natural disasters, traffic accidents, terrorist attacks, civil unrest, and other man-induced disasters. Given the critical role public transport infrastructure plays in urban mobility, ensuring preparedness for such

incidents is essential for maintaining the safety of passengers, operators, and the continuity of services. In coordination with the National Disaster Management Authority (NDMA), National Police Service, county disaster management agencies, and other relevant bodies, the MTA shall ensure that all public transport services are equipped to respond swiftly and effectively to any emergency situation, whether natural or man-made.

Section 9.1: Disaster Preparedness

1. Coordination with National, County, and Transport Authorities:

The MTA shall collaborate with the National Disaster Management Authority (NDMA), county disaster management agencies, the Kenya Railways Corporation (KRC), and other relevant public safety organizations to ensure that disaster preparedness measures are integrated into public transport operations. These measures shall address a wide range of potential threats, including traffic accidents, natural disasters, terrorism, civil unrest, and other man-induced disasters, in accordance with the National Policy for Disaster Management, the Occupational Safety and Health Act, and any other applicable regulations.

2. Development of Comprehensive Disaster Preparedness Plans:

The MTA, in conjunction with county governments and transport operators, including KRC, shall develop and maintain disaster preparedness plans for public transport systems, including buses, BRT, and railway services. These plans shall include risk assessments, early warning systems, and emergency response procedures for various scenarios, such as traffic accidents, natural disasters, terrorist attacks, and civil unrest at public transport hubs.

3. Training and Drills for Transport Operators:

The MTA shall ensure that all public transport staff, including those operating buses, BRT, and rail services, receive regular training on disaster preparedness. This training shall include protocols for handling emergencies related to traffic accidents, security threats, and natural or man-induced disasters. The MTA shall coordinate periodic drills with the NTSA, KRC, and county governments to test the effectiveness of the preparedness plans.

4. Stockpiling of Emergency Supplies at Transport Hubs:

The MTA, in collaboration with relevant agencies, including KRC, shall ensure that essential emergency supplies, such as first aid kits, fire extinguishers, and emergency communication equipment, are available at key public transport hubs. These supplies shall be maintained in accordance with the Occupational Safety and Health Act and any other relevant safety standards.

5. Integration with Broader Urban Emergency Planning:

The MTA shall ensure that public transport disaster preparedness is fully integrated into broader urban emergency planning efforts led by national and county disaster management bodies. This integration is crucial for ensuring that public transport systems can support evacuation efforts, ensure passenger safety, and maintain continuity of services during emergencies, including those caused by terrorism, riots, or natural disasters.

Section 9.2: Emergency Response Procedures

1. Traffic Accidents and Mechanical Failures:

The MTA shall establish response procedures for handling traffic accidents and mechanical failures involving public transport vehicles, including buses, BRT, and trains. In coordination with the NTSA and county authorities, the MTA shall ensure that first responders, transport operators, and passengers are guided through efficient emergency protocols, including evacuation, medical assistance, and traffic management. These procedures shall be regularly updated and tested through drills.

2. Natural Disasters:

In the event of natural disasters, such as floods, earthquakes, or landslides, the MTA shall implement pre-established emergency protocols designed to protect public transport users and staff. The MTA shall collaborate with the National Disaster Management Authority (NDMA) and county disaster management agencies to reroute or suspend services as needed, ensuring that public transport systems contribute to the evacuation and safe relocation of affected populations. Clear communication systems shall be in place to inform passengers of changes or disruptions to transport services.

3. Terrorism and Security Threats:

The MTA, in collaboration with the National Police Service, Kenya Railways Corporation (KRC), and other relevant security agencies, shall establish and implement emergency response protocols for terrorist attacks or other security threats at public transport hubs, including bomb threats and active shooter incidents. These protocols shall include immediate evacuation procedures, communication with law enforcement, and measures to ensure the safety of passengers and transport staff. All Operators shall be trained to identify and report suspicious activities.

4. Civil Unrest and Riots:

In the event of civil unrest, demonstrations, or riots that pose a risk to public safety, the MTA shall coordinate with county governments, law enforcement, and Operators to suspend or reroute services to avoid conflict zones. The MTA shall ensure that real-time information is communicated to passengers and that safe evacuation routes are established where necessary. Public transport services may be used to support the evacuation of individuals from affected areas in collaboration with law enforcement.

5. Man-Induced Disasters:

The MTA shall develop and enforce protocols for handling other man-induced disasters, such as fires, chemical spills, or industrial accidents, that may affect public transport operations. This includes securing transport hubs and ensuring the safety of passengers and operators while coordinating with relevant agencies, such as county fire departments and the National Environmental Management Authority (NEMA), to manage the situation.

6. Emergency Communication Systems:

The MTA shall establish reliable and accessible emergency communication systems across all public transport hubs and within transport vehicles. These systems shall allow for immediate alerts and updates to passengers and staff in the event of an emergency. Information shall be disseminated via digital platforms, public announcements, and coordination with local and national media outlets.

7. Post-Emergency Recovery and Continuity of Services:

Following an emergency, the MTA, in collaboration with Operators and relevant agencies, shall implement recovery plans to restore services as quickly as possible. These plans shall include the repair of damaged infrastructure, resumption of transport services, and communication with the public regarding the restoration of normal operations. The MTA shall also ensure that post-incident reviews are conducted to improve future response protocols.

This version outlines a comprehensive emergency response framework for different types of emergencies and ensures coordination with national and county agencies.

Section 9.3: Continuity of Public Transport Services

1. Pre-Disaster Continuity Planning:

The MTA shall develop and maintain continuity plans that ensure public transport services can

resume promptly following any emergency or disaster. These plans shall be integrated into broader disaster preparedness strategies and shall consider the potential for damage to infrastructure, vehicles, and transport hubs. Continuity planning shall include provisions for alternative routes, emergency vehicle deployment, and the rerouting of services to minimize disruption.

2. Collaboration with Operators:

The MTA shall collaborate with Operators, including Kenya Railways Corporation (KRC) and BRT operators, to ensure that contingency plans are in place for the rapid restoration of transport services after a disruption. These contingency plans shall address service restoration, infrastructure repair, and the redeployment of vehicles. Operators must be prepared to adjust schedules, provide alternative services, and work with local authorities to facilitate the safe and efficient movement of passengers.

3. Priority for Critical Transport Services:

During and immediately after an emergency, the MTA shall prioritize the continuation of critical transport services, particularly those that serve essential facilities such as hospitals, disaster relief centers, and evacuation routes. Public transport services may also be temporarily repurposed to support emergency response efforts, such as transporting relief personnel and supplies.

4. Communication and Public Information:

The MTA shall ensure that passengers and operators are informed of any changes to public transport services in real-time, using a combination of digital platforms, public announcements, and media updates. Clear communication regarding alternative routes, service interruptions, and timelines for service restoration shall be made available to ensure passengers are aware of the situation and can plan accordingly.

5. Post-Emergency Service Restoration:

Once an emergency subsides, the MTA, in coordination with transport operators and local authorities, shall initiate post-emergency service restoration efforts. This includes inspecting and repairing damaged infrastructure, resuming regular routes, and communicating the return to normal operations. The MTA shall ensure that service restoration prioritizes high-demand routes and areas most affected by the emergency, while gradually restoring full service.

6. Regular Review of Continuity Plans:

Continuity plans shall be reviewed and updated periodically to reflect changes in infrastructure, technology, and disaster management strategies. The MTA shall also incorporate lessons learned from previous emergencies to enhance the effectiveness of continuity planning. Feedback from transport operators, passengers, and emergency management agencies shall be considered during these reviews.

Section 9.4: Public Awareness and Transport Services

1. Collaboration with County Governments and National Agencies:

The MTA shall work closely with county governments, the National Disaster Management Authority (NDMA), the National Police Service, and other relevant agencies to ensure that public awareness campaigns are aligned with national disaster preparedness strategies. These campaigns shall focus on educating the public on the importance of disaster preparedness and the role of public transport systems during emergencies.

2. Engagement with Educational Institutions:

In collaboration with county governments and the Ministry of Education, the MTA shall conduct regular disaster preparedness workshops and drills in schools and educational institutions. These activities shall be designed to educate students on the safe use of public transport during emergencies and to build awareness about the protocols for evacuation, emergency communication, and safety during disasters.

3. Public Information Campaigns:

The MTA, in partnership with local and national media, shall lead public information campaigns aimed at raising awareness about disaster preparedness and response in the public transport system. These campaigns shall include guidance on how passengers can stay informed during emergencies, access safe evacuation routes, and utilize emergency communication systems at transport hubs.

4. Engagement with Vulnerable Groups:

Special emphasis shall be placed on engaging vulnerable populations, including people with disabilities, the elderly, and children, in disaster preparedness programs. The MTA shall work with county governments and community organizations to ensure that these groups are informed about accessible evacuation procedures, safety protocols, and transport options available to them during emergencies.

5. Collaboration with Schools and Community Centres:

The MTA shall partner with schools, community centres, and other public institutions to promote disaster preparedness through workshops, seminars, and training sessions. These events shall be tailored to different segments of the population and will provide hands-on instruction on how to react during emergencies, use public transport services safely, and access emergency resources.

6. Annual Disaster Preparedness Drills:

The MTA, in conjunction with NTSA, county governments, and local law enforcement, shall conduct annual public disaster preparedness drills at major transport hubs, such as BRT stations and railway terminals. These drills will simulate emergency scenarios and train both passengers and transport staff on how to respond effectively in a crisis situation.

7. Feedback and Continuous Improvement:

The MTA shall establish mechanisms for gathering feedback from the public, schools, and other stakeholders on the effectiveness of disaster preparedness campaigns and training programs. This feedback will be used to continuously improve public awareness efforts, ensuring that the public is informed, prepared, and confident in using public transport services during emergencies.

This version emphasizes collaboration with various agencies, county governments, schools, and community groups to raise public awareness and preparedness for emergencies affecting public transport.

Section 9.5: Reporting and Investigation of Disasters

1. Coordination with Existing National and County Mechanisms:

The MTA shall support and cooperate with existing national and county disaster reporting and investigation mechanisms, including those established by the National Disaster Management Authority (NDMA), the National Police Service, and relevant county disaster management bodies. The MTA shall promptly report any disaster or major incident affecting public transport services to these agencies.

2. Immediate Incident Reporting:

In the event of a disaster or major incident involving public transport, Operators and MTA staff shall immediately notify the appropriate national or county emergency services, such as the police, fire department, or medical emergency response teams. The MTA's role shall be limited to facilitating communication and coordination between transport operators and relevant emergency response agencies.

3. Investigation of Disasters Involving Public Transport:

The investigation of disasters, including traffic accidents, natural disasters, or terrorist attacks affecting public transport, shall remain under the jurisdiction of the appropriate investigative bodies, such as the NTSA, the Directorate of Criminal Investigations (DCI), and county law enforcement. The MTA shall cooperate fully with these agencies, providing any necessary data, operational records, or technical expertise related to public transport operations.

4. Submission of Reports:

The MTA shall assist in compiling reports on disasters and incidents affecting public transport services, ensuring that all relevant data from operators, passengers, and staff is made available to the national and county authorities responsible for the investigation. These reports shall include incident details, response timelines, and any information required for subsequent legal or regulatory actions.

5. Recommendations and Corrective Measures:

Following the completion of an investigation by the relevant authorities, the MTA shall collaborate with Operators to implement any corrective measures or recommendations made by the investigative bodies. These recommendations may relate to improving safety standards, updating emergency response protocols, or enhancing communication and coordination during disasters.

Public Communication of Findings:

The MTA shall work with national and county authorities to ensure that the findings of disaster investigations affecting public transport are communicated to the public in a timely and transparent manner. This may include the publication of investigation summaries, safety recommendations, and any changes in public transport operations resulting from the incident.

Part 10: Financial Framework and Funding

Section 10.1: Management of Fare Revenue

1. Collection and Management of Fare Revenue:

The Authority shall oversee the collection of fare revenue from all public transport operators within the Metropolitan Area.

Modern fare collection systems, such as electronic ticketing, smart cards, and mobile payments, shall be employed to ensure efficiency, transparency, and ease of use for passengers.

Revenue collected from fares shall be managed by the Authority in accordance with its financial management policies and applied to the operation, maintenance, and expansion of public transport services and infrastructure.

2. Revenue Distribution:

The Authority shall establish policies for distributing fare revenue among public transport operators to ensure the financial sustainability of services. These policies shall account for operational costs, service frequency, and adherence to service quality standards.

Fare revenue may also be used to subsidize services in underserved or economically disadvantaged areas, ensuring equitable access to public transport for all residents of the Metropolitan Area.

3. Fare Revenue Transparency:

The Authority shall maintain transparent systems for monitoring and reporting fare revenue. Detailed reports on fare collection and revenue allocation shall be published periodically and made available to the public and relevant stakeholders.

Section 10.2: Public Transport Fund

1. Establishment of the Public Transport Fund:

There is hereby established a Public Transport Fund, which shall be administered by the Authority.

The purpose of the Public Transport Fund is to support the development, maintenance, and operation of public transport infrastructure and services within the Metropolitan Area.

2. Sources of Funding:

The Public Transport Fund shall receive financial resources from the following sources:

- (1) Fare revenue collected from public transport services.
- (2) National government allocations for public transport development and operations.
- (3) County government contributions as part of their cooperation with the Authority.
- (4) Levies or charges on public transport operators as prescribed by regulations.
- (5) Grants, loans, and donations from international financial institutions or development partners.
- (6) Public-Private Partnerships (PPPs) and revenue generated through infrastructure leasing, advertising, or other financial agreements.

3. Administration of the Fund:

The Authority shall manage the Public Transport Fund, ensuring that resources are allocated efficiently and transparently for the intended purposes.

Disbursements from the fund shall be approved by the Authority's Board, with oversight from representatives of national and county governments, as well as relevant stakeholders.

4. Use of the Public Transport Fund:

The Fund shall be used to finance:

- (1) The development, upgrading, and maintenance of public transport infrastructure (e.g., roads, BRT lanes, railways, stations, and terminals).
- (2) Operational subsidies for public transport operators to maintain affordability and accessibility.
- (3) Projects promoting the use of environmentally sustainable public transport systems.
- (4) Emergency situations affecting public transport infrastructure or services.

5. Fund Transparency and Reporting:

The Authority shall maintain transparent accounting systems for the Public Transport Fund.

Detailed reports on the fund's income, expenditures, and financial status shall be published annually and made available to the public.

Section 10.3: Government Subsidies

1. Subsidies for Public Transport Services:

The Authority may receive financial support from the national government and/or county governments in the form of subsidies to ensure the affordability and accessibility of public transport services.

These subsidies may be used to reduce operational costs, provide concessionary fares for vulnerable populations, or fund infrastructure development projects critical to expanding and improving public transport networks.

2. Subsidy Allocation and Management:

The Authority shall manage government subsidies in a transparent and accountable manner, ensuring that funds are used efficiently and for their intended purposes, such as enhancing service coverage or maintaining fare affordability for low-income passengers.

The Authority shall regularly report on the use of subsidies, with detailed financial statements showing how these funds are applied to public transport operations and infrastructure development.

Section 10.4: Financial Strategies and Revenue Generation

1. Revenue Diversification:

In addition to fare collection and government subsidies, the Authority shall explore additional revenue streams to ensure long-term financial sustainability. These may include:

- (1) Public-Private Partnerships (PPPs): Collaborations with private sector entities for the development, maintenance, or operation of transport infrastructure and services.
- (2) Advertising and Sponsorships: Generating revenue through advertisements on public transport vehicles, stations, and terminals, as well as securing sponsorship deals for transport-related projects.
- (3) Leasing or Concession Agreements: Leasing of public transport facilities (e.g., terminals, parking lots) to private operators or entering into concession agreements for specific routes

or services.

2. Financial Sustainability:

The Authority shall adopt prudent financial management practices to ensure the sustainability of public transport services. This includes cost-control measures, revenue optimization strategies, and ongoing financial performance monitoring.

Regular financial reviews shall be conducted to assess the Authority's financial position and explore opportunities for efficiency improvements.

3. Funding for Infrastructure Development:

The Authority shall secure funding for the development, upgrading, and maintenance of public transport infrastructure through a combination of government grants, loans, and public-private partnerships.

The Authority may also explore international funding opportunities, including grants and lowinterest loans from multilateral financial institutions and development partners, for large-scale infrastructure projects.

Section 10.5: Financial Reporting and Accountability

1. Annual Financial Reporting:

The Authority shall publish annual financial reports detailing its income, expenditures, and financial position. These reports shall be submitted to relevant government authorities and made publicly available.

2. Audits and Transparency:

The Authority's financial statements, including those related to the Public Transport Fund, shall be subject to regular internal and external audits to ensure transparency and accountability. Audits will verify that funds are used appropriately and in compliance with applicable laws and regulations.

Part 11: Service Planning and Development

Section 11.1: Service Frequency

1. Establishing Minimum Service Frequency:

The Authority shall set minimum service frequency standards for public transport services, including buses and the planned Bus Rapid Transit (BRT) systems, to ensure that passengers have access to reliable and regular services.

Frequency standards shall be based on route demand, time of day, and operational priorities, with higher frequencies during peak hours. Special attention will be given to coordinating service times with the operation of Kenya Railways commuter services to optimize passenger flow and minimize wait times for transfers between these systems.

2. Service Availability in Underserved Areas:

The Authority shall ensure that public transport services, especially buses, are available in underserved areas, including peripheral regions and low-income neighbourhoods, with the possibility of connecting these areas to railway stations and BRT corridors for seamless travel.

Financial incentives or subsidies may be provided to operators extending services to these areas.

3. Monitoring and Adjusting Frequency:

The Authority will monitor service frequency and passenger demand patterns continuously. Adjustments may be made to schedules, particularly around railway stations, to align bus and BRT services with train schedules for optimal connectivity.

Section 11.2: Transport Mode Integration

1. Integration with Existing Kenya Railways Services:

The Authority shall ensure the integration of public transport modes, including buses, the planned BRT system, and existing Kenya Railways commuter services, to create a coordinated transport network within the Metropolitan Area.

Synchronization between BRT and railway operations will be prioritized to minimize transfer times at key interchange points, ensuring that passengers can transition between bus/BRT and train services efficiently.

The Authority will work closely with Kenya Railways Corporation to harmonize timetables and

operations, enhancing overall efficiency without duplicating services.

2. Development of Multi-Modal Transport Hubs:

The Authority shall prioritize the development of multi-modal transport hubs at key locations, especially near major railway stations, to facilitate smooth transfers between train services, BRT, and bus networks.

These hubs will be designed to handle high volumes of passengers and ensure that the transfer between railway services and other public transport modes is seamless and efficient.

3. Unified Fare and Ticketing System:

The Authority will work towards integrating the fare systems of public transport modes, including BRT, buses, and, where possible, Kenya Railways commuter services.

This integration will ensure that passengers can transfer between modes using a single fare system, providing a convenient and efficient travel experience.

4. Coordination with National Transport Authorities:

The Authority shall coordinate with national transport bodies, particularly Kenya Railways Corporation, to ensure that local bus/BRT services complement rather than compete with railway services.

Long-term planning will involve collaboration with Kenya Railways to ensure that future expansions of both BRT and railway systems are aligned to meet the needs of the Metropolitan Area.

Section 11.3: Strategic Service Development

1. Long-Term Service Planning:

The Authority shall develop long-term public transport service plans that take into account the expansion of the BRT network and the current and potential future role of Kenya Railways in metropolitan transport.

Planning will ensure that railway stations are key nodes in the transport network, with BRT and bus services designed to provide first-mile and last-mile connectivity to the railway system.

2. Demand Forecasting and Mobility Assessments:

The Authority shall conduct regular demand forecasting and mobility assessments to ensure that public transport services meet future needs. This includes understanding the potential for increased use of both BRT and railway services as urban development intensifies.

Assessments will guide decisions on where to expand BRT routes and improve connectivity with railway services, optimizing resource allocation and infrastructure development.

3. Incorporating Future Transport Technologies:

While focusing on the current integration of buses, BRT, and railways, the Authority will remain open to the introduction of new technologies such as real-time passenger information systems, smart ticketing, and electric or low-emission vehicles.

These technologies will be considered in future service development to enhance the efficiency and sustainability of the integrated transport network.

Section 11.4: Public Consultation and Feedback Mechanisms

1. Engagement with Stakeholders:

The Authority shall engage with public transport operators, passengers, businesses, and civil society organizations during the service planning process. Special attention will be given to gathering feedback on the integration of BRT services with Kenya Railways operations to ensure that passenger needs are met.

Public consultations will be conducted on proposed changes to routes, schedules, and services, especially when they involve key interchange points between BRT, bus, and rail services.

2. Ongoing Feedback Mechanisms:

The Authority shall establish ongoing feedback mechanisms, including online portals and mobile apps, to gather passenger input on the performance of integrated services.

Feedback from these mechanisms will inform service adjustments and improvements, particularly regarding synchronization between BRT and railway services.

Section 11.5: Environmental Considerations in Service Planning

1. Sustainable Service Development:

The Authority will prioritize sustainable public transport solutions, including the adoption of electric buses and low-emission vehicles in the BRT system, to minimize the environmental impact of the public transport network.

Service development plans will ensure that new infrastructure, especially multi-modal hubs, is designed with environmental sustainability in mind, aligning with national climate goals and urban sustainability objectives.

2. Integration of Non-Motorized Transport:

The Authority shall integrate non-motorized transport options (e.g., cycling and walking) into the overall public transport planning, particularly near railway stations and BRT corridors. Infrastructure such as bike lanes and pedestrian walkways will be developed alongside public transport services to promote sustainable urban mobility.

Section 11.6: Regulation of Taxi and Boda Boda Operations at Transport Nodes

1. Designated Zones for Taxis and Boda Bodas

The Authority shall, in consultation with the National Transport and Safety Authority (NTSA) and relevant county governments, designate restricted zones for the operation of taxis and boda bodas at all major public transport nodes, including but not limited to:

- (1) Bus Rapid Transit (BRT) stations,
- (2) Railway stations,
- (3) Main bus terminals, and
- (4) Other high-traffic public transport hubs.

Taxis and boda bodas shall operate only within the designated bays and stages established by the Authority at these transport hubs to ensure the orderly and efficient flow of traffic and passengers.

2. Taxi Bays and Boda Boda Stages at Transport Nodes

The Authority shall establish and maintain appropriate taxi bays and boda boda stages at the

designated public transport nodes, ensuring that:

- (1) These zones are clearly marked and provide adequate space for passenger pick-up and dropoff.
- (2) The number of taxis and boda bodas operating in these zones is regulated to prevent overcrowding and ensure efficient service.
- (3) The zones are designed to facilitate safe and convenient transfers between public transport modes, including BRT, rail, and buses.

3. Operational Guidelines for Taxis and Boda Bodas

The Authority shall issue operational guidelines for taxis and boda bodas operating within the designated zones, which may include:

- (1) Hours of operation, ensuring that taxis and boda bodas adhere to set schedules at high-demand transport nodes.
- (2) Requirements for taxis and boda bodas to comply with NTSA safety standards, including vehicle inspections, proper insurance, and the use of helmets for boda boda passengers.
- (3) The establishment of fare regulations, ensuring that passengers are charged fair and reasonable rates for trips originating from transport hubs.

4. Coordination with NTSA and County Governments

The Authority shall work in coordination with the NTSA and county governments to ensure that all taxis and boda bodas operating within the designated zones at transport hubs are compliant with:

- (1) Licensing and regulatory requirements set by the NTSA.
- (2) County-level laws that govern the operation of taxis and boda bodas, including the enforcement of designated parking areas and operational zones.

The Authority may enter into agreements with county governments to delegate certain responsibilities related to the enforcement of operational standards for taxis and boda bodas at transport hubs.

5. Penalties for Non-Compliance

The Authority shall impose penalties on any taxi or boda boda operator found operating outside the designated zones or failing to comply with the operational guidelines. Penalties may include:

- (1) Fines as prescribed by the regulations.
- (2) Suspension or revocation of operating licenses in collaboration with the NTSA.
- (3) Temporary or permanent banning from transport hubs for repeat violations.

The Authority shall ensure that these penalties are enforced in a manner that promotes compliance and maintains the safety and efficiency of public transport services at major transport nodes.

Part 12: Accessibility and Inclusivity

Section 12.1: Universal Design Standards

1. Adoption of Universal Design Principles:

The MTA shall ensure that all public transport infrastructure and vehicles within the metropolitan area adhere to universal design principles. These principles aim to make public transport usable by all people, regardless of age, ability, or other factors, without the need for adaptation or specialized design.

2. Accessible Public Transport Infrastructure:

The MTA, in collaboration with relevant national and local authorities, shall ensure that public transport stations, terminals, and vehicles are designed to be accessible to persons with disabilities and other vulnerable groups. Key accessibility features shall include:

- (1) Wheelchair ramps and elevators at stations and terminals.
- (2) Wide doorways and low-floor buses to facilitate easy boarding for all passengers.
- (3) Tactile paving for the visually impaired, guiding them safely to and within public transport facilities.
- (4) Audible and visual information systems to assist passengers with hearing and visual impairments.

3. Compliance with National Accessibility Laws:

All public transport infrastructure and services must comply with the Persons with Disabilities Act and other relevant national legislation. The MTA will work closely with Operators and local authorities to ensure adherence to these laws, incorporating accessibility as a fundamental aspect of public transport planning and operations.

4. Ongoing Review and Upgrades:

The MTA shall periodically review the accessibility of public transport services to ensure continuous improvement. As new technologies and design innovations emerge, the MTA will update and upgrade infrastructure and vehicles to maintain compliance with universal design standards and improve accessibility for all users.

Section 12.2: Inclusive Services and Accessible Infrastructure

1. Provision of Inclusive Services:

Operators within the metropolitan area shall ensure that their services are inclusive and accessible to all passengers, including persons with disabilities (PWDs), the elderly, and other vulnerable groups. This includes:

- (1) Priority seating: Designated seating for passengers with disabilities, the elderly, and pregnant women.
- (2) Assistance services: Providing trained staff to assist passengers with special needs at stations, terminals, and on vehicles.

2. Accessible Infrastructure Requirements:

The MTA, in collaboration with local and national authorities, shall ensure that all public transport infrastructure is designed and maintained to meet the needs of all users. This includes:

- (1) Accessible ticketing systems: Ensuring that ticketing machines and online payment systems are usable by passengers with disabilities.
- (2) Barrier-free access: All stations, terminals, and transit hubs must be equipped with ramps, elevators, and other necessary features to facilitate easy movement for passengers with limited mobility.
- (3) Clear signage: Signage at public transport facilities must include both visual and tactile

formats, making it accessible to passengers with visual and hearing impairments.

3. Collaboration with Stakeholders:

The MTA shall work closely with organizations representing PWDs, the elderly, and other vulnerable groups to continuously improve accessibility and inclusivity in public transport. This collaboration will involve regular consultations and feedback mechanisms to ensure that transport services are responsive to the needs of all passengers.

4. Monitoring and Enforcement of Accessibility Standards:

The MTA shall monitor compliance with accessibility standards and take enforcement action where necessary. Regular audits of public transport services and infrastructure will be conducted to ensure that operators are adhering to these requirements, with penalties imposed for non-compliance.

Section 12.3: Incentives for Providing Accessible Services

1. Financial Incentives for Operators:

The MTA shall establish financial incentives to encourage Operators to provide accessible services. These incentives may include:

- (1) Subsidies or grants for the purchase or retrofitting of vehicles to meet accessibility standards, such as low-floor buses or wheelchair ramps.
- (2) Tax breaks or reduced fees for operators who consistently meet or exceed accessibility requirements.
- (3) Access to preferential routes for operators who demonstrate a commitment to providing inclusive services for all passengers, including persons with disabilities (PWDs), the elderly, and other vulnerable groups.

2. Public Recognition and Awards:

The MTA shall publicly recognize operators who provide exemplary accessible services. This recognition may include:

- (1) Annual awards for the most accessible public transport services.
- (2) Public acknowledgment through MTA publications, websites, and public transport hubs.

(3) Priority consideration for government contracts or partnerships for operators who demonstrate a commitment to maintaining high accessibility standards.

3. Capacity Building and Technical Support:

The MTA shall offer technical support and training to operators to assist them in meeting accessibility standards. This may include:

- (1) Workshops and training programs on inclusive service provision and universal design principles for transport staff, drivers, and operators.
- (2) Guidelines and technical assistance on vehicle modifications and infrastructure improvements to meet accessibility requirements.

4. Incentives for Innovation in Accessibility:

The MTA shall encourage innovation in accessible services by offering special incentives to operators who introduce new, innovative solutions for accessibility. This may include:

- (1) Research and development grants for projects aimed at improving accessibility through technology, such as apps for disabled passengers or real-time accessibility information systems.
- (2) Pilot programs for testing new accessibility solutions, with successful projects eligible for expanded funding and support.

Section 12.4: Accessibility Standards in Future Projects

1. Integration of Accessibility in Future Infrastructure Projects:

All future public transport infrastructure projects within the metropolitan area must incorporate accessibility standards from the design phase onward. The MTA shall ensure that new stations, terminals, and transport facilities meet or exceed the accessibility requirements set forth in this Act and other relevant national laws, such as the Persons with Disabilities Act. This includes:

- (1) Universal design principles that make infrastructure usable by all passengers, regardless of ability.
- (2) Accessible entry points, such as ramps, elevators, and wide doorways, ensuring barrier-free access.

(3) Visual and tactile signage, as well as audible announcements, to assist passengers with disabilities.

2. Accessible Public Transport Vehicles:

Future procurement of public transport vehicles, including buses, trains, and BRT vehicles, must comply with accessibility standards, such as:

- (1) Low-floor designs to facilitate easy boarding and disembarking for passengers with mobility challenges.
- (2) Space for wheelchairs and assistive devices, ensuring that PWDs can safely and comfortably use public transport.
- (3) Enhanced safety features, such as audible and visual alerts for passengers with sensory impairments.

3. Planning and Consultation:

The MTA shall engage in continuous consultation with organizations representing persons with disabilities, the elderly, and other vulnerable groups during the planning and implementation of future public transport projects. These consultations will ensure that the specific needs of all passengers are considered and integrated into transport development.

4. Funding and Support for Accessible Future Projects:

The MTA shall prioritize funding for infrastructure projects that promote accessibility and inclusivity. This may include:

- (1) Government grants and international funding for projects that meet high accessibility standards.
- (2) Public-private partnerships (PPPs) that ensure the design and operation of accessible transport services and infrastructure.

5. Compliance Monitoring in Future Projects:

The MTA shall ensure that all future public transport projects undergo regular compliance reviews and audits to verify adherence to accessibility standards. Projects that fail to meet the required accessibility provisions may be subject to penalties, including the suspension of project approvals or the withdrawal of funding.

Part 13: Technology and Innovation

Section 13.1: Adoption of Modern Technologies

1. Promoting Technology in Public Transport:

The Authority shall prioritize the adoption and integration of modern technologies across the public transport network, including Bus Rapid Transit (BRT) systems, buses, and future transport modes.

The Authority will encourage public transport operators to adopt technologies that improve operational efficiency, passenger experience, and environmental sustainability. These technologies may include, but are not limited to:

- (1) Real-time passenger information systems: Providing passengers with up-to-date information on vehicle locations, arrival times, and service disruptions.
- (2) Smart ticketing systems: Implementing electronic ticketing platforms, such as mobile payments, smart cards, and contactless payment systems, to streamline fare collection and reduce wait times.
- (3) Electric and low-emission vehicles: Promoting the transition to electric buses and other low-emission transport modes to reduce the carbon footprint of public transport operations.

2. Infrastructure Upgrades:

The Authority will work with public transport operators and government agencies to implement technology-driven upgrades to public transport infrastructure, including BRT corridors, multimodal hubs, and bus terminals.

These upgrades may include the installation of automated fare collection systems, surveillance and safety technologies, and smart traffic management systems to optimize the movement of public transport vehicles and improve security for passengers.

Section 13.2: Encouraging Innovation

1. Fostering Innovation in Transport Services:

The Authority shall create an enabling environment for innovation in public transport services. This includes fostering collaboration with technology companies, research institutions, and private sector partners to develop new solutions that enhance the public transport network.

The Authority may introduce pilot projects to test innovative solutions such as:

- (1) On-demand public transport: Utilizing mobile applications to provide flexible, demandresponsive bus or shuttle services in areas with lower ridership or outside peak hours.
- (2) Autonomous vehicle technology: Exploring the potential for autonomous public transport vehicles in the future, particularly for short-distance travel or feeder services.
- (3) Mobility-as-a-Service (MaaS): Integrating various forms of transport, such as buses, BRT, cycling, and ride-sharing, into a single digital platform that allows passengers to plan, book, and pay for their entire journey.

2. Innovation Incentives:

The Authority may offer incentives to public transport operators, technology providers, or other stakeholders who introduce innovative solutions that improve efficiency, sustainability, or passenger experience.

The Authority may establish innovation funds or grants to support the development and implementation of cutting-edge transport technologies and practices.

Section 13.3: Sustainable Practices through Technology

1. Integration of Sustainable Technologies:

The Authority shall prioritize the adoption of sustainable transport technologies to reduce the environmental impact of public transport operations. This includes encouraging the use of:

- (1) Electric buses: Transitioning to electric and hybrid vehicles to reduce emissions and improve air quality in the Metropolitan Area.
- (2) Energy-efficient infrastructure: Implementing energy-efficient systems in public transport facilities, such as solar-powered bus stops, LED lighting, and energy-efficient buildings at transport hubs.
- (3) Eco-friendly vehicle designs: Encouraging the adoption of vehicle designs that use lightweight materials and energy-efficient technologies to reduce fuel consumption.

2. Data Collection and Environmental Monitoring:

The Authority will implement data collection systems to monitor the environmental impact of

public transport services. This may include tracking vehicle emissions, fuel consumption, and energy use to measure progress toward environmental sustainability goals.

The collected data will be used to inform decisions on future investments in sustainable transport technologies and infrastructure upgrades.

3. Collaboration with Environmental Agencies:

The Authority shall work closely with environmental agencies such as the National Environmental Management Authority (NEMA) to ensure that public transport services comply with national environmental regulations.

Joint efforts will be made to reduce emissions and promote the use of clean energy technologies within the public transport network.

Section 13.4: Enhancing Passenger Experience through Technology

1. Passenger-Centered Technology Solutions:

The Authority shall focus on improving the passenger experience through technology. This includes:

- (1) Real-time travel information: Providing passengers with accurate, real-time updates on bus and BRT service times, delays, and routes through mobile apps, digital screens at stations, and online platforms.
- (2) Journey planning tools: Offering digital tools that allow passengers to plan their routes, estimate travel times, and find the best public transport options based on real-time data.
- (3) Accessibility technologies: Ensuring that public transport is accessible to all, including persons with disabilities, by adopting technologies such as audio-visual announcements, apps for visually impaired users, and priority booking systems.

2. Customer Feedback and Engagement Platforms:

The Authority shall implement digital feedback systems that allow passengers to provide realtime feedback on services, including issues related to cleanliness, service reliability, and safety.

These feedback platforms will be integrated with customer service centers, enabling the Authority to respond quickly to complaints and suggestions and make data-driven decisions to improve service quality.

Part 14: Labour Relations and Provisions

Section 14.1: Workers' Rights

1. Compliance with National Labour Laws:

The Authority shall ensure that all public transport workers within the Metropolitan Area are employed and managed in full compliance with Kenya's Employment Act, Labour Relations Act, and any other applicable national labour laws and regulations.

Workers' rights, including fair wages, safe working conditions, non-discrimination, and the right to form unions, shall be protected as per national standards.

Public transport operators must provide a safe working environment, free from harassment or exploitation, and ensure that working conditions align with Occupational Health and Safety Act standards.

2. Specific Provisions for Metropolitan Transport Workers:

Due to the demanding nature of metropolitan public transport operations, additional safety training and protective measures may be required for workers in high-traffic, high-density urban environments.

The Authority may introduce specific guidelines regarding driver rest periods, shift patterns, and other measures to reduce fatigue and enhance safety in the operation of buses, BRT, and other public transport modes.

Section 14.2: Collective Bargaining

1. Right to Collective Representation:

Public transport workers within the Metropolitan Area shall have the right to join or form trade unions and engage in collective bargaining, in accordance with the Labour Relations Act.

The Authority shall respect these rights and ensure that labour relations between operators and workers are conducted fairly, without interference.

2. Application of Collective Bargaining Agreements (CBAs):

Collective Bargaining Agreements (CBAs) negotiated between workers' unions and public transport operators shall be recognized by the Authority, provided they comply with national labour laws.

The Authority may facilitate negotiations between operators and unions to ensure that CBAs reflect the unique demands of metropolitan public transport services, particularly regarding working hours, safety standards, and compensation structures for workers operating BRT systems, commuter buses, or other public transport modes.

Section 14.3: Worker Training and Development

1. Skills Development and Certification:

In line with the National Industrial Training Authority (NITA) standards, all public transport workers, particularly drivers and maintenance personnel, must undergo regular training and certification.

Given the introduction of new technologies (e.g., BRT systems, electric vehicles), the Authority shall ensure that training programs are updated to meet the specific needs of metropolitan transport, including safe driving practices, customer service, and emergency response.

2. Collaboration with Training Institutions:

The Authority may collaborate with NITA, technical institutions, and transport operators to establish training programs tailored to the demands of metropolitan public transport services, ensuring workers remain proficient in operating modern, high-capacity vehicles and managing large passenger volumes.

Section 14.4: Employment Contracts and Benefits

1. Compliance with National Employment Standards:

All public transport workers must have formal employment contracts in compliance with the Employment Act. Contracts must specify wages, working hours, benefits, and job responsibilities, ensuring transparency and adherence to national standards.

Employment terms shall also comply with national regulations on paid leave, health insurance, and retirement benefits as required by the NSSF (National Social Security Fund) and NHIF (National Hospital Insurance Fund).

2. Benefits for Metropolitan Public Transport Workers:

Given the unique challenges faced by workers in high-traffic urban areas, the Authority may establish additional guidelines on worker benefits, including provisions for accident coverage, health and safety training, and access to mental health support.

Part 15: Miscellaneous Provisions

Section 15.1: Transition of Responsibilities from the National Transport and Safety Authority (NTSA)

1. Gradual Transition of Responsibilities:

The Authority shall gradually assume the public transport-related responsibilities that are currently managed by the National Transport and Safety Authority (NTSA) within the designated metropolitan areas. The transition shall be completed within a period of three years from the commencement of this Act.

During the transition period, the Authority and the NTSA shall jointly manage:

- (1) Licensing and regulation of public transport operators.
- (2) Vehicle safety inspections and compliance with safety standards.
- (3) Enforcement of traffic and transport regulations related to public transport.

2. Memorandum of Understanding (MoU):

- (1) The Authority shall enter into a formal Memorandum of Understanding (MoU) with the NTSA, outlining the specific roles and responsibilities of both entities during the transition phase.
- (2) The MoU shall include:
 - (a) A detailed timeline for the transfer of specific functions.
 - (b) Guidelines for information sharing, including the transfer of data on operators, licenses, and public transport services.
 - (c) Joint enforcement mechanisms for regulations during the transition period.

3. Capacity Building:

The MTA shall develop a capacity-building plan to ensure that it is fully equipped to manage the responsibilities transferred from the NTSA. This may include:

- (1) Training of MTA staff on public transport regulation and enforcement.
- (2) Hiring of qualified personnel to manage new functions.

(3) Acquiring the necessary infrastructure and technology to support these functions.

Section 15.2: Transition of Responsibilities from County Governments

1. Coordination with County Governments:

The Authority shall coordinate with county governments within the metropolitan area to assume oversight and management responsibilities for public transport services. This transition shall not affect the authority of county governments to manage transport services unrelated to public transport (e.g., local roads, non-motorized transport).

2. Integration of County-Level Transport Services:

The Authority shall integrate public transport services currently managed by county governments into the metropolitan public transport network, ensuring:

- (1) Harmonization of fare structures, service routes, and schedules.
- (2) Compliance with metropolitan service standards and regulations.
- (3) Smooth operational coordination for cross-county routes.

3. Service Continuity:

County governments shall continue to manage public transport services during the transition period. The Authority and county governments shall ensure that the transition does not disrupt existing services.

A joint oversight committee shall be formed, comprising representatives from both the Authority and the respective county governments, to oversee the transition process and address operational challenges.

Section 15.3: Transitional Provisions for Existing Operators

1. Continuity of Existing Operations

Operators who are currently licensed and operating under the previous legal framework shall be permitted to continue their operations during the transition to the new regulatory regime established by this Act. To ensure minimal disruption of services, the Metropolitan Transport Authority (MTA) shall issue guidelines outlining how existing operators will be integrated into the new system.

2. Compliance Period

Existing public transport operators shall be given a grace period of 12 months from the enactment of this Act to comply with the new standards and regulations set forth by the MTA. During this period, operators must:

- (1) Update their licenses to align with the new regulatory framework.
- (2) Upgrade their vehicles to meet safety and environmental standards.
- (3) Adjust their operations to comply with metropolitan transport plans and service quality requirements.

3. Phased Implementation of New Standards

The MTA shall implement a phased process to introduce the new standards and requirements, taking into account the varying capacities of operators to meet these standards. Operators will be given sufficient time to make necessary adjustments to their operations, fleets, and practices. The phased approach shall include clear timelines for compliance, with periodic reviews to ensure that operators are making adequate progress.

4. Provisional Licenses and Permits

During the transition period, operators who have not yet fully complied with the new requirements may be issued provisional licenses or permits, allowing them to continue operations while they work towards full compliance. These provisional licenses shall be subject to periodic review, and operators will be required to demonstrate substantial progress toward meeting the new standards within specified timelines.

5. Support and Capacity Building

To assist operators in meeting the new requirements, the MTA, in coordination with relevant stakeholders, shall provide support and capacity-building programs. This support may include:

- (1) Training and workshops on new regulations, service standards, and operational requirements.
- (2) Technical assistance to help operators upgrade their fleets to meet safety and environmental regulations.
- (3) Financial guidance, including potential access to subsidies, low-interest loans, or grants,

particularly for small operators transitioning to the new system.

6. Transition of Responsibilities from Other Authorities

Any responsibilities for public transport regulation, licensing, or enforcement previously held by other agencies, such as county governments or the NTSA, shall be gradually transitioned to the MTA. Memorandums of Understanding (MoUs) may be established to facilitate cooperation and ensure that no gaps in enforcement or service delivery occur during the transition period.

7. Review and Adjustment of Transitional Provisions

The MTA shall periodically review the progress of the transition and adjust timelines or provide additional support to operators who face significant challenges in meeting the new requirements. The MTA shall ensure that the transition process is fair, does not disproportionately impact small operators or vulnerable groups, and is adaptable to unforeseen challenges.

8. End of Transitional Period

At the conclusion of the transitional period, all operators must comply fully with the provisions of this Act. Any operator failing to meet the required standards by the end of this period shall be subject to the penalties outlined in this Act, including but not limited to the suspension or revocation of operating licenses.

Section 15.4: Savings Provisions

1. Preservation of Rights and Obligations:

Any rights, obligations, or liabilities of public transport operators, county governments, or the NTSA that existed before the commencement of this Act shall continue to be valid and enforceable under the supervision of the Authority.

All existing contracts, permits, licenses, and agreements issued under the previous legal framework shall remain valid until their expiration or renewal, at which point they will fall under the jurisdiction of the Authority.

2. Continuity of Services:

All public transport services, infrastructure projects, and ongoing initiatives that were started under county government management or the NTSA shall continue under the authority of the Authority, without interruption. Any amendments or modifications to these projects shall be coordinated by the Authority in consultation with the respective stakeholders.

Section 15.5: Repeals and Amendments

1. Repeal of Conflicting Legislation:

Any existing national or county-level laws or regulations that conflict with the provisions of this Act shall be repealed to the extent of the inconsistency.

2. Amendment of the NTSA Act:

The NTSA Act shall be amended to reflect the new division of responsibilities between the NTSA and the Authority. The Ministry of Transport shall initiate the necessary legal amendments to ensure a smooth transition.

Section 15.6: Legal Proceedings

1. Jurisdiction for Legal Proceedings

Legal proceedings arising from violations of this Act, including disputes over penalties, service standards, compliance, or any other regulatory matters, shall be heard and determined by the courts or tribunals with jurisdiction over public transport matters. This includes:

- (1) The Transport Licensing Appeals Board (TLAB), established under the NTSA Act, shall hear and determine disputes relating to licensing, penalties, and other regulatory decisions by the MTA.
- (2) For serious offenses or significant legal matters, disputes may be referred to higher courts, including the High Court of Kenya, where appropriate.

Disputes arising under this Act shall be subject to the provisions of the Fair Administrative Action Act and other applicable laws.

2. Right to Appeal

Any individual, entity, or operator aggrieved by a decision made by the Metropolitan Transport Authority (MTA), such as penalties, license suspensions, or other regulatory actions, has the right to appeal the decision. Key points include:

- (1) Appeal Filing: Appeals must be filed within 30 days of the contested decision.
- (2) Appropriate Body: Appeals may be directed to the relevant tribunal or court, depending on the nature of the case, such as the TLAB for licensing disputes or other designated courts for serious offenses.

(3) Review Process: The appellate body shall review the case based on the evidence and applicable laws, issuing a ruling that is binding on all parties.

3. Alternative Dispute Resolution (ADR)

The MTA encourages the resolution of disputes through Alternative Dispute Resolution (ADR) methods, including mediation and arbitration, in accordance with the Constitution of Kenya, 2010 and the Arbitration Act. Key aspects include:

- (1) Voluntary Agreement: Parties may agree to resolve conflicts through mediation or arbitration as an alternative to formal litigation.
- (2) Binding Outcomes: Where ADR is applied, the appointed arbitrator or mediator shall expedite resolution, and the outcomes of the process shall be binding on both parties.

4. Legal Representation

Parties involved in legal proceedings or ADR processes shall have the right to legal representation. Legal costs and fees shall be determined by the court, tribunal, or arbitrator as part of the ruling or decision-making process, based on the complexity of the case and other relevant factors.

5. Enforcement of Tribunal and Court Rulings

Decisions issued by courts or tribunals, including the TLAB, shall be binding and enforceable. The MTA, in collaboration with relevant law enforcement agencies, including national police and county marshals, shall ensure compliance with such rulings. Failure to comply with a tribunal or court decision may result in further legal action, including fines or sanctions, as prescribed by law.

6. Public Interest Litigation

Members of the public, civil society groups, or public interest organizations may initiate public interest litigation in cases where there is a perceived breach of this Act by operators or the MTA. Such cases shall be filed in the relevant courts to ensure:

- (1) Accountability: Ensuring compliance with public transport regulations.
- (2) Jurisdiction: Courts with the appropriate authority shall hear and determine such cases, issuing binding rulings as necessary to uphold the provisions of this Act.

7. Periodic Review of Dispute Mechanisms

The MTA shall periodically review its legal and dispute resolution processes to ensure they remain effective, fair, and aligned with national legal standards. Adjustments to these procedures will be made in consultation with stakeholders and in compliance with the relevant laws, including updates to reflect evolving transport regulations and administrative best practices.

Chapter 6

The Draft of the Metropolitan Public Transport
Operators Regulations

The Nairobi Metropolitan Area Public Transport Operators Regulation, 2025 (NMA PTO Regulations)

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Part 1: Preliminary

Section 1.1: Citation

These regulations may be cited as the Nairobi Metropolitan Area Public Transport Operators Regulations, 2025.

Section 1.2: Commencement

These regulations shall come into force on such a date as the Cabinet Secretary responsible for transport may, by notice in the Gazette, appoint. Different dates may be appointed for different provisions of these Regulations.

Section 1.3: Interpretation

In these Regulations, unless the context otherwise requires:

- (1) "Authority" means the Nairobi Metropolitan Area Transport Authority, an entity established under Executive Order No. 3 of 2017 and subsequently granted legislative authority and mandate by the Nairobi Metropolitan Area Transport Act, 2025, as the statutory body responsible for public transport oversight within the Nairobi Metropolitan Area.
- (2) "Public transport" means any system of transportation available to the public, including buses, trains, trams, and other forms of mass transit, that operates on set routes and schedules and charges a fee for each trip.
- (3) "Operator" refers to any person, individual, or corporate entity licensed under these regulations to provide public transport services by bus, Bus Rapid Transit (BRT), or rail services within the metropolitan area. For the purposes of these Regulations, "Operator" is synonymous with "Public Transport Operator" and shall be interpreted to refer to one or more such operators, depending on the context.
- (4) "Vehicle" includes any motor vehicle, train, tram, or other form of transportation used for public transport services.
- (5) "Fare" refers to the price charged to passengers for using public transport services, as regulated by the Authority.
- (6) "Ministry" refers to the Ministry responsible for transport or any person acting on behalf of the Cabinet Secretary for Transport.
- (7) "Service quality standards" refers to the minimum standards established by the Authority to ensure the safe, efficient, and reliable operation of public transport services.
- (8) "Financial report" refers to the annual financial statement submitted by public transport operators, detailing revenue, expenses, taxes, and other financial data as required under

- these regulations.
- (9) "Tax office" refers to the national authority responsible for collecting taxes from individuals and businesses, including public transport operators.
- (10) "Regulations" refers to the rules, guidelines, and templates issued under these regulations to ensure the smooth implementation and enforcement of public transport policies.
- (11) "Conventional bus" means a motor vehicle with a seating capacity exceeding a specific number of passengers (e.g., 14 passengers) that is designed and used for the conveyance of passengers on public roads, but excluding BRT vehicles, minibuses, coaches, and other specialized services. Conventional buses typically operate on public transport routes as defined by the Authority.
- (12) "Bus Rapid Transit (BRT)" refers to the high-capacity transit system operating within dedicated lanes or corridors designed to improve public transport efficiency.
- (13) "Rail services" refers to passenger train services operating within the metropolitan transport network.

Section 1.4: Scope of Application

1. Public Transport Modes Covered:

This Act applies to public transport operators offering services within the metropolitan area by means of conventional buses, BRT, and rail systems.

2. Exclusion of Taxis and Boda Boda Services:

The provisions of these Regulations do not apply to taxis, ride-hailing services, or Boda Boda (motorcycle taxi) services, as these modes of transport fall outside the scope of these Regulations.

Taxis, ride-hailing, and Boda Boda services shall be regulated under separate national or county-specific laws and regulations.

3. Jurisdictional Limitation:

These Regulations govern public transport services operating within the metropolitan region, with respect to routes, standards, service quality, and other provisions as defined herein.

Part 2: Institutional Framework and Stakeholder Roles

Section 2.1: Roles of the Nairobi Metropolitan Area Transport Authority

The Authority is established under the Nairobi Metropolitan Area Transport Authority Act to provide leadership, coordination, and regulation of public transport services across the Nairobi Metropolitan Area. In accordance with this mandate, The Authority shall perform the following roles under these regulations:

1. Policy and Strategic Oversight

- (1) The Authority shall develop and oversee the implementation of policies and strategic plans for public transport within the Nairobi Metropolitan Area, ensuring alignment with:
 - (a) National policies as set by the Ministry of Transport and Infrastructure.
 - (b) County-specific transport strategies, plans, and land use objectives.
- (2) The Authority shall prepare and update the Metropolitan Transport Plan, integrating all modes of transport, including BRT systems, rail, buses, and non-motorized transport.

2. Licensing and Route Rationalization

- (1) NaMATA shall be the sole licensing authority for inter-county public transport operations within the Nairobi Metropolitan Area.
- (2) NaMATA shall issue:
 - (a) Public Transport Operating Licenses for inter-county routes.
 - (b) Route Allocation Certificates for designated metropolitan corridors to prevent congestion and balance transport demand.
- (3) NaMATA shall ensure that **all inter-county operators use high-capacity vehicles** (minimum 25-seater requirement) to align with metropolitan transport planning goals.
- (4) NaMATA shall coordinate with County Governments to ensure route planning is integrated with local transport services.

3. Integration of Transport Modes

- (1) The Authority shall ensure the seamless integration of all transport modes, including but not limited to:
 - (a) Coordination of BRT systems, commuter rail, buses, and non-motorized transport infrastructure.
 - (b) Development of intermodal hubs to facilitate efficient passenger transfers between modes.
 - (c) Establishment of a unified ticketing and fare collection system, in collaboration with relevant stakeholders.

4. Safety, Security, and Environmental Standards

- (1) The Authority shall establish, enforce, and monitor compliance with safety, security, and environmental standards for public transport operations, including:
 - (a) Adoption of vehicle safety and environmental regulations in collaboration with NTSA.
 - (b) Oversight of operator compliance with emission reduction targets, promoting the transition to low-emission and electric vehicles.
 - (c) Conducting safety audits, incident investigations, and inspections of vehicles and infrastructure.

5. Fare Regulation and Revenue Management

- (1) The Authority shall regulate fares and ensure transparency in revenue management, including:
 - (a) Setting fare guidelines and ceilings to ensure affordability and equity for all passengers.
 - (b) Developing mechanisms for periodic fare adjustments based on ridership data, operational costs, and economic conditions.
 - (c) Coordinating with the Public Transport Fund to distribute revenue for subsidies, fleet renewal, and service expansion.

6. Coordination with Stakeholders

- (1) The Authority shall establish and implement robust monitoring and enforcement mechanisms as stipulated under Part 6: Fleet Management and Maintenance and Part 9: Reporting, Data Submission, Permissions, and Approvals of these Regulations. These mechanisms shall include:
 - (a) Regular inspections of operators' fleets, facilities, and services in compliance with standards outlined in Section 6.2: Regular Vehicle Inspections and Maintenance and Section 5.2: Compliance with Safety and Environmental Standards.
 - (b) The imposition of penalties for non-compliance with operational, safety, and environmental standards, as detailed in Section 9.4: Monitoring of Compliance.
 - (c) Collaboration with NTSA and other relevant authorities to report violations and escalate enforcement actions, as prescribed in Section 2.2: Role of NTSA.

7. Monitoring and Enforcement

- (1) The Authority shall establish robust monitoring and enforcement mechanisms to ensure compliance with the Nairobi Metropolitan Area Public Transport Operators Regulations, including:
 - (a) Regular inspections of operators' fleets, facilities, and services.
 - (b) Implementation of penalties for non-compliance with operational, safety, and environmental standards.
 - (c) Reporting violations to NTSA or relevant authorities for additional enforcement action.

8. Capacity Building and Public Awareness

- (1) The Authority shall implement capacity-building programs for:
 - (a) Training public transport operators and conductors on safety, service quality, and operational standards.
 - (b) Strengthening the capacity of county enforcement officers to implement metropolitan transport regulations.

- (2) The Authority shall deliver public awareness campaigns on:
 - (a) Passenger rights and responsibilities.
 - (b) Safety protocols and emergency procedures.
 - (c) Benefits of cashless systems and non-motorized transport options.

9. Emergency and Disaster Response

- (1) The Authority shall prepare and maintain emergency response plans for metropolitan transport services, ensuring:
 - (a) Coordination with county and national agencies during disruptions, disasters, or emergencies.
 - (b) Implementation of contingency plans for service continuity and recovery.

10. Data Collection and Analysis

- (1) The Authority shall establish systems for collecting and analyzing transport data to inform planning, monitoring, and decision-making, including:
 - (a) Gathering data on ridership, revenue, fleet performance, and passenger feedback.
 - (b) Establishing a centralized transport database to support evidence-based policymaking.
 - (c) Requiring operators to submit periodic reports on operations, revenue, and compliance with regulations.

11. Innovation and Technology

- (1) The Authority shall promote the adoption of technology and innovation in public transport systems, including:
- (a) Facilitating the implementation of automated fare collection and real-time passenger information systems.
- (b) Encouraging the use of GPS-enabled fleet monitoring to improve operational efficiency and transparency.
- (c) Collaborating with technology providers to enhance passenger experience and system sustainability.

12. Facilitation of Public-Private Partnerships (PPPs)

- (a) The Authority shall identify opportunities for PPPs to enhance public transport infrastructure and service delivery, including:
- (b) Leasing or financing low-emission or electric buses to operators under performancebased agreements.
- (c) Partnering with private entities to develop and manage intermodal hubs, BRT corridors, or digital payment systems.

Section 2.2: Role of the National Transport and Safety Authority (NTSA)

The responsibilities of NTSA, as outlined below, are in accordance with NTSA Act, 2012, and applicable national regulations. These roles shall complement and align with the objectives of the Nairobi Metropolitan Area Public Transport Operators Regulations.

1. Licensing and Certification of Public Service Vehicles (PSVs)

- (1) NTSA shall be responsible for the **registration of all Public Service Vehicles (PSVs)** to ensure compliance with national safety, emissions, and vehicle roadworthiness standards.
- (2) NTSA shall not issue Public Transport Operating Licenses, as operational approvals fall under NaMATA (inter-county routes) and County Governments (intra-county routes).
- (3) NTSA shall coordinate with NaMATA and County Governments to **share safety and compliance data** but shall not interfere with route allocation or licensing decisions.

2. Driver and Conductor Licensing

NTSA shall oversee:

- (1) Issuance of PSV driving licenses, including specialized endorsements required for operating buses, BRT vehicles, or feeder services, as stipulated under Section 30 of the Traffic Act and NTSA Driver Licensing Regulations.
- (2) Establishment of competency frameworks and assessment criteria for conductors in partnership with The Authority and county governments, addressing gaps where conductor licensing is not currently mandated.

3. Road Safety Oversight

NTSA shall be responsible for:

- (1) Setting and enforcing national safety standards, as prescribed in NTSA (Road Safety) Regulations, which include requirements for:
 - (a) Vehicle safety features, including seat belts, fire extinguishers, and first aid kits.
 - (b) Compliance with emission standards to meet national and international environmental benchmarks.
 - (c) Roadworthiness inspections, including annual and ad hoc checks.
- (2) Monitoring and publishing road safety data, including accident rates and compliance levels, in collaboration with The Authority.
- (3) Supporting The Authority in public awareness campaigns on road safety for passengers, operators, and the general public.

4. Coordination with The Authority and County Governments

NTSA shall:

- (1) Work with The Authority to harmonize national licensing standards and metropolitanspecific regulations to ensure consistency.
- (2) Provide technical support to The Authority for developing policies on route rationalization, fleet modernization, and integration of public transport modes.
- (3) Collaborate with county governments to align PSV operations with county-level urban planning and infrastructure projects.

5. Enforcement and Compliance

NTSA shall:

- Conduct inspections, audits, and roadside checks of PSV operations to ensure compliance with safety and licensing requirements, as authorized under Section 34 of NTSA Act, 2012.
- (2) Investigate violations of national transport laws and impose penalties, including fines, license suspensions, or revocations, as provided under NTSA (Enforcement) Regulations.
- (3) Partner with The Authority to enhance enforcement mechanisms for the Nairobi Metropolitan Area, including integrated reporting and data-sharing systems.

6. Support for Transition to Modern Systems

NTSA shall assist The Authority by:

- (1) Providing regulatory guidance for the implementation of electronic fare collection systems, as outlined in NTSA (Technology Adoption) Guidelines.
- (2) Enabling integration of low-emission and electric vehicles by aligning national regulations with The Authority's metropolitan-level plans.
- (3) Supporting the gradual transition to performance-based contracting models, including Gross Cost Contracts (GCC) or other frameworks, in collaboration with The Authority.

7. Public Complaints and Dispute Resolution

NTSA shall:

- (1) Establish a public complaints system to handle grievances related to licensing, safety, and service quality under NTSA Act and related regulations.
- (2) Collaborate with The Authority to ensure swift and transparent resolution of complaints and disputes involving operators and passengers in the Nairobi Metropolitan Area.

Data Sharing and Transparency

NTSA shall:

(1) Share licensing, safety, and operational data with The Authority to support data-driven planning and decision-making in accordance with Section 7 of NTSA Act.

(2) Establish Memoranda of Understanding (MoUs) with The Authority to formalize datasharing protocols and ensure confidentiality where required.

9. Role in Capacity Building

- (1) NTSA shall:
 - (a) Provide training programs for PSV operators, drivers, and conductors on safety, customer service, and compliance with national and metropolitan regulations.
 - (b) Develop and disseminate training curricula in collaboration with The Authority and accredited training institutions.

Section 2.3: Role of the Nairobi City County (NCC)

The responsibilities of the Nairobi City County, as outlined below, are informed by the Nairobi City County Transport Act, 2020, the County Governments Act, 2012, and the Urban Areas and Cities Act, 2011. These roles are designed to align with and complement the objectives of the Nairobi Metropolitan Area Public Transport Operators Regulations, ensuring effective collaboration with The Authority and other stakeholders.

1. Management of County Transport Infrastructure

- (1) Pursuant to Section 5 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Own, manage, and maintain intra-county public transport infrastructure, including:
 - (i) Bus terminals, depots, and designated parking spaces.
 - (ii) Designated bus stops, taxi bays, and boda boda stages.
 - (iii) Non-motorized transport (NMT) facilities, such as pedestrian walkways and bicycle lanes.
 - (b) Collaborate with The Authority to:
 - (i) Upgrade and expand infrastructure to meet metropolitan transport standards.
 - (ii) Ensure infrastructure supports seamless integration with inter-county and metropolitan transport systems.
 - (c) Design and implement local-level traffic management plans, including traffic lights, lane markings, and road signage, in alignment with The Authority's metropolitan strategies.

2. Licensing and Regulation of Intra-County Services

- (1) Nairobi City County shall issue:
 - (a) Public Transport Operating Licenses for intra-county transport operators (e.g., matatus, minibuses, and feeder services operating entirely within Nairobi County).
 - (b) Route Allocation Certificates for intra-county public transport services, defining

- permitted routes within the county.
- (2) Nairobi City County shall enforce zoning restrictions to prevent unauthorized intercounty operations by intra-county operators.
- (3) NCC shall work with NaMATA to align intra-county routes with inter-county planning goals.

3. Coordination with The Authority on Metropolitan Policies

- (1) As stipulated in Section 8(3) of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Align its transport policies and plans with The Authority's metropolitan-wide objectives to ensure consistency in service delivery and infrastructure development.
 - (b) Participate in the preparation of the Nairobi Metropolitan Transport Plan and the Metropolitan Structure Plan to reflect county-specific priorities.
 - (c) Support The Authority in route rationalization and network optimization by identifying intra-county service gaps and challenges.

4. Enforcement of Transport Regulations

- (1) Under Section 10 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Deploy enforcement officers to ensure compliance with intra-county public transport regulations, including:
 - (i) Prevention of unauthorized operators and unregistered vehicles.
 - (ii) Inspection of vehicles for compliance with county-specific safety and environmental standards.
 - (iii) Management of traffic and prevention of overcrowding or illegal parking at transport hubs.
 - (b) Collaborate with The Authority and NTSA to standardize enforcement practices and align penalties with metropolitan-level regulations.

5. Public Complaints and Grievance Mechanisms

- (1) Pursuant to Section 12 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Establish a public transport complaints system to address grievances related to intracounty services, including:

- (i) Misconduct by operators or conductors.
- (ii) Poor service delivery, such as delays or route deviations.
- (iii) Unsafe driving practices or violations of passenger rights.
- (b) Share complaints data with The Authority to support metropolitan-level monitoring and improvement initiatives.

6. Integration of Land Use and Transport Planning

- (1) In accordance with Section 11 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Prepare and update land use plans that align with metropolitan transport strategies, facilitating effective integration of land use and transport infrastructure.
 - (b) Reserve land for future transport infrastructure projects, such as depots, BRT corridors, and NMT facilities, in consultation with The Authority.
 - (c) Ensure county-level development plans accommodate metropolitan transport priorities, including multi-modal hubs and transport-oriented development zones.

7. Promotion of Non-Motorized and Sustainable Transport

- (1) Under Section 7 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Promote non-motorized transport (NMT) options by:
 - (i) Developing and maintaining pedestrian and cycling infrastructure.
 - (ii) Integrating NMT facilities with metropolitan transport nodes, such as BRT stations.
 - (b) Implement programs to reduce environmental pollution from intra-county transport services, ensuring alignment with national and metropolitan environmental standards.

8. Revenue Collection and Resource Allocation

- (1) In accordance with Section 13 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
 - (a) Collect revenue from intra-county public transport services, including:
 - (i) Parking fees and terminal access charges.
 - (ii) Route licensing fees and operator levies.
 - (b) Allocate a portion of revenue to:
 - (i) Infrastructure maintenance and upgrades.
 - (ii) Development of sustainable and equitable transport services in underserved areas.
 - (c) Ensure transparency in revenue collection and disbursement by publishing annual financial reports.

9. Capacity Building and Public Awareness

- (1) Under Section 15 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
- (2) Provide training and capacity-building programs for county enforcement officers and transport operators.
- (3) Partner with The Authority to deliver public awareness campaigns on:
 - (a) Transport rules and regulations.
 - (b) Passenger rights and responsibilities.
 - (c) Benefits of sustainable and non-motorized transport options.

10. Role in Emergency and Disaster Response

- (1) As provided in Section 14 of the Nairobi City County Transport Act, 2020, the Nairobi City County Government shall:
- (2) Develop emergency response plans for intra-county transport services, ensuring coordination with The Authority's metropolitan emergency framework.
- (3) Prepare contingency measures for evacuations, disruptions, and natural disasters affecting intra-county transport.

Section 2.4: Roles of Public Transport Operators

Public Transport Operators are critical stakeholders in delivering safe, reliable, and efficient public transport services within the Nairobi Metropolitan Area. In line with the Nairobi Metropolitan Area Public Transport Operators Regulations, operators shall fulfill the following roles and responsibilities:

1. Service Delivery and Operations

Public Transport Operators shall:

- (1) Provide scheduled and reliable services on approved routes as per the conditions of their license or contractual agreement with the Authority.
- (2) Ensure the deployment of adequate and properly maintained fleets to meet passenger demand and service frequency requirements.
- (3) Operate vehicles that meet all safety, environmental, and technical standards established by the Authority and NTSA.

2. Compliance with Licensing and Contractual Agreements

Public Transport Operators shall:

- (1) Obtain and maintain valid operating licenses from both NTSA and The Authority as specified in Part 3 of these Regulations.
- (2) Adhere to the terms and conditions of performance-based contracts or concession

- agreements, including service delivery metrics, safety compliance, and customer satisfaction.
- (3) Provide The Authority with updated information regarding any changes to fleet composition, staffing, or routes as required under Section 3.1.

3. Adoption of Technology and Modern Systems

Public Transport Operators shall:

- (1) Integrate modern technologies such as Automated Fare Collection (AFC) systems and GPS-enabled fleet monitoring systems into their operations.
- (2) Collaborate with The Authority and technology providers to implement real-time passenger information systems, ensuring enhanced passenger convenience and transparency.
- (3) Submit operational and financial data, including fare collection reports, fleet utilization statistics, and compliance with service standards, as outlined in Part 9.

4. Fleet Maintenance and Environmental Responsibility

Public Transport Operators shall:

- (1) Maintain their fleets in accordance with the safety and environmental standards established under Part 6 of these Regulations.
- (2) Transition to low-emission or electric vehicles in alignment with timelines and incentives provided by The Authority, contributing to improved air quality and reduced greenhouse gas emissions.
- (3) Ensure routine inspections and preventive maintenance are carried out to minimize operational disruptions and ensure passenger safety.

5. Collaboration with The Authority and County Governments

Public Transport Operators shall:

- (1) Cooperate with The Authority, NTSA, and county governments in route planning, rationalization, and integration of services with other modes of transport such as BRT and commuter rail.
- (2) Participate in public consultation forums and stakeholder engagements organized by The Authority to address service delivery challenges and improve public transport systems.
- (3) Comply with zoning and operational guidelines for designated transport nodes such as BRT stations, bus terminals, and intermodal hubs.

6. Passenger Welfare and Inclusivity

Public Transport Operators shall:

- (1) Ensure passenger safety and comfort by providing clean, well-maintained vehicles and adequately trained staff, including drivers and conductors.
- (2) Provide accessible transport options for persons with disabilities and other vulnerable groups in accordance with Part 8.
- (3) Address passenger complaints promptly and implement feedback mechanisms to improve service quality.

7. Emergency Preparedness and Contingency Plans

Public Transport Operators shall:

- (1) Develop and implement emergency response plans in collaboration with The Authority as outlined in Part 10.
- (2) Train staff on emergency protocols, disaster response, and passenger evacuation procedures.
- (3) Ensure vehicles are equipped with the necessary emergency equipment, such as first aid kits, fire extinguishers, and communication tools.

8. Training and Capacity Building

Public Transport Operators shall:

- (1) Ensure their staff, including drivers and conductors, receive mandatory training on safety, customer service, and compliance with The Authority regulations.
- (2) Partner with The Authority to implement capacity-building programs aimed at enhancing operational efficiency and adherence to service standards.

9. Adherence to Fare Regulations

Public Transport Operators shall:

- (1) Implement cashless fare collection systems as mandated by The Authority and comply with fare structures and guidelines set under Part 7.
- (2) Submit accurate and timely revenue reports to The Authority for monitoring and transparency.
- (3) Prohibit unauthorized fare increases and ensure passengers are informed of any approved fare adjustments.

10. Monitoring and Reporting Obligations

Public Transport Operators shall:

- (1) Regularly report operational data, including fleet performance, service reliability, and passenger feedback, to The Authority as outlined in Part 9.
- (2) Allow inspections and audits of their services, facilities, and vehicles by The Authority

and NTSA.

(3) Promptly address violations and implement corrective measures to maintain compliance with regulations.

Section 2.5: Public and Private Stakeholder Engagement

1. Collaboration with Private Sector Stakeholders

Operators are encouraged to collaborate with private sector stakeholders, including technology providers and service innovators, to adopt and implement systems that enhance public transport service delivery.

Such initiatives may include:

- (1) Automated fare collection systems,
- (2) Real-time passenger information technologies, and
- (3) Fleet management tools and digital platforms.

All private sector engagements shall align with the Nairobi Metropolitan Area Transport Plan and comply with applicable standards and guidelines issued by the Authority.

2. Public Participation Requirements

Operators shall comply with public participation requirements established under Section 7 of the Nairobi City County Transport Act, 2020, or any applicable legislation.

Public input must be sought for major operational changes, including:

- (1) Fare adjustments,
- (2) Route modifications, and
- (3) Introduction of new services or technologies.

The Authority shall issue guidelines on the process and format for public participation to ensure transparency and inclusivity.

3. Supporting Guidelines

The Authority shall develop Stakeholder Engagement Guidelines to provide detailed procedures for:

- (1) Engaging with private sector stakeholders,
- (2) Facilitating public participation in service planning, and
- (3) Incorporating stakeholder feedback into decision-making processes.

Part 3: Operators' Licensing and Certification

Section 3.1: Operator Licensing Requirements

1. National-Level Licensing Requirements (NTSA)

(1) Obligation to Obtain a National License:

All public transport operators must first obtain a valid operator license from NTSA to operate public transport services across Kenya, including metropolitan areas.

(2) NTSA Licensing Application:

The application for a national-level operator license must include:

- (a) Proof of company incorporation under Kenyan law.
- (b) A valid tax compliance certificate from the Kenya Revenue Authority (KRA).
- (c) A detailed list of vehicles in the operator's fleet, including proof of roadworthiness certification for each vehicle.
- (d) Proof of comprehensive insurance coverage for each vehicle.
- (e) Compliance with NTSA safety regulations, such as driver qualifications, vehicle safety features, and emergency protocols.
- (f) A safety management plan that outlines measures to ensure ongoing compliance with NTSA safety standards.
- (3) NTSA License Validity and Renewal:
 - (a) NTSA licenses are valid for a period of three years and must be renewed upon expiration. The renewal process requires operators to demonstrate continued compliance with all NTSA safety, operational, and environmental standards.
 - (b) Regular vehicle inspections and driver training certifications are required to maintain NTSA license.

2. Obligation to Obtain a Metropolitan License

- (1) Requirement for a Metropolitan-Specific License
 - (a) In addition to NTSA license, all public transport operators must obtain a metropolitanspecific license from the Authority to operate within the Nairobi Metropolitan Area (NMA), including inter-county routes.
 - (b) The metropolitan-specific license shall include provisions for inter-county operations, trunk routes, and feeder services, with special consideration for transitioning to highcapacity vehicles on trunk routes.
- (2) Application for a Metropolitan License
 - (a) Operators applying for a metropolitan-specific license must submit the following:

- (i) Proof of NTSA Licensing
- (ii) A valid NTSA operator license is a prerequisite for obtaining a metropolitan license.
- (iii) Service Delivery Plan
- (b) A detailed service delivery plan specifying:
 - (i) Proposed routes and their alignment with The Authority's planned transport network, including integration with modes such as BRT, rail, and feeder systems.
- (ii) Scheduled service frequency and capacity, including peak and off-peak hour details.
- (iii) Measures to ensure seamless connections and integration with other transport modes at designated intermodal hubs.
- (c) Fleet Information

An up-to-date inventory of all vehicles in the operator's fleet, including:

- (i) Make, model, year of manufacture, seating capacity, and operational status of each vehicle.
- (ii) Compliance with metropolitan environmental and safety standards, including emissions control.
- (iii) Certification of vehicles to meet high-capacity requirements on trunk and intercounty routes, in accordance with phased transition plans to eliminate 14-seater vehicles on trunk routes.
- (d) Staffing and Personnel Documentation

A detailed list of staff employed by the operator, including:

- (i) The number of drivers, conductors, supervisors, and stage managers.
- (ii) Qualifications and certifications of key staff, including drivers' compliance with The Authority's safety and service standards.
- (iii) Training records demonstrating staff preparedness for integration with modern systems such as BRT operations and cashless fare collection.
- (e) Environmental Compliance Documentation

Evidence of compliance with The Authority's metropolitan environmental and sustainability guidelines, including:

- (i) Certification that the fleet meets required emissions standards.
- (ii) Documentation of measures taken to transition to low-emission or electric vehicles, in line with The Authority's environmental targets and timelines.
- (f) Service Quality and Accessibility Standards

Proof of compliance with The Authority's service quality benchmarks, including:

- (i) Passenger safety protocols and accessibility for persons with disabilities.
- (ii) Mechanisms for passenger feedback and complaints resolution.
- (iii) Implementation of customer service standards and training.
- (3) Transition to High-Capacity Operations
 - (a) The Authority shall prioritize the gradual elimination of low-capacity vehicles, such as 14-seater matatus, from trunk and inter-county routes to accommodate high-capacity buses and BRT systems.
 - (b) Licensed operators shall be required to comply with phased fleet renewal plans issued by The Authority, ensuring:
 - (i) Transition timelines are met for replacing low-capacity vehicles with high-capacity alternatives.
 - (ii) Participation in The Authority-facilitated leasing programs or public-private partnerships for fleet upgrades.
- (4) Coordination with BRT and Intermodal Systems
 - (a) Operators licensed for trunk and inter-county routes shall coordinate with The Authority to ensure integration with BRT systems and other intermodal services.
 - (b) Operators shall align their operations with The Authority's route rationalization plans to prevent route duplication and minimize congestion.
- (5) Ongoing Compliance and Monitoring
 - (a) Operators must ensure compliance with all licensing conditions and submit regular updates to The Authority, including fleet status and operational changes.
 - (b) The Authority shall conduct periodic inspections and audits to verify operator compliance with metropolitan-specific licensing requirements.
 - (c) Operators found in violation of licensing conditions may face penalties, suspension, or revocation of their metropolitan license as outlined in Part 9 of these Regulations.

Part 4: Coordination with County Governments

Section 4.1: Respect for County Transport Plans and Regulations

- (1) Operators providing public transport services within the Metropolitan Area must comply with the transport laws, regulations, and plans enacted by individual counties, such as the Nairobi City County Transport Act, 2020, and other relevant county-level transport rules.
- (2) Operators who provide intra-county services shall operate under the jurisdiction of the relevant county government, adhering to county transport regulations.
- (3) Operators involved in inter-county public transport services must align their services with both the relevant county transport plans and the Nairobi Metropolitan Area Transport Plan, as overseen by the Authority under the Nairobi Metropolitan Area Transport Act.

Section 4.2: Coordination of Inter-County Public Transport Services

- (1) Operators providing inter-county public transport services, such as Bus Rapid Transit (BRT) and rail feeder services, must coordinate their operations with the relevant county governments and comply with the standards set by the Authority.
- (2) The Authority shall ensure that inter-county public transport services are aligned with the Nairobi Metropolitan Area Transport Plan. Operators must coordinate with both county governments and the Authority to harmonize schedules, fare structures, and service standards across county boundaries.
- (3) Operators must participate in the planning and coordination processes to ensure their services are fully integrated into the metropolitan-wide public transport network as established by the Authority.

Section 4.3: Route Licensing and Harmonization

- (1) Intra-county route licensing shall be administered by the respective county governments, and operators providing services entirely within a county must comply with the county's route licensing schemes and service standards.
- (2) For inter-county routes (such as BRT and rail services), operators must apply for route licenses through the Authority, which will oversee the licensing process to:
 - (a) Ensure harmonized route operations across county borders, in alignment with the Nairobi Metropolitan Area Transport Plan.
 - (b) Facilitate coordination between counties and operators, ensuring that inter-county services do not conflict with intra-county transport plans.
- (3) Operators must report any changes in fleet size, route adjustments, and service capacity related to inter-county operations to the Authority, ensuring proper coordination across county jurisdictions.

Section 4.4: Planning Coordination and Consultation with County Governments

- (1) Operators must engage in the consultative processes led by the Authority and relevant county governments to ensure that their services are consistent with both the Nairobi Metropolitan Area Transport Plan and county-specific transport objectives.
- (2) Operators are responsible for aligning their services with the planning and integration requirements established by the Authority, ensuring that inter-county services are well-coordinated and integrated into the larger public transport framework.
- (3) In cases where new inter-county routes or services (such as BRT expansions or new rail feeder routes) are introduced, operators must participate in the planning and consultation processes to ensure that their services are properly integrated with both county and

metropolitan-wide objectives.

Section 4.5: Oversight and Monitoring of Inter-County Routes

- (1) The Authority shall oversee the monitoring and evaluation of all inter-county public transport routes, ensuring that operators comply with service standards, fare policies, and coordination requirements.
- (2) Operators providing inter-county services must submit regular reports to the Authority on service performance, fare compliance, and any operational disruptions, as per the standards set forth under the Nairobi Metropolitan Area Transport Act.
- (3) Any discrepancies or conflicts between county transport regulations and inter-county coordination shall be resolved through mutual consultation between operators, county governments, and the Authority. Failure by operators to comply with the standards and requirements may result in penalties, including the suspension or revocation of route licenses.

Section 4.6: Penalties for Non-compliance

1. General Obligations

All operators, vehicles, and personnel providing public transport services within the Nairobi Metropolitan Area shall comply with:

- (1) Standards and regulations established by the Authority under these Regulations.
- (2) Applicable national laws, including NTSA Act and the Traffic Act.

Non-compliance with these obligations shall result in penalties as prescribed in this section.

2. Categories of Violations

Violations subject to penalties under this section include:

- (1) Operating without valid licenses or permits issued by the Authority.
- (2) Failure to meet vehicle inspection and maintenance requirements.
- (3) Breaches of safety, environmental, or service standards established by the Authority or NTSA.
- (4) Employment of unqualified drivers or crew.
- (5) Failure to maintain accurate records, including inspections, certifications, or financial submissions.
- (6) Non-compliance with regulations on route allocation, fare systems, or service delivery standards.

3. Penalties for Minor Violations

(1) Warning Notices:

The Authority may issue written warnings specifying the violation and necessary corrective actions.

- (2) Fines:
 - (a) Minor violations may incur financial penalties proportional to the severity of the offense.
 - (b) The Authority shall maintain a schedule of fines for common infractions.

4. Penalties for Major Violations

(1) Suspension of Licenses or Permits:

Operators may face temporary suspension until compliance is demonstrated.

(2) Revocation of Licenses or Permits:

Licenses or permits may be permanently revoked for severe or repeated violations.

(3) Additional Fines:

Financial penalties for major violations shall be substantial and may include daily fines for ongoing non-compliance.

5. Safety and Environmental Violations

(1) Immediate Suspension:

Services may be suspended immediately if safety or environmental violations pose significant risks to passengers or the public.

(2) Mandatory Rectification:

Operators shall be required to implement corrective measures, such as repairs, retraining, or vehicle upgrades.

(3) Referral to National Authorities:

Violations falling under national jurisdiction shall be referred to NTSA or other relevant agencies for enforcement.

6. Appeals Process

Operators may appeal penalties imposed by the Authority within a specified time frame.

The appeals procedure shall include:

- (1) A formal review of the case by the Authority's internal committee or an independent arbitrator.
- (2) An opportunity for operators to present evidence or arguments in their defence.
- (3) Issuance of a final decision following the appeals process.

7. Coordination with National Authorities

The Authority shall collaborate with NTSA and other national bodies for enforcement actions involving:

- (1) Violations governed by national regulations.
- (2) Incidents extending beyond the Nairobi Metropolitan Area.
- (3) Joint investigations and shared penalties may be undertaken where applicable.

8. Supporting Regulations

Detailed provisions, including types of offenses, penalty scales, and procedures for enforcement, suspensions, revocations, and appeals, shall be issued in supporting regulations.

These supporting regulations shall include:

- (1) A comprehensive schedule of offenses and corresponding penalties.
- (2) Timelines for compliance, appeals, and resolution of cases.

Part 5: Service Delivery Standards

Section 5.1: Minimum Standards for Public Transport Services

1. Compliance with National, County, and Metropolitan Standards

- (1) Adherence to Standards:
 - (a) All public transport operators shall comply with service levels prescribed by NTSA and adhere to the applicable regulations set by the respective county governments for intracounty services.
 - (b) For intra-county routes, operators shall meet service delivery requirements as established by the respective county governments, ensuring alignment with local needs and regulations.
- (2) Inter-County Service Standards:

Operators providing inter-county public transport services within the Nairobi Metropolitan Area shall comply with the service standards established by the Authority, which shall include:

- (a) Vehicle safety and maintenance requirements.
- (b) Service reliability and adherence to established schedules.
- (c) Passenger safety and customer service quality.
- (d) Environmental compliance as specified by the Authority.

The Authority shall coordinate with county governments to ensure that inter-county services align with county transport plans and complement existing intra-county services without conflict.

(3) Coordination and Harmonization:

The Authority shall collaborate with NTSA and county governments to harmonize service delivery standards for inter-county routes to promote consistency, efficiency, and integration of public transport systems within the Nairobi Metropolitan Area.

2. Compliance with National and County Standards:

(1) National Compliance Requirements:

All public transport operators within the Nairobi Metropolitan Area shall comply with:

- (a) Minimum service levels and safety standards prescribed by NTSA under applicable national laws and regulations.
- (b) Requirements for vehicle registration, licensing, and certification as established by NTSA.
- (2) County-Specific Compliance:

Operators providing intra-county transport services shall meet the service standards set by the respective county governments within the Nairobi Metropolitan Area.

- (a) County service standards may include:
 - (i) Adherence to designated routes and schedules.
- (ii) Fulfilment of specific local service quality requirements, such as accessibility for persons with disabilities.

The Authority shall work with county governments to ensure that local standards align with metropolitan transport policies and do not create conflicting requirements for operators.

(3) Inter-County Compliance:

Operators providing inter-county transport services shall comply with service standards set by the Authority, including:

- (a) Consistency in service reliability, frequency, and punctuality across county boundaries.
- (b) Compliance with environmental standards, passenger safety protocols, and operational efficiency requirements.

The Authority shall ensure that inter-county services are planned in coordination with county governments and are integrated with intra-county transport systems.

- (4) Coordination with County Governments:
 - (a) The Authority shall collaborate with county governments to harmonize service delivery standards, ensuring that operators meet both metropolitan and local requirements without duplication of regulatory obligations.
 - (b) County governments may delegate specific compliance enforcement responsibilities to the Authority, as agreed upon in coordination frameworks or Memoranda of Understanding.
- (5) Enforcement Mechanisms:
 - (a) The Authority and county governments shall establish joint mechanisms for monitoring and enforcing compliance with national, metropolitan, and county standards.
 - (b) Operators found in breach of applicable standards shall be subject to penalties as outlined in these Regulations and other applicable laws.

3. Inter-County Routes and Authority Oversight:

(1) Regulation of Inter-County Routes:

Public transport operators providing inter-county services within the Nairobi Metropolitan Area shall operate under service standards established by the Authority.

These standards shall cover:

- (a) Route adherence and scheduling to ensure reliable and consistent operations.
- (b) Service quality metrics, including punctuality, cleanliness, and vehicle maintenance.
- (c) Passenger safety and customer service requirements.
- (2) Coordination with County Governments:

The Authority shall collaborate with the county governments of Nairobi City, Kiambu, Machakos, Kajiado, and Murang'a to:

- (a) Ensure inter-county routes are aligned with county transport plans.
- (b) Avoid duplication or conflict with intra-county transport services.
- (c) Facilitate the integration of inter-county and intra-county services to ensure seamless connectivity for passengers.
- (3) Allocation and Review of Inter-County Routes:

The Authority shall have the mandate to allocate and review inter-county routes in consultation with:

- (a) County governments to address local and regional transport demands.
- (b) Operators to ensure compliance with operational and service standards.

Periodic reviews shall be conducted to optimize route allocations based on demand, infrastructure changes, and passenger feedback.

(4) Oversight Mechanisms:

The Authority shall:

- (a) Monitor the performance of operators on inter-county routes, using tools such as GPS tracking, periodic inspections, and passenger feedback.
- (b) Ensure that service delivery aligns with Key Performance Indicators (KPIs) set forth in these Regulations.
- (5) Enforcement of Standards:

Operators failing to comply with inter-county route standards shall be subject to enforcement actions, including:

- (a) Suspension or revocation of route allocations.
- (b) Fines or penalties as specified in these Regulations.
- (c) Restriction of access to public transport infrastructure, such as terminals and hubs.
- (6) Integration with National and Regional Systems:

The Authority shall work with NTSA and other relevant agencies to ensure that inter-county

services within the Nairobi Metropolitan Area align with national transport policies and regional connectivity goals.

Section 5.2: Compliance with Safety and Environmental Standards

1. National Safety and Environmental Standards:

- (1) All vehicles operated by public transport providers must comply with the safety and environmental regulations established under NTSA Act and any other applicable national standards.
- (2) Operators must ensure that vehicles undergo regular safety inspections, emission testing, and certifications in line with national safety protocols.

2. County-Specific Standards:

(1) For intra-county services, operators must comply with any additional safety and environmental standards set by the county government where the services are provided.

3. Inter-County Coordination:

- (1) For inter-county routes, the Authority shall coordinate with both NTSA and relevant county governments to ensure that operators meet all required safety and environmental standards.
- (2) The Authority shall have the authority to impose additional safety and environmental standards for inter-county services, where appropriate, to ensure compliance across county borders.

Section 5.3: Service Availability and Frequency

1. Service Obligations for Intra-County Routes:

For intra-county services, operators must adhere to the service frequency and availability standards set by the respective county government, ensuring adequate service coverage across all assigned routes.

2. Inter-County Service Requirements:

- (1) Operators providing inter-county services shall maintain adequate service availability and frequency across their assigned routes, in line with the standards set by the Authority.
- (2) The Authority shall work in coordination with county governments to ensure that intercounty routes are fully integrated with intra-county services, promoting seamless connectivity between modes of transport, including last-mile connectivity.

3. Coordination with Other Modes of Transport:

Operators must ensure that inter-county public transport services are integrated with other transport modes, including BRT, rail services, and last-mile connections. The Authority shall oversee this coordination to ensure efficient service delivery across counties.

Part 6: Fleet Management and Maintenance

Section 6.1: Responsibility for Fleet Management

1. General Obligation of Operators:

Operators shall ensure that their fleet of vehicles is maintained in a state that is safe, roadworthy, and compliant with all applicable safety and environmental regulations at all times. The operator shall bear full responsibility for ensuring the operational condition of every vehicle within their fleet, whether owned, leased, or contracted.

2. Fleet Safety and Compliance:

Operators must maintain their vehicles to meet the minimum safety standards as prescribed by NTSA, the Authority, and other applicable national and local regulations. This includes:

- (1) Ensuring all vehicles undergo regular inspections, maintenance, and repairs as required to keep them roadworthy.
- (2) Adhering to preventive maintenance schedules to pre-emptively address potential mechanical issues before they become safety hazards.
- (3) Conducting thorough checks on braking systems, steering mechanisms, lighting, tires, suspension, and other critical components to ensure ongoing roadworthiness.

3. Operator Accountability:

Operators shall be accountable for ensuring that all drivers and maintenance personnel are aware of and follow the required procedures for vehicle safety checks, repairs, and maintenance routines. Operators must maintain a system of internal oversight and control to verify that fleet management obligations are met.

4. Record-Keeping Obligations:

Operators are required to maintain comprehensive records for each vehicle in their fleet, documenting all inspection reports, maintenance activities, repair work, and any modifications made to the vehicle. These records must be:

- (1) Accessible at all times to regulatory authorities, including NTSA and Authority, upon request.
- (2) Updated following each service or inspection to reflect the vehicle's current condition

and compliance status.

5. Immediate Rectification of Defects:

In the event that a vehicle is found to be unsafe or non-compliant during routine checks or inspections, the operator must immediately withdraw the vehicle from service and take all necessary steps to rectify the defects. The vehicle may only be returned to service once it has been certified as safe and roadworthy by qualified personnel or certified inspection agencies.

6. Operational Continuity and Passenger Safety:

Operators shall ensure that their fleet is managed in a way that supports operational continuity and passenger safety. Any vehicle-related issues that result in service disruptions must be addressed promptly, and alternative arrangements should be made to minimize the impact on passengers.

All vehicles used in public transport services shall be equipped with the necessary safety equipment, such as fire extinguishers, first aid kits, and emergency exits, as required by national and local regulations.

7. Operator Responsibilities Regarding Subcontracted Fleets:

Where operators engage in subcontracting or leasing arrangements, they remain fully responsible for ensuring that the subcontracted fleets meet all the fleet management and maintenance obligations outlined in this Act. Operators must ensure that subcontracted vehicles undergo the same rigorous inspection and maintenance routines as their own fleets.

8. Penalties for Non-compliance:

Failure by operators to comply with the obligations in this section may result in penalties, including but not limited to:

- (1) Fines for each day a non-compliant vehicle remains in operation.
- (2) Suspension of licenses or permits if the operator fails to rectify non-compliance within the time frame specified by the Authority or NTSA.
- (3) Revocation of licenses or permits for repeated or severe violations, as deemed necessary by the regulatory authorities.

Section 6.2: Regular Vehicle Inspections and Maintenance

1. Obligation to Conduct Regular Inspections:

(1) Operators shall conduct regular inspections of all vehicles in their fleet to ensure ongoing compliance with safety standards, environmental requirements, and roadworthiness as prescribed by NTSA and the Authority. (2) Inspections shall be carried out at intervals specified by the Authority, in line with national regulations, and operators are responsible for ensuring that inspections are completed on time and by qualified personnel.

2. Mandatory Preventive Maintenance:

Operators are required to implement a system of preventive maintenance, designed to address potential mechanical failures and safety issues before they occur. Preventive maintenance shall include:

- (1) Scheduled servicing of key vehicle components, including but not limited to the engine, transmission, brakes, steering, and suspension systems.
- (2) Regular checks on tire wear, fluid levels, lights, and other essential vehicle functions that directly affect safety and operational performance.
- (3) Replacement of worn or damaged parts as part of routine maintenance, rather than waiting for component failure.

3. Frequency of Inspections:

The frequency of vehicle inspections shall be determined based on vehicle type, age, and operational intensity, as outlined by the Authority and NTSA regulations. At a minimum:

- (1) Daily checks shall be carried out by operators or drivers to ensure basic roadworthiness before any vehicle enters service.
- (2) Monthly safety inspections shall be conducted to verify the operational condition of critical components and systems.
- (3) Comprehensive annual inspections shall be required for each vehicle, during which all aspects of the vehicle's roadworthiness, safety, and environmental compliance will be thoroughly reviewed and certified by an authorized inspection facility.

4. Inspection and Certification Requirements:

All inspections must be documented and certified by qualified personnel, and the results of each inspection must be recorded in the vehicle's maintenance log. The following certification requirements shall apply:

- (1) Daily inspections can be performed by qualified operators or drivers but must be recorded and signed off by the responsible person.
- (2) Monthly and annual inspections must be carried out by certified mechanics or technicians, and the results of these inspections must be formally documented.
- (3) Vehicles that pass inspection will receive an inspection certificate, valid for the period specified by the regulatory authority, confirming that the vehicle is safe and compliant.

5. Failure to Pass Inspection:

Should a vehicle fail any scheduled inspection, the operator must take immediate action to:

- (1) Remove the vehicle from service until the necessary repairs or maintenance are performed.
- (2) Rectify any defects identified during the inspection before returning the vehicle to operation.
- (3) Ensure that the vehicle undergoes re-inspection and receives certification before being cleared to resume public transport services.
- (4) Vehicles found operating without a valid inspection certificate may be subject to penalties, including fines, suspension, or revocation of permits.

6. Environmental Compliance:

- (1) In addition to safety standards, operators must ensure that all vehicles meet the environmental regulations specified by the Authority and NTSA, including requirements for emission testing and pollution control measures.
- (2) Operators shall ensure that vehicles undergo regular emission tests in accordance with the schedule established by national and metropolitan regulations, and vehicles that fail to meet the prescribed standards must be taken out of service until compliance is achieved.

7. Record-Keeping and Reporting Requirements:

Operators must maintain accurate and up-to-date records of all inspections, repairs, and maintenance activities for each vehicle in their fleet. These records shall include:

- (1) Dates of inspections and details of the inspection process.
- (2) Results of each inspection, including any deficiencies identified and corrective actions taken.
- (3) Certification of repairs and maintenance conducted on the vehicle.

These records must be retained for the operational lifespan of the vehicle and made available for review by the Authority, NTSA, or other regulatory authorities upon request.

8. Compliance Monitoring and Enforcement:

(1) Monitoring System:

The Authority shall establish and implement a comprehensive system for monitoring operator compliance with inspection and maintenance requirements. This system shall include:

- (a) Random inspections of vehicles while in service to assess compliance with operational safety and maintenance standards.
- (b) Scheduled audits of operator maintenance records and certification logs to verify adherence to mandatory inspection and servicing schedules.

(2) Penalties for Non-Compliance:

Operators found in violation of inspection and maintenance obligations shall be subject to penalties as outlined below:

- (a) Fines: Financial penalties shall be imposed for failure to conduct required inspections or submit accurate maintenance records, based on the severity of the violation.
- (b) Suspension of Licenses or Permits: Licenses or permits may be temporarily suspended until the operator rectifies non-compliance and provides evidence of corrective measures.
- (c) Revocation of Licenses or Permits: Licenses or permits may be permanently revoked for repeated violations or severe breaches that endanger public safety. Revocation decisions shall follow due process as defined in the Authority's enforcement regulations.
- (3) Coordination with NTSA:

The Authority shall collaborate with NTSA for cases involving national regulations or crossjurisdictional enforcement. Joint investigations or shared penalties may be applied where appropriate.

(4) Supporting Regulations:

The Authority shall issue detailed guidelines specifying:

- (a) Criteria for determining the severity of violations.
- (b) Penalty scales and thresholds for imposing fines, suspensions, and revocations.
- (c) Procedures for operators to appeal penalties and demonstrate corrective compliance.

Section 6.3: Adoption of Modern Fleet Management Technologies

1. Compliance with National Technological Standards:

- (1) Operators shall comply with the national regulations established under NTSA Act and related regulations concerning the adoption of modern fleet management technologies. The Authority shall issue supplementary metropolitan-specific standards in areas where additional oversight is required.
- (2) Operators are required to ensure the integration of these technologies across their fleet in compliance with both national standards and any Authority-specific regulations to enhance operational efficiency, safety, and environmental sustainability.

Section 6.4: Mandatory Fleet Management Systems:

1. Fleet Management System

- (1) Operators shall adopt modern fleet management systems that monitor key performance indicators such as:
 - (a) Vehicle performance metrics, including fuel efficiency, engine diagnostics, and real-time operational costs.

- (b) Driver behaviour and performance, including adherence to safe driving standards, speed limits, and proper operation hours.
- (c) Fleet operational costs, assisting operators in reducing inefficiencies and optimizing fleet usage.
- (2) Operators shall be required to report fleet performance data to the Authority and NTSA, as part of the compliance framework set forth under the national and metropolitan regulations.

2. **GPS Real-Time Monitoring:**

All vehicles in public transport fleets shall be equipped with GPS tracking systems to allow for real-time monitoring. This shall enable to:

- (1) Route compliance monitoring, ensuring that all vehicles adhere to their assigned routes and schedules.
- (2) Service punctuality, allowing operators and the Authority to monitor and address delays or deviations.
- (3) Passenger safety, by enabling operators and regulatory authorities to quickly locate vehicles in case of an emergency.
- (4) Operators shall provide the Authority and NTSA with real-time access to tracking data for regulatory oversight.

3. Digital Fare Collection Systems:

Operators are required to implement digital fare collection systems to streamline fare payments, reduce cash handling, and improve transparency. These systems shall include:

- (1) Contactless payment options such as mobile payments, cards, and smart ticketing systems.
- (2) Prepaid fare systems to allow passengers to load credit for faster boarding and payment.
- (3) Fare data analytics, allowing operators and the Authority to monitor revenue and identify ridership patterns.

4. Real-Time Passenger Information System

Real-Time Passenger Information System shall adopt real-time passenger information systems to provide passengers with up-to-date information on vehicle arrival times, delays, and service disruptions. These systems shall:

- (1) Be integrated into digital platforms, such as mobile applications, station displays, and the operator's website.
- (2) Ensure clear communication of route and fare changes, providing passengers with accurate service information.

5. Data Sharing and Reporting:

Operators must ensure that data collected through fleet management technologies, including GPS tracking and digital fare collection systems, is shared with the Authority for regulatory and performance monitoring purposes. This data shall be used for:

- (1) Service performance evaluation, ensuring operators meet the minimum service delivery standards.
- (2) Environmental and safety compliance, monitoring vehicle emissions and operational safety.
- (3) Coordination of services, especially for multi-modal transport integration between buses, BRT, and rail.

6. Security and Data Privacy Compliance:

All fleet management systems equipped with appropriate security protocols to protect against unauthorized access and ensure compliance with national data protection laws. Operators must ensure the safe handling of passenger and operational data, in accordance with national data privacy laws.

7. Incentives for Technology Adoption:

The Authority may offer financial incentives, subsidies or tax breaks, to operators who adopt advanced fleet management technologies that improve operational efficiency and enhance passenger experience. These incentives shall prioritize operators that:

- (1) Implement low-emission technologies, such as electric or hybrid vehicles.
- (2) Use advanced fleet management technologies, including real-time tracking and digital fare collection.

8. Penalties for Non-Compliance:

Operators who fail to comply with the technological standards may face the following penalties:

- (1) Fines for each violation of the standards set forth by the Authority and NTSA.
- (2) Suspension of service licenses until compliance with technological integration requirements is achieved.
- (3) Revocation of service licenses for repeated or serious non-compliance, as deemed necessary by the Authority.

Section 6.5: Fleet Expansion and Renewal

1. Obligations for Fleet Renewal:

(1) Operators are required to regularly update and renew their fleet to ensure compliance with the latest safety, environmental, and service quality standards established by NTSA

- and the Authority.
- (2) Operators must phase out older, non-compliant, or unsafe vehicles on a schedule established by the Authority to ensure that the fleet remains roadworthy and environmentally sustainable.
- (3) Operators shall conduct periodic reviews of their fleet to identify vehicles that are no longer compliant with national or metropolitan standards and prepare a plan for replacing such vehicles.

2. Promotion of Low-Emission and Electric Vehicles:

- (1) In alignment with national environmental goals and the Authority's strategy for reducing emissions within the metropolitan area, operators are encouraged to invest in lowemission, hybrid, or electric vehicles as part of their fleet expansion and renewal programs.
- (2) The Authority may introduce specific guidelines or mandates requiring operators to transition to vehicles that meet low-emission standards, as defined by national environmental regulations and NTSA.
- (3) Operators who introduce electric vehicles or other environmentally sustainable technologies into their fleet may be eligible for incentives, including tax reductions, subsidies, or preferential treatment in route allocations.

3. Phasing Out of Older Vehicles:

- (1) Operators are required to phase out vehicles that no longer meet the safety, performance, or environmental requirements outlined by NTSA or Authority. The Authority shall issue guidelines for the maximum allowable age of vehicles operating within the metropolitan area and set deadlines for the decommissioning of non-compliant vehicles.
- (2) Any vehicle that fails to meet the minimum safety and environmental standards established by national and metropolitan authorities shall be withdrawn from service immediately. Operators are responsible for ensuring that such vehicles are replaced with compliant alternatives.

4. Fleet Expansion Requirements:

- (1) When expanding their fleet, operators must ensure that all newly acquired vehicles meet or exceed the current safety, environmental, and service standards set by NTSA and Authority.
- (2) Operators must submit fleet expansion plans to the Authority for approval before introducing new vehicles into service. These plans shall include details on:
 - (a) The type and number of vehicles being added to the fleet.

- (b) The safety and environmental performance of the new vehicles.
- (c) The anticipated impact of fleet expansion on service quality, including increased service frequency and coverage.

5. Incentives for Fleet Renewal:

The Authority may provide financial incentives to operators who prioritize fleet renewal and expansion with low-emission or electric vehicles. These incentives may include:

- (1) Subsidies for the purchase of new vehicles that meet low-emission standards.
- (2) Tax incentives for operators transitioning to environmentally sustainable fleet models.
- (3) Grant programs to support operators investing in electric vehicle charging infrastructure.

6. Integration with National Environmental Standards:

- (1) Operators must ensure that fleet expansion and renewal plans align with the broader national environmental regulations and initiatives under NTSA Act and other applicable national laws.
- (2) The Authority shall coordinate with NTSA and other relevant agencies to ensure that operators are aware of national environmental goals and the steps required to meet these objectives.

7. Compliance Monitoring and Penalties:

- (1) The Authority shall monitor compliance with fleet renewal and expansion requirements through regular inspections and audits of operator fleets. Operators must submit regular reports to the Authority detailing their progress in renewing and expanding their fleet in line with the standards outlined in this Act.
- (2) Operators who fail to meet the fleet renewal or expansion requirements may be subject to the following penalties:
- (3) Fines for each non-compliant vehicle that remains in operation beyond the deadline established by the Authority.
- (4) Suspension of operating licenses or permits until non-compliant vehicles are removed from service and replaced with compliant alternatives.
- (5) Revocation of licenses or permits for repeated failure to comply with the fleet expansion and renewal standards.

Part 7: Fare Collection and Revenue Transparency

Section 7.1: Fare Collection Systems

1. Adoption of Automated Fare Collection Systems

(1) All public transport operators within the Nairobi Metropolitan Area shall transition to

automated fare collection systems approved by the Authority. These systems shall utilize cashless or digital payment methods to enhance transparency, efficiency, and accountability in fare collection.

- (2) Approved systems shall include:
 - (a) Contactless payment options, such as smartcards, mobile payment applications, or digital wallets
 - (b) Prepaid fare mechanisms that allow passengers to load credit in advance for seamless boarding.
- (3) Automated fare collection systems must meet the technical and operational standards specified by the Authority, including:
 - (a) Compatibility with integrated metropolitan transport systems such as Bus Rapid Transit (BRT) and rail services.
 - (b) Interoperability across multiple operators to enable a unified payment system.
- (4) A transition period of three (3) years shall be allowed for operators to implement the required systems. During this period:
- (a) Operators shall submit an implementation plan detailing steps and timelines for transitioning to automated fare collection.
- (b) The Authority shall provide guidelines and technical support to assist operators in meeting compliance requirements.
- (c) Interim use of manual fare collection shall be permitted under strict conditions outlined by the Authority.

2. Prohibition of Manual Fare Collection

- (1) Upon expiration of the transition period, the use of manual fare collection (cash payments) shall be prohibited within the metropolitan area, except under circumstances explicitly authorized by the Authority.
- (2) Operators found engaging in unauthorized manual fare collection after the transition period shall face penalties as outlined in Part 9 of these Regulations.
- (3) Operators must ensure that all personnel, including drivers and conductors, are:
 - (a) Trained in the operation and troubleshooting of digital fare collection systems.
 - (b) Capable of assisting passengers with the use of automated systems.

3. Fare Collection Data and Monitoring

- (1) Operators shall ensure that automated fare collection systems are integrated with the Authority's centralized monitoring systems to:
 - (a) Enable real-time sharing of fare revenue and ridership data.
 - (b) Facilitate accurate revenue reconciliation and transparency.

- (2) The Authority shall:
 - (a) Access fare collection data for monitoring revenue, ridership patterns, and adherence to fare structures.
 - (b) Use the data to evaluate operator performance and inform planning and policy decisions.
- (3) Operators failing to link their automated systems to the Authority's monitoring framework by the end of the transition period shall be subject to penalties or license suspension.

4. Incentives and Support for Compliance

- (1) To facilitate the adoption of automated fare collection systems, the Authority shall:
 - (a) Provide operators with financial or technical assistance, including access to grants, subsidies, or concessional loans where applicable.
- (b) Engage private sector players to develop and implement cost-effective, interoperable fare collection solutions.
- (2) Operators demonstrating early adoption or exemplary compliance with automated fare collection systems shall be eligible for incentives, including:
 - (a) Priority access to new routes or licenses.
 - (b) Reduced regulatory fees.

5. Reporting and Enforcement

- (1) Operators shall provide the Authority with periodic progress reports during the transition period, detailing the adoption and functionality of automated systems.
- (2) The Authority shall conduct inspections and audits to ensure that:
 - (a) Automated systems meet the prescribed technical and operational standards.
 - (b) Operators are adhering to the transition plan and timeline.
- (3) Non-compliance with transition deadlines or system requirements shall result in penalties, as outlined in Part 9 of these Regulations.

Section 7.2: Revenue Reporting

1. Submission of Revenue Reports

- (1) Operators are required to submit detailed monthly revenue reports to the Authority in the format prescribed by the Authority. These reports shall include:
 - (a) Total fare revenue collected across all routes.
 - (b) Ridership data, including breakdowns of revenue by route.
 - (c) Any additional revenue generated through auxiliary services, where applicable.
- (2) Revenue reports must be verified through regular audits conducted by the operators to

ensure accuracy and compliance with the Authority's requirements.

2. Coordination with Tax Authorities

- (1) Operators shall ensure that all fare revenue is reported in compliance with applicable national tax laws and regulations.
- (2) The Authority may collaborate with relevant tax authorities to enforce tax compliance by operators and to address issues such as revenue underreporting or tax evasion.

3. Monitoring and Auditing

- (1) The Authority shall conduct random and scheduled audits of fare collection systems and revenue reports to verify accuracy and compliance.
- (2) Operators must grant the Authority access to all necessary records, including fare logs, digital transaction data, and financial reconciliations, for audit purposes.
- (3) Any failure to provide accurate revenue reports or evidence of revenue manipulation shall result in penalties as outlined in these Regulations, including fines, suspension of licenses, or revocation of permits.

Section 7.3: Fare Adjustments

1. Authority Control of Fare Structures:

- (1) The Authority shall set the official fare structures for all public transport services within the metropolitan area, including base fares, distance-based fares, and fare caps. Operators are required to comply with these fare structures without exception.
- (2) The Authority may review and adjust fares periodically, based on factors such as operational costs, inflation, and service expansion. Fare adjustments shall be communicated to operators in writing, along with the effective date of such adjustments.

2. Prohibition of Unauthorized Fare Increases:

- (1) Operators are prohibited from imposing unauthorized fare increases or surcharges on passengers, regardless of operational challenges or other factors.
- (2) Any fare increase not explicitly approved by the Authority shall be deemed unlawful, and operators found in violation may face immediate penalties, including the suspension of operating permits.

3. Application for Fare Adjustments:

(1) Operators may apply to the Authority for fare adjustments if they can demonstrate that existing fares are insufficient to cover operational costs or if there are significant changes in fuel prices or other operational expenses.

(2) Any application for fare adjustments must include detailed financial statements, operational cost analyses, and a justification for the requested increase. The Authority will review such applications and decide on a case-by-case basis.

4. Fare Transparency for Passengers:

- (1) Operators must ensure that fare information is clearly communicated to passengers. This includes displaying approved fare rates in all vehicles, at ticketing points, and on digital platforms.
- (2) Operators are required to provide passengers with proof of payment (e.g., electronic receipts), ensuring that the fare charged is consistent with the official fare structure set by the Authority.

Part 8: Passengers' Welfare and Rights

Section 8.1: Passenger Safety

1. Obligation to Ensure Passenger Safety:

- (1) Operators are responsible for maintaining the highest standards of passenger safety at all times. This obligation includes:
- (2) Maintaining vehicles in a roadworthy condition, ensuring that all vehicles undergo regular safety inspections as required by NTSA and the Authority.

2. Driver Safety Protocols:

Operators must enforce strict driver safety protocols, ensuring that all drivers:

- (1) Hold valid licenses and appropriate certifications for operating public transport vehicles.
- (2) Undergo regular training on road safety, first aid, and emergency response.
- (3) Adhere to legal requirements regarding maximum working hours and rest periods to prevent fatigue and ensure safe driving.
- (4) Emergency Preparedness: All public transport vehicles must be equipped with emergency equipment, such as fire extinguishers, first aid kits, and emergency exits, which must be regularly inspected and maintained.

3. Compliance with Speed and Traffic Regulations:

- (1) Operators are required to ensure that their drivers comply with all speed limits and traffic regulations as set forth by NTSA. Operators will be held liable for any violations that compromise passenger safety or result in traffic offenses.
- (2) Operators must install and utilize speed limiters in all vehicles to prevent excessive speeding and ensure compliance with road safety standards.

Section 8.2: Passenger Feedback and Complaints Mechanism

1. Establishment of Feedback Systems:

- (1) Operators must establish and maintain formal mechanisms to receive, process, and resolve passenger feedback and complaints. These systems must be:
 - (a) Easily accessible to passengers through multiple channels, including online portals, mobile applications, and physical complaint boxes at stations or within vehicles.
 - (b) Capable of handling complaints related to service quality, safety concerns, fare disputes, and discrimination.

2. Timely Resolution of Complaints:

- (1) Operators are required to provide a timely response to all passenger complaints, with a standard resolution timeframe of 14 days from the date of complaint submission.
- (2) For serious safety-related complaints, operators must respond immediately and take necessary actions to mitigate risks, including suspending services or conducting investigations where appropriate.

3. Mandatory Reporting to Authority:

Operators must submit regular reports to the Authority detailing the number and types of complaints received, actions taken, and resolution rates. The Authority will use this data to monitor operator performance and ensure compliance with service standards.

Section 8.3: Passenger Rights

1. Right to Safe and Reliable Transport:

- (1) All passengers have the right to safe, reliable, and comfortable public transport services. Operators must ensure that their services meet these standards and that passengers are not subjected to unsafe or hazardous conditions during transit.
- (2) Passengers have the right to expect that vehicles will operate according to the scheduled timetables and that any deviations from the schedule will be communicated promptly.

2. Right to Non-Discrimination:

- (1) Operators must ensure that no passenger is discriminated against on the basis of race, gender, disability, age, religion, or socio-economic status. This includes:
- (2) Equal access to transport services for all passengers.
- (3) Non-discriminatory practices in the seating and boarding process, ensuring priority seating for vulnerable groups, including the elderly and persons with disabilities.

3. Right to Transparent Pricing:

- (1) Passengers are entitled to transparent fare structures, which must be clearly displayed within vehicles, at terminals, and on the operator's digital platforms.
- (2) Operators are prohibited from charging unauthorized surcharges or increasing fares without the explicit approval of the Authority.
- (3) Receipts or proof of payment must be issued for all transactions made through digital fare collection systems, ensuring transparency and accountability in fare collection.

4. Right to Comfortable Transport:

Passengers have the right to expect a basic level of comfort, which includes clean vehicles, functional seating, and adequate space for all passengers, with reasonable efforts made to avoid overcrowding, especially during peak hours.

Section 8.4: Protection of Passengers with Disabilities

1. Compliance with the Persons with Disabilities Act, 2003:

- (1) Operators must comply with the provisions of the Persons with Disabilities Act, 2003, ensuring that public transport services are accessible to all passengers with disabilities.
- (2) All vehicles must be equipped with ramps, priority seating, and other accessibility features to accommodate passengers with disabilities (PWDs). Operators must ensure that their fleet meets the accessibility standards prescribed by NTSA and the Authority.

2. Assistance for Passengers with Disabilities:

Operators must train all staff, including drivers and conductors, on how to assist passengers with disabilities. This includes:

- (1) Assisting with boarding and alighting.
- (2) Ensuring that priority seating is available and accessible.
- (3) Providing additional support in cases where passengers require assistance with mobility devices, such as wheelchairs or walkers.

3. Access to Transport Facilities:

- (1) Operators must ensure that all public transport terminals, stops, and related infrastructure are designed to meet universal accessibility standards. This includes the installation of ramps, tactile paving, accessible ticket counters, and other features that allow PWDs to use public transport services without barriers.
- (2) The Authority will work with operators to ensure that all transport facilities meet these accessibility requirements and that inspections are conducted regularly to enforce compliance.

Section 8.5: Gender Equality and Anti-Discrimination

1. Prohibition of Discriminatory Practices:

All Operators and staff shall be prohibited from engaging in discriminatory practices on the basis of gender, age, disability, ethnicity, religion, or any other protected characteristic. Public transport services must be accessible and welcoming to all, in compliance with national anti-discrimination laws.

2. Gender-Sensitive Service Provision:

Operators must ensure that services are gender-sensitive, providing safe and secure transport options for women and other vulnerable groups. This includes ensuring proper lighting, safe waiting areas, and accessible emergency services for passengers, particularly during night operations.

3. Training on Gender Equality and Diversity for Staff:

All staff employed by Operators, including drivers, conductors, and station personnel, must undergo mandatory training on gender equality, diversity, and inclusion. This training shall focus on eliminating bias, fostering respect for passengers, and promoting a safe and inclusive environment for all.

4. Measures to Prevent Harassment and Violence:

Operators shall implement specific measures to prevent harassment, violence, and abuse on public transport services. This includes:

- (1) Installing and maintaining security measures, such as CCTV cameras and emergency communication systems.
- (2) Providing reporting mechanisms for passengers to lodge complaints about harassment or violence.
- (3) Ensuring that staff are trained to respond to incidents of harassment and support affected passengers.

5. Monitoring and Reporting on Inclusivity Efforts:

The Authority shall regularly monitor Operators' efforts to promote gender equality and prevent discrimination. Operators will be required to submit periodic reports on their inclusivity efforts, including data on harassment incidents and corrective actions taken. These reports will be reviewed by the Authority to ensure compliance and improve service inclusivity.

Part 9: Reporting, Data Submission, Permissions, and Approvals

Section 9.1: Compliance with NTSA and National Regulations

1. NTSA Regulatory Compliance

- (1) All public transport operators must comply with NTSA (Operation of Public Service Vehicles) Regulations, 2014, as well as any other national regulations applicable to public service vehicles (PSVs).
- (2) Operators must possess a valid PSV license issued by NTSA before commencing operations, as stipulated in NTSA Act.
- (3) Licensing conditions and requirements, such as fleet size, staff qualifications, and operational management systems, are detailed in NTSA regulations and shall be adhered to by all operators

2. Recognition of NTSA Mandates

- (1) The Authority shall recognize and operate in alignment with NTSA-established licensing and operational frameworks, including vehicle inspections and driver certifications.
- (2) Operators shall comply with NTSA's reporting and documentation standards, including tax compliance certificates, roadworthiness certifications, and other documentation required for licensing.

3. Scope of Authority Regulations

These Regulations, while operating within the framework of NTSA's jurisdiction, establish additional and specific data submission and reporting requirements applicable within the Nairobi Metropolitan Area (NMA). Such requirements are designed to support the Authority in fulfilling its mandate for local transport planning, service monitoring, and operational optimization within the metropolitan area.

Section 9.2: NMA-Specific Reporting and Data Submission

1. Purpose and Scope

- (1) Purpose of Reporting:
 - (a) To enable the Authority to analyse fare revenue for:
 - (i) Fare policy decisions.
 - (ii) Network planning and optimization.
 - (iii) Monitoring service efficiency and equity.
 - (b) Ensure accountability and transparency in fare collection.
- (2) Scope:

- (a) This reporting requirement applies to all operators, including SACCOs, cooperatives, or independent operators providing public transport services within the Nairobi Metropolitan Area.
- (b) The data submitted shall not be used for taxation purposes but solely for regulatory and operational functions.

2. Financial Data Reporting Requirements

- (1) Data to be Reported:
 - (a) Fare Revenue:
 - (i) Daily or weekly aggregated fare collections by route.
 - (ii) Disaggregated data by payment methods (e.g., cash, digital payments, or smart cards).
 - (b) Cost Data (Optional for Interim Reporting):
 - (i) Basic operational costs, including fuel, wages, and maintenance.
 - (c) Other Revenue Streams:
 - (i) Earnings from ancillary services (e.g., advertisements or chartered trips).
- (2) Reporting Frequency:
 - (a) Fare revenue reports shall be submitted monthly or as prescribed by the Authority.
 - (b) Additional data requests may be issued by the Authority for specific periods to address identified policy needs or operational concerns.

3. Transition to Full Electronic Fare Collection

- (1) Interim Measures:
 - (a) Operators shall maintain detailed fare revenue records using existing collection methods.
 - (b) Records must be submitted electronically or in a format specified by the Authority.
- (2) Future Integration:
 - (a) Operators will transition to full electronic fare collection, with fare revenue transferred directly to the Public Transport Fund.
 - (b) The Authority shall issue guidelines on system integration and timelines for the transition.

4. Use of Financial Data by the Authority

- (1) Policy Development:
 - (a) Fare revenue analysis will inform decisions on:
 - (i) Fare adjustments.
 - (ii) Subsidy allocations.
 - (iii) Equitable distribution of services across the network.
- (2) Service Monitoring:

Fare revenue data will be used to monitor route profitability and ridership trends, ensuring efficient allocation of resources.

(3) Accountability:

The Authority shall ensure transparency in the use of submitted data and shall not share it with taxation authorities.

5. Data Submission Procedures

- (1) Reporting Format:
 - (a) Operators shall use templates or reporting forms prescribed by the Authority.
 - (b) All submissions must include:
 - (i) Operator identification details.
 - (ii) Route-specific revenue data.
 - (iii) Additional data as requested.
- (2) Submission Platform:
 - (a) Data must be submitted electronically through the Authority's online portal.
 - (b) In cases of system unavailability, physical submission may be permitted, with prior approval.

6. Penalties for Non-Compliance

- (1) Failure to Submit:
 - (a) Operators who fail to submit required data within the specified timeframe may face:
 - (i) Fines not exceeding [specified amount].
 - (ii) Suspension of licenses or permits until compliance is restored.
- (2) False Reporting:
 - (a) Submission of inaccurate or falsified data may result in:
 - (i) Immediate suspension of licenses.
 - (ii) Revocation of permits for repeated offenses.
- (3) Audit Rights:
 - (a) The Authority reserves the right to audit operators to verify the accuracy of submitted financial data.

7. Supporting Guidelines

- (1) Guidelines Issued by the Authority:
 - (a) The Authority shall publish detailed financial reporting guidelines, specifying:

- (i) Templates and formats for data submission.
- (ii) Deadlines for periodic submissions.
- (iii) Procedures for addressing discrepancies or delays.
- (2) Operator Training:

The Authority will conduct training sessions for operators to ensure they understand the reporting requirements and procedures.

Section 9.3: Permissions and Approvals

1. Activities Requiring Approval

Operators must obtain prior approval from the Authority for major changes or initiatives that impact the transport network, service quality, or passenger experience. These activities include:

- (1) Operational Changes:
 - (a) Fleet Increases: Adding new vehicles to the operational fleet.
 - (b) Route Changes: Adjustments to existing routes, introduction of new routes, or discontinuation of routes.
 - (c) Changes to Service Frequency: Alterations to service schedules, including increasing or decreasing trip frequencies.
 - (d) Introduction of New Services or Vehicle Types: Launching premium services, express routes, or introducing specialized vehicles (e.g., electric or wheelchair-accessible vehicles).
- (2) Infrastructure and Facilities:
 - (a) Depot or Service Station Locations: Establishing, relocating, or closing depots or service stations.
 - (b) Intermodal Hubs: Proposals to create or operate intermodal hubs for integrated connectivity.
 - (c) Terminal Construction or Modification: Significant construction or redesign of public transport terminals.
 - (d) Additional Bus Stops: Proposals for creating new bus stops or modifying existing ones that affect traffic flow, accessibility, or safety.
- (3) Financial and Revenue-Related Activities:
 - (a) Fare Adjustments: Any increase or decrease in fare rates.
 - (b) Applications for Subsidies or Grants: Proposals for financial support tied to specific services or projects.
- (4) Safety and Environmental Compliance:
 - (a) Implementation of New Safety Measures: Adoption of advanced safety systems or protocols.

- (b) Transition to Green Technologies: Transitioning to electric or low-emission vehicles or implementing new environmental measures.
- (5) Contractual and Organizational Changes:
 - (a) Change in Ownership or Management: Transfers of ownership or key management personnel.
 - (b) Mergers or Acquisitions: Any merger or acquisition affecting operational capacity or service standards.

2. Activities Requiring Permits

Minor changes that have limited or localized impacts on operations require permits from the Authority. These include:

(1) Advertising and Branding:

Branding or advertising campaigns on vehicles or terminals.

(2) Temporary Operations:

Temporary services for special events (e.g., sports, festivals) that require additional or modified operations.

(3) Minor Terminal Modifications:

Small-scale changes to terminal or depot infrastructure.

(4) Installation of Minor Bus Stops:

Creation of bus stops that do not significantly affect traffic patterns or public transport operations.

3. Reporting of Changes

For less critical changes, operators may notify the Authority after implementation. These include:

(1) Administrative Changes:

Changes to office locations or contact details.

(2) Minor Operational Adjustments:

Non-substantial schedule adjustments that do not impact service frequency or coverage.

4. Approval and Permit Procedures

To obtain approval or permits, operators must:

- (1) Submit an Application:
 - (a) Applications must include:

- (i) A detailed description of the proposed change.
- (ii) Supporting documentation, including operational plans, environmental impact assessments (if applicable), and financial feasibility studies.
- (2) Timelines:
 - (a) Applications for major approvals must be submitted at least [30 days] before the intended change.
 - (b) Permit applications for minor changes must be submitted at least [15 days] in advance.
- (3) Decision-Making:
 - (a) The Authority shall review and respond to applications within the specified timelines:
 - (i) Major Approvals: Decision within [30 days].
 - (ii) Permits: Decision within [15 days].
- (4) Revisions or Rejections:
 - (a) If applications are incomplete or require amendments, the Authority will notify operators within [10 days] of submission.

5. Penalties for Unauthorized Changes

Operators implementing changes without obtaining the necessary approvals or permits may face the following penalties:

(1) Fines:

Financial penalties as specified in the Authority's penalty guidelines.

- (2) Suspension or Revocation of Licenses:
 - (a) Suspension of licenses or permits until compliance is achieved.
 - (b) Revocation of licenses for repeated or serious violations.
- (3) Additional Inspections:

Mandatory inspections or audits to ensure compliance with Authority regulations.

Section 9.4: Monitoring of Compliance

1. Inspection Mechanisms for Submitted Data

The Authority shall establish a robust system for monitoring compliance by reviewing and verifying all data submitted by operators. Key elements of this system include:

- (1) Data Verification Audits:
 - (a) Periodic audits of submitted financial, operational, and administrative data to ensure accuracy and consistency with actual operations.
 - (b) Cross-referencing submitted data with records from other relevant agencies, including NTSA and tax authorities.
- (2) Site Inspections:

- (a) Unannounced inspections of depots, service stations, and offices to validate data related to fleet size, depot locations, and operational capacity.
- (b) On-site reviews of records, including maintenance logs, driver rosters, and route performance data.
- (3) Use of Digital Monitoring Tools:
 - (a) Integration of automated systems, such as GPS tracking and cashless fare collection platforms, to enable real-time monitoring of operations and comparison with submitted data.
 - (b) Regular checks of digital systems to identify discrepancies, such as route deviations, missed schedules, or unreported fleet usage.
- (4) Passenger Feedback:

Collection and analysis of passenger feedback to identify potential non-compliance with service standards or operational reporting requirements.

2. Verification of Changes Implemented with Permission

The Authority shall ensure that any changes made by operators, for which prior approval or permits were required, are verified for compliance with the conditions set by the Authority. The following steps shall be taken:

(1) Pre-Implementation Review:

Review and validate the operator's proposed changes, such as route modifications or fleet increases, before granting approval or permits.

- (2) Post-Implementation Inspections:
 - (a) Conduct inspections and evaluations to confirm that approved changes have been implemented as specified.
 - (b) For fleet increases, inspect newly added vehicles for roadworthiness, safety compliance, and adherence to environmental standards.
 - (c) For route changes, monitor new or altered routes for compliance with approved schedules, passenger demand, and coordination with the overall network.
- (3) Conditional Approvals:

The Authority may grant conditional approvals, requiring operators to meet specified conditions within a set timeframe. Failure to meet these conditions may result in revocation of the approval.

(4) Coordination with County Governments:

Collaborate with county governments to verify changes involving infrastructure, such as the establishment of new depots, bus stops, or service stations.

3. Penalties for False or Incomplete Submissions

Operators submitting false, incomplete, or misleading data to the Authority shall face penalties

proportionate to the severity of the offense. Penalties may include:

(1) Financial Penalties:

Fines for submitting inaccurate or incomplete data, with the amount based on the scale and impact of the discrepancy.

(2) License or Permit Suspensions:

Temporary suspension of operating licenses or permits for deliberate or repeated instances of false reporting.

(3) Revocation of Licenses:

Permanent revocation of licenses or permits in cases of severe or intentional falsification of data.

- (4) Mandatory Corrective Actions:
 - (a) Operators may be required to:
 - (i) Submit corrected data within a specified timeframe.
 - (ii) Undergo additional audits or inspections at their own cost.

(5) Public Disclosure:

In cases of severe non-compliance, the Authority may publicly disclose the operator's violation to maintain accountability and transparency.

4. Appeal Mechanisms

Operators penalized for non-compliance shall have the right to appeal the Authority's decisions:

(1) Submission of Appeals:

Appeals must be submitted within [insert timeframe] of receiving the penalty notice, along with supporting documentation.

(2) Review Process:

An independent committee within the Authority shall review appeals and provide a final decision within [insert timeframe].

(3) Final Recourse:

Operators unsatisfied with the outcome of the appeal may seek legal redress as per the dispute resolution mechanisms outlined in these Regulations.

Part 10: Emergency Management and Preparedness

Section 10.1: General Obligations of Operators

1. Requirement to Establish Emergency Plans

All operators shall develop, maintain, and implement comprehensive emergency management plans tailored to their operations, ensuring the safety of passengers, staff, and the general public in the event of an emergency.

- (1) Emergency management plans shall address the following scenarios:
 - (a) Accidents and vehicle breakdowns.
 - (b) Natural disasters, including but not limited to floods and earthquakes.
 - (c) Public health emergencies, such as pandemics or outbreaks.
 - (d) Security incidents, including terrorist threats, civil unrest, or criminal activity.
- (2) The emergency management plan must include:
 - (a) Evacuation Procedures: Detailed steps for safely evacuating passengers and staff during emergencies.
 - (b) Communication Protocols: Methods for notifying passengers, the Authority, and emergency services during emergencies.
 - (c) Passenger Assistance: Strategies for assisting vulnerable populations, including persons with disabilities, elderly individuals, and children.
 - (d) Contingency Service Plans: Measures for service continuity, including rerouting or deploying backup vehicles.

2. Integration with the Authority's Emergency Framework

All emergency management plans must align with the overarching emergency preparedness and response framework established by the Authority.

- (1) Operators are required to:
 - (a) Participate in coordinated planning efforts with the Authority, relevant county governments, and national disaster response agencies.
 - (b) Provide their emergency plans to the Authority for review and approval before implementation.
 - (c) Update emergency plans periodically, or as directed by the Authority, to reflect changes in risks or operational environments.

The Authority may issue directives requiring operators to adjust their emergency plans to address specific risks or align with newly developed emergency management standards.

3. Submission and Review of Emergency Plans

- (1) Operators shall submit their emergency management plans to the Authority within [timeframe specified by the Authority] of obtaining a license or renewing an existing license.
- (2) The Authority shall review submitted plans and provide feedback or approval within 30 working days.
- (3) Emergency management plans shall be reviewed and updated:
 - (a) Every two years.
 - (b) Following a significant emergency or as directed by the Authority.

4. Public Awareness and Information

- (1) Operators shall:
 - (a) Display clear emergency instructions prominently within all vehicles, including:
 - (i) Emergency exit locations and usage.
 - (ii) Contact numbers for emergency assistance.
 - (b) Conduct periodic public awareness campaigns, in coordination with the Authority, to educate passengers on emergency protocols.
- (2) Passenger instructions must be provided in a format accessible to all, including visually impaired individuals and non-literate populations.

5. Penalties for Non-Compliance

- (1) Failure to develop, submit, or implement an emergency management plan as required under this section shall result in penalties, including:
 - (a) Fines not exceeding [amount specified by the Authority].
 - (b) Suspension of operating licenses until compliance is achieved.
- (2) Operators found to have inadequate emergency management plans that result in harm to passengers or disruption of services during an emergency may face:
 - (a) Additional fines.
 - (b) Revocation of licenses or permits.

6. Supporting Guidelines

- (1) The Authority shall develop and issue detailed Emergency Preparedness and Response Guidelines, specifying:
 - (a) Minimum standards for operator emergency plans.
 - (b) Requirements for training staff and conducting drills.
 - (c) Procedures for submitting and reviewing emergency plans.
 - (d) Communication and reporting protocols.
- (2) Operators shall comply with the guidelines issued by the Authority and ensure their plans meet the specified standards.

7. Timeline for Compliance:

- (1) Operators shall submit their emergency management plans to the Authority for approval within six (6) months of the commencement of these Regulations.
- (2) Newly licensed operators must submit their emergency management plans within ninety (90) days of receiving their operating license.

Section 10.2: Training and Capacity Building

1. Mandatory Emergency Training for Personnel

(1) Personnel

All operators are required to provide mandatory emergency training to their staff, including but not limited to:

- (a) Drivers.
- (b) Conductors.
- (c) Technical and maintenance personnel.
- (d) Administrative and support staff involved in operations.
- (2) Training programs shall cover the following core areas:
 - (a) Evacuation Procedures:
 - (i) Techniques for safely evacuating passengers from vehicles in various emergency scenarios.
 - (ii) Procedures for managing evacuations at terminals, bus stops, and other facilities.
 - (b) First Aid and Passenger Assistance:
 - Basic first aid, including treating injuries and stabilizing passengers until professional medical help arrives.
 - (ii) Providing assistance to vulnerable passengers, such as persons with disabilities, elderly individuals, and children.
 - (c) Communication Protocols:
 - Guidelines for notifying emergency services, the Authority, and passengers in the event of an incident.
 - (ii) Methods for disseminating real-time information during emergencies to ensure passenger safety and service continuity.

2. Operators shall ensure that:

- (1) Training is conducted at least annually and whenever there are significant changes to emergency procedures or operational plans.
- (2) All new staff undergo initial emergency training within [insert timeframe] of employment.
- (3) Records of training sessions, including participant attendance and training content, are maintained and made available for inspection by the Authority.

3. Emergency Drills

(1) Operators shall conduct regular emergency drills to evaluate and enhance the readiness of their personnel and systems. Drills must simulate real-life emergency scenarios, such

as:

- (a) Vehicle fires or breakdowns.
- (b) Passenger evacuations during natural disasters (e.g., floods, earthquakes).
- (c) Security incidents, including suspicious packages or acts of violence.
- (d) Public health emergencies (e.g., handling passengers during a pandemic outbreak).
- (e) The frequency of emergency drills shall be as follows:
- (f) Quarterly Drills: For operators with fleets exceeding [specified number] vehicles.
- (g) Biannual Drills: For smaller operators or those serving less densely populated areas.
- (2) The Authority may:
 - (a) Participate in or observe emergency drills to assess compliance with standards.
 - (b) Require operators to submit post-drill reports detailing lessons learned, identified gaps, and proposed corrective actions.
- (3) Operators shall:
 - (a) Include passengers and other stakeholders (e.g., emergency services) in large-scale drills, where practical, to improve the effectiveness of emergency responses.
 - (b) Use findings from drills to update their emergency management plans and training content.

4. Certification and Competency Validation

- (1) All personnel must receive certification upon completing emergency training. Certificates shall be valid for [insert timeframe], after which refresher training is mandatory. The Authority reserves the right to:
 - (a) Conduct spot checks to verify staff competency in emergency procedures.
 - (b) Revoke certifications if personnel fail to demonstrate adequate knowledge or skills during inspections or drills.

5. Penalties for Non-Compliance

- (1) Failure to provide mandatory training or conduct required emergency drills shall result in penalties, including:
 - (a) Fines not exceeding [insert amount specified by the Authority].
 - (b) Suspension of operating licenses until compliance is achieved.
- (2) Repeated failure to comply may lead to:
 - (a) Additional fines or sanctions.
 - (b) Revocation of licenses or permits.

6. Supporting Guidelines

(1) The Authority shall issue detailed Training and Emergency Drill Guidelines, outlining:

- (a) Minimum training requirements for various personnel roles.
- (b) Standards for conducting effective emergency drills.
- (c) Recordkeeping requirements for training and drills.
- (2) Operators shall comply with these guidelines and adjust their training and drills to meet the standards prescribed by the Authority.

7. Training Compliance timeline

- (1) Operators shall ensure that all personnel complete mandatory emergency response training within twelve (12) months of the commencement of these Regulations.
- (2) For newly hired personnel, training must be completed within thirty (30) days of their engagement.

Section 10.3: Emergency Equipment Requirements

1. Minimum Equipment for Vehicles

- (1) All public transport vehicles operating within the Nairobi Metropolitan Area shall be equipped with the following mandatory emergency equipment:
 - (a) Fire Extinguishers:

At least one functional fire extinguisher suitable for vehicle fires, maintained and inspected regularly as per manufacturer and Authority guidelines.

(b) First Aid Kits:

Fully stocked first aid kits, including supplies such as bandages, antiseptics, gloves, and emergency blankets, with inventory checked and replenished periodically.

(c) Emergency Exit Tools:

Tools designed to assist in emergency evacuations, such as window hammers or glass breakers, readily accessible to passengers and crew.

(d) Communication Devices:

Devices capable of contacting emergency services and the Authority, such as mobile phones, radios, or onboard communication systems.

- (2) Operators are responsible for ensuring that all emergency equipment is:
 - (a) Inspected and maintained regularly.
 - (b) Clearly marked and easily accessible to both passengers and staff.
 - (c) Accompanied by clear usage instructions in multiple languages, including Swahili and English.
- (3) The Authority may issue additional requirements for emergency equipment based on:
 - (a) The vehicle type and size.
 - (b) Specific risks associated with the vehicle's route or operating environment.

2. Operator Facilities

- (1) Terminals, depots, and other facilities owned or operated by public transport service providers must have the following emergency equipment and systems:
 - (a) Emergency Lighting and Signage:
 - Clearly marked exits and emergency routes with backup lighting systems to ensure visibility during power outages or emergencies.
 - (b) Fire Suppression Systems:
 - Adequate fire extinguishers, hydrants, or automated fire suppression systems, inspected and maintained in accordance with fire safety regulations.
- (2) Operators shall:
 - (a) Conduct regular inspections and maintenance of all emergency systems and equipment at their facilities.
 - (b) Display emergency response procedures prominently at all facilities, including contact numbers for emergency services and the Authority.

3. Reporting and Inspection

Operators must maintain detailed records of emergency equipment inspections and maintenance, including:

- (1) Dates of inspections and any repairs or replacements conducted.
- (2) Certification of compliance with safety standards.
- (3) The Authority reserves the right to:
- (4) Conduct unannounced inspections to verify compliance with emergency equipment requirements.
- (5) Issue improvement notices or impose penalties for non-compliance.

4. Penalties for Non-Compliance

- (1) Failure to equip vehicles or facilities with the required emergency equipment shall result in penalties, including:
 - (a) Fines not exceeding [specified amount].
 - (b) Suspension of operating licenses or permits until compliance is achieved.
- (2) Repeated or severe violations may lead to:
 - (a) Additional fines or sanctions.
 - (b) Revocation of operating licenses.

5. Supporting Guidelines

(1) The Authority shall issue Emergency Equipment Standards and Maintenance Guidelines, specifying:

- (a) The types and specifications of required emergency equipment.
- (b) Maintenance schedules and procedures.
- (c) Reporting requirements for inspections and replacements.
- (2) Operators shall ensure that their emergency equipment and systems comply with these guidelines and are updated to meet evolving safety standards.

6. Equipment Compliance Timeline:

- (1) Operators must retrofit their vehicles with mandatory emergency equipment within six (6) months of the commencement of these Regulations.
- (2) Operator facilities, including depots and terminals, must comply with emergency equipment requirements within twelve (12) months of the commencement of these Regulations."

Section 10.4: Reporting and Communication Protocols

1. Incident Reporting to the Authority

- (1) Incident Reporting Requirements
 - (a) Reporting Major Incidents:

Operators must report all major incidents to the Authority within the timeframe specified in the **Emergency Reporting and Communication Guidelines**. Major incidents include:

- (i) Accidents causing fatalities or injuries requiring hospitalization.
- (ii) Incidents resulting in the blockage or disruption of major roads, highways, or public transport corridors.
- (iii) Security-related events, such as violent assaults, acts of vandalism, or terrorism threats.
- (iv) Environmental hazards, including fuel spills or exposure to hazardous materials.
- (b) Reporting Minor Incidents:

Operators are required to document and submit summaries of minor incidents in their monthly or quarterly reports to the Authority. Minor incidents include:

- (i) Vehicle breakdowns causing temporary service disruptions.
- (ii) Passenger complaints related to service quality without physical harm or damage.
- (iii) Delays caused by manageable traffic or operational errors.
- (c) Annual Reporting on Incidents:

Operators must submit an **Annual Incident Report** detailing all major and minor incidents that occurred during the year.

The report must include:

- (i) A categorized summary of incidents.
- (ii) Analysis of recurring issues or patterns.
- (iii) Recommendations for improving safety and service continuity.
- (2) Contents of Incident Reports
 - (a) Detailed Report Requirements for Major Incidents:

Reports for major incidents must include:

(i) Nature and Cause of the Incident:

A comprehensive description, including origin, contributing factors, and any preliminary findings.

(ii) Immediate Actions Taken:

Steps implemented to mitigate harm, protect passengers and staff, and restore services.

(iii) Impact on Operations and Passengers:

A summary of disruptions, including affected routes, delays, injuries, property damage, or operational impacts.

- (b) Format and Submission of Reports:
 - (i) Reports must adhere to the formats prescribed by the Authority.
- (ii) Submissions may be made electronically via the Authority's online portal or physically at designated offices.
- (c) Collaboration on Investigations:
 - (i) Operators must cooperate fully with any follow-up investigations conducted by the Authority or other relevant agencies, including NTSA or emergency services.
- (3) Compliance Monitoring and Penalties
 - (a) Failure to Report:
 - (i) Operators failing to report major incidents within the specified timeframe shall face penalties, including fines, suspension, or revocation of licenses or permits.
 - (ii) Repeated non-compliance may result in stricter penalties or sanctions.
 - (b) False or Incomplete Reporting:
 - (i) Submission of inaccurate or incomplete reports may lead to investigations and penalties under the applicable provisions of these regulations.
- (4) Supporting Guidelines
 - (a) Emergency Reporting Guidelines:

The Authority shall issue guidelines detailing:

- (i) Definitions of major and minor incidents.
- (ii) Timeframes for reporting.
- (iii) Templates and formats for submissions.
- (iv) Documentation requirements for annual reporting.
- (b) Regular Updates:
 - (i) Operators must keep their reporting procedures updated to comply with any changes issued in the guidelines.

2. Communication with Passengers and the Authority

- (1) Operators must have systems in place to provide real-time communication during emergencies. These systems shall:
 - (a) Passenger Notifications:

Deliver real-time updates to passengers through onboard announcements, digital displays, mobile applications, or SMS alerts, including:

- (i) Details of the emergency.
- (ii) Expected delays or changes in service.
- (iii) Instructions for passenger safety or evacuation.
- (b) Coordination with the Authority:

Immediately notify the Authority of any emergencies and provide ongoing updates on response efforts and operational impacts.

- (c) Liaison with Emergency Services:
 - Establish direct communication with police, fire, medical, or other emergency services as required to address the incident effectively.
- (2) Operators shall ensure that communication protocols are accessible to all passengers, including persons with disabilities and non-English speakers, by providing:
 - (a) Visual displays for the hearing impaired.
 - (b) Announcements in multiple languages, including Swahili and English.

3. Emergency Communication Systems

- (1) Operators must implement communication systems that enable:
 - (a) Real-time sharing of data with the Authority, such as GPS tracking, route changes, or service interruptions.
 - (b) Immediate contact with drivers, conductors, and ground staff during emergencies.
- (2) Systems must comply with the technical and operational standards established by the Authority.

4. Reporting and Follow-Up

- (1) Operators shall submit a Post-Incident Report to the Authority within [insert timeframe] of the emergency's resolution. This report shall include:
 - (a) A detailed account of the incident and its resolution.
 - (b) Recommendations for preventing similar emergencies in the future.
 - (c) Documentation of costs incurred and compensation provided to affected passengers (if applicable).
- (2) The Authority may request additional information or conduct independent reviews to ensure accurate reporting and accountability.

5. Penalties for Non-Compliance

- (1) Failure to adhere to the reporting and communication requirements outlined in this section shall result in penalties, including:
 - (a) Fines not exceeding [specified amount].
 - (b) Suspension of operating licenses or permits until compliance is achieved.
- (2) Operators who repeatedly fail to report or communicate during emergencies may face:
 - (i) Additional fines or sanctions.
 - (ii) Revocation of operating permits.

6. Supporting Guidelines

- (1) The Authority shall issue Emergency Reporting and Communication Guidelines, specifying:
 - (a) Reporting formats and templates.
 - (b) Approved communication systems and methods.
 - (c) Timeframes for reporting and follow-up actions.
- (2) Operators shall comply with these guidelines and ensure their communication protocols remain functional and up to date.

Section 10.5: Service Continuity and Recovery

1. Contingency Plans for Service Continuity

- (1) All operators shall develop and implement contingency plans to ensure continuity of public transport services during and after emergencies. These plans must:
 - (a) Identify potential risks and disruptions to services, including natural disasters, security threats, and infrastructure failures.
 - (b) Include measures for maintaining essential operations, such as:

- (i) **Alternative Routes**: Pre-identified routes to bypass affected areas and ensure continued service.
- (ii) **Backup Vehicles**: Availability of reserve vehicles to replace those rendered inoperable.
- (iii) Staff Redeployment: Procedures for reallocating drivers, conductors, and other critical personnel to meet operational demands.
- (2) Contingency plans must be:
 - (a) Aligned with the Authority's emergency management framework.
 - (b) Reviewed and updated annually or as directed by the Authority.
 - (c) Shared with the Authority upon request for approval and coordination.
- (3) Operators are required to train their personnel on the execution of contingency plans to ensure readiness during service disruptions.

2. Post-Emergency Recovery

- (1) Following the resolution of an emergency, operators must collaborate with the Authority to restore normal transport operations as quickly and efficiently as possible. Recovery efforts shall include:
- (a) Damage Assessment: Evaluation of vehicle and infrastructure conditions to determine operational readiness.
- (b) Service Restoration Timeline: Submission of a proposed schedule for resuming regular operations to the Authority.
- (c) Passenger Communication: Informing the public about recovery timelines, restored routes, and any temporary changes in service.
- (2) Operators must:
 - (a) Conduct post-emergency inspections of vehicles and facilities to ensure compliance with safety standards before resuming operations.
 - (b) Provide updates to the Authority on recovery progress, including any delays or challenges.
- (3) Operators may request assistance from the Authority for:
 - (a) Access to additional resources, such as vehicles or personnel.
 - (b) Coordination with other operators or government agencies to expedite recovery efforts.

3. Reporting and Evaluation

- (1) Operators shall submit a Post-Recovery Report to the Authority within [insert timeframe] of service restoration. The report must include:
 - (a) A summary of the contingency measures implemented.
 - (b) Details of recovery actions taken, including timelines and outcomes.

- (c) Identification of challenges encountered and lessons learned.
- (d) Recommendations for improving future service continuity and recovery efforts.
- (2) The Authority may use these reports to:
 - (a) Evaluate operator performance during and after emergencies.
 - (b) Identify best practices and areas for improvement in emergency response and recovery planning.

4. Penalties for Non-Compliance

- (1) Failure to develop or execute contingency plans or cooperate in post-emergency recovery efforts shall result in penalties, including:
 - (a) Fines not exceeding [specified amount].
 - (b) Suspension or revocation of operating licenses for severe or repeated non-compliance.
- (2) Operators failing to submit required reports or meet recovery timelines without justification may face additional sanctions.

5. Supporting Guidelines

- (1) The Authority shall issue Service Continuity and Recovery Guidelines, outlining:
 - (a) Minimum requirements for contingency plans.
 - (b) Procedures for coordinating with the Authority during recovery efforts.
 - (c) Reporting formats and timelines for post-emergency evaluations.
- (2) Operators shall adhere to these guidelines and ensure that their continuity and recovery measures align with the Authority's overall emergency management strategy.

6. Continuity Plan Compliance Timeline:

(1) Operators must prepare and submit contingency plans for service continuity and recovery to the Authority within six (6) months of the commencement of these Regulations."

Section 10.6: Penalties for Non-Compliance

1. Failure to Prepare

- (1) Operators who fail to establish, implement, or maintain emergency management plans or equipment in compliance with these regulations shall be subject to penalties, which may include:
 - (a) Fines: Monetary fines proportionate to the severity of the non-compliance, with a minimum and maximum penalty range specified by the Authority.
- (b) License Suspension: Temporary suspension of operating licenses or permits until the operator demonstrates compliance with emergency preparedness requirements.
- (c) License Revocation: Permanent revocation of licenses for operators who consistently fail

to meet emergency preparedness obligations or exhibit gross negligence.

- (2) The Authority shall:
 - (a) Conduct periodic audits of operator compliance with emergency preparedness requirements, including the presence of emergency equipment and updated emergency management plans.
 - (b) Issue improvement notices for minor breaches, requiring corrective actions within a specified timeframe.
- (3) Operators who fail to address deficiencies identified in improvement notices may face escalation of penalties, including suspension or revocation of permits.

2. Violation of Emergency Protocols

- (1) Operators who fail to follow established emergency protocols during an incident shall be held accountable for any resulting harm to passengers, staff, or property. Penalties may include:
 - (a) Additional Fines: Financial penalties for failure to execute emergency protocols, with higher penalties for incidents resulting in injury, loss of life, or significant property damage.
 - (b) Liability for Passenger Harm: Legal liability for damages or compensation claims filed by affected passengers or staff.
 - (c) Operational Penalties: Suspension of services on specific routes or regions until corrective measures are implemented.
- (2) Specific violations include, but are not limited to:
 - (a) Failing to activate emergency protocols during an incident.
 - (b) Inadequate communication with passengers or emergency services.
 - (c) Failure to evacuate passengers safely or provide required assistance during an emergency.
- (3) The Authority may:
 - (a) Require operators to undergo additional training or retraining for their personnel as part of corrective measures.
 - (b) Impose penalties in collaboration with other relevant agencies, such as NTSA, for violations under national or county-level regulations.

3. Reporting and Appeals

- (1) Operators subject to penalties under this section have the right to appeal the Authority's decisions within [specified timeframe] of receiving notice of the penalty.
 - (a) Appeals must be submitted in writing to the Authority, including supporting documentation and a statement of reasons for contesting the penalty.
 - (b) The Authority shall establish a formal appeals process, including review by an internal

- committee or independent tribunal.
- (2) Operators found to have valid reasons for non-compliance may be granted conditional waivers or extensions to rectify deficiencies.

4. Supporting Guidelines

- (1) The Authority shall issue Enforcement and Penalty Guidelines, specifying:
 - (a) The scale of fines for different categories of non-compliance.
 - (b) Criteria for determining the severity of violations and corresponding penalties.
 - (c) Procedures for issuing improvement notices, suspensions, and revocations.
- (2) Operators shall be required to familiarize themselves with these guidelines and ensure their practices remain compliant to avoid penalties.

5. Public Notification of Penalties

- (1) In cases of severe or repeated non-compliance, the Authority reserves the right to publicly disclose penalties imposed on operators. Such notifications may include:
 - (a) Publication on the Authority's official website.
 - (b) Notices at affected transport hubs or terminals.
- (2) Public disclosures aim to promote transparency, accountability, and improved safety standards within the public transport sector.

Section 10.7: Guidelines for Implementation

1. Authority-Issued Guidelines

- (1) The Authority shall develop and issue Emergency Preparedness and Response Guidelines to provide operators with detailed instructions for compliance with these regulations. The guidelines shall include:
 - (a) Standards for Emergency Plans: Requirements for the structure, content, and scope of operator emergency management plans, ensuring they address:
 - (i) Accident response.
 - (ii) Natural disaster preparedness (e.g., floods, earthquakes).
 - (iii) Public health emergencies.
 - (iv) Security threats, including terrorism.
 - (b) Training Requirements: Specifications for mandatory training programs for drivers, conductors, and other staff, covering:

- (i) Evacuation procedures.
- (ii) Communication protocols.
- (iii) First aid and passenger assistance.
- (c) Equipment Specifications: Minimum standards for emergency equipment, such as fire extinguishers, first aid kits, emergency exit tools, and communication devices for vehicles and facilities.
- (2) Guidelines shall be made publicly available through:
 - (a) The Authority's official website.
 - (b) Physical distribution at designated Authority offices.
 - (c) Communication to operators via email or other electronic means.
- (3) The Authority may periodically review and update the guidelines to reflect emerging risks, technological advancements, and feedback from stakeholders.

2. Schedule for Compliance

- (1) The Authority shall establish specific timelines for operators to comply with the emergency preparedness and response requirements. These timelines shall be categorized as follows:
 - (a) Immediate Compliance: For essential measures such as equipping vehicles with fire extinguishers, first aid kits, and communication devices, operators must comply within [insert timeframe, e.g., 3 months] from the issuance of the guidelines.
 - (b) Short-Term Compliance: Operators must develop and submit emergency management plans within [insert timeframe, e.g., 6 months] of the guideline's issuance.
 - (c) Long-Term Compliance: Operators must implement advanced measures, such as conducting regular emergency drills and integrating with the Authority's emergency framework, within [insert timeframe, e.g., 12 months].
- (2) Operators shall receive written notice of compliance deadlines, including:
 - (a) Specific dates for meeting each requirement.
 - (b) Details of documentation to be submitted for verification.
 - (c) Penalties for failure to meet deadlines.
- (3) Operators unable to meet compliance deadlines due to valid constraints may request an extension by:
 - (a) Submitting a formal application to the Authority at least [insert timeframe, e.g., 30 days] before the compliance deadline.
 - (b) Providing justification and evidence of efforts made to achieve compliance.

3. Monitoring and Enforcement

- (1) The Authority shall monitor operator compliance with the issued guidelines through:
 - (a) Inspections: Scheduled and random inspections of vehicles, facilities, and emergency management plans.
 - (b) Reporting Requirements: Operators must submit compliance reports, detailing the steps taken to meet emergency preparedness and response standards.
 - (c) Audits: Periodic audits of operator practices to ensure ongoing adherence to the guidelines.
- (2) Operators failing to comply with the established schedules or guidelines may face penalties, including:
 - (a) Fines as specified in the Enforcement and Penalty Regulations.
 - (b) Suspension or revocation of operating licenses for severe or repeated non-compliance.

4. Stakeholder Engagement

- (1) The Authority shall engage stakeholders, including:
 - (a) Operators, for feedback on the guidelines and timelines.
 - (b) Emergency response agencies, to align plans with broader metropolitan emergency frameworks.
 - (c) County governments, to ensure that local risks and conditions are addressed.
- (2) Stakeholders shall participate in periodic review meetings to ensure the guidelines remain practical, effective, and aligned with operational realities.

5. Public Awareness

- (1) The Authority shall publish summaries of the Emergency Preparedness and Response Guidelines to inform passengers and the general public about the measures being implemented.
 - (a) Passenger communication materials may include posters, brochures, and digital notices highlighting safety measures in public transport.
- (2) Public feedback mechanisms, such as surveys or suggestion platforms, shall be established to allow passengers to contribute to the improvement of emergency preparedness and response efforts.

Part 11: Environmental Sustainability

Section 11.1: Emission Reduction

1. Compliance with National Emission Standards:

All Operators within the metropolitan area are required to comply with the emission standards

established under the Environmental Management and Coordination Act (EMCA), 1999, and any regulations set forth by the National Environment Management Authority (NEMA). Operators must ensure their vehicles meet the necessary emission requirements. Failure to comply may result in enforcement actions, including fines, penalties, or suspension of operating licenses by the Authority.

2. Transition to Low-Emission Vehicles:

Operators must gradually transition to low-emission and environmentally friendly vehicles, including electric and hybrid buses. Operators are required to develop and implement plans to phase out older, high-emission vehicles in favour of cleaner alternatives, in line with national environmental policies and deadlines set by the Authority.

3. Emission Monitoring and Reporting:

Operators are required to participate in the emissions monitoring program established by the Authority. Operators must submit regular emissions reports for their vehicle fleet, including data on fuel type, vehicle condition, and emission levels. The Authority will public summaries of these reports to ensure transparency in environmental performance.

4. Incentives for Emission Reduction:

Operators who demonstrate compliance with emission reduction targets and adopt lowemission technologies may be eligible for various incentives, including:

- (1) Tax reductions or subsidies for purchasing low-emission vehicles.
- (2) Priority access to routes or preferential consideration for government contracts for operators who meet or exceed emission reduction targets.

Section 11.2: Sustainable Practices for Operators

1. Implementation of Sustainable Practices:

Operators must adopt sustainable operational practices to minimize their environmental impact. These practices include, but are not limited to:

- (1) Fuel Efficiency: Operators are required to implement measures to optimize fuel consumption, such as regular vehicle maintenance, fleet upgrades, and driver training in fuel-efficient driving techniques.
- (2) Waste Reduction: Operators must reduce waste associated with their operations, including minimizing disposable materials and ensuring proper waste disposal in vehicles, terminals, and maintenance facilities.
- (3) Water Conservation: Operators shall ensure that vehicle maintenance and cleaning activities are conducted using water-efficient practices, minimizing the pollution of water

resources.

2. Adoption of Renewable Energy:

Where feasible, Operators are encouraged to incorporate renewable energy sources into their operations. This may include:

- (1) Solar-powered stations and charging points for electric vehicles.
- (2) Utilization of solar panels and other renewable energy sources in administrative offices, depots, and maintenance facilities.

3. Sustainability Audits:

Operators will be subject to regular sustainability audits conducted by the Authority to ensure adherence to environmental and sustainability practices. Operators found to be non-compliant must submit a corrective action plan within a timeframe specified by the Authority to address deficiencies.

4. Collaboration with the Authority:

Operators shall collaborate with the Authority to identify and implement additional sustainable practices, including:

- (1) Participating in research and pilot programs aimed at reducing the environmental footprint of public transport.
- (2) Sharing best practices with other operators to promote system-wide sustainability efforts.

Section 11.3: Recognition Programs for Environmental Compliance

1. Environmental Compliance Recognition:

Operators demonstrating outstanding compliance with environmental sustainability standards will be recognized through Authority-established recognition programs, which may include:

- (1) Annual awards for operators meeting or exceeding emission reduction targets and adopting innovative sustainable practices.
- (2) Public recognition on the Authority's official platforms, including its website, transport hubs, and media outlets, to highlight operators contributing to environmental sustainability.

2. Incentives for Recognized Operators:

Operators recognized for their environmental compliance under this section may be eligible for further incentives, including but not limited to:

- (1) Priority access to new routes.
- (2) Preferential consideration in contract opportunities awarded by the Authority.

Part 12: Rights and Responsibilities of Passengers and Operators

Operators, on the other hand, are afforded certain rights to ensure fair treatment and operational continuity, while being held accountable for meeting service standards, safety regulations, and customer service expectations. These provisions aim to promote a balance between the needs of passengers and the operational realities of Operators, fostering mutual respect and cooperation.

Section 12.1: Passenger Rights

1. Right to Safe and Reliable Transport:

All passengers within the metropolitan area have the right to safe, reliable, and accessible public transport services. Operators must ensure that their vehicles and services meet safety standards set by the Authority and other relevant regulatory bodies.

2. Right to Access Information:

Passengers are entitled to clear and accurate information regarding routes, schedules, fares, and any service changes. Operators must provide this information through appropriate channels, including digital platforms, printed materials, and signage at stations and stops.

3. Right to Accessible Services:

Passengers with disabilities, the elderly, and other vulnerable groups have the right to access public transport services that meet accessibility standards as outlined in this Act and other applicable laws. Operators must ensure that vehicles and infrastructure are equipped to accommodate passengers with special needs.

4. Right to Fair Treatment:

Passengers shall be treated with respect and dignity by all transport personnel. Operators must ensure that staff are trained in customer service and anti-harassment protocols to protect passengers from any form of discrimination, harassment, or abuse.

5. Right to Raise Complaints and Receive Redress:

Passengers have the right to lodge complaints regarding service quality, safety, or other issues. The Authority and transport operators must establish accessible and responsive mechanisms for handling passenger complaints and providing timely redress.

Section 12.2: Passenger Responsibilities

1. Compliance with Rules and Regulations:

Passengers are required to comply with all public transport rules, regulations, and directives issued by the Authority and transport operators. This includes following safety guidelines,

boarding and alighting at designated stops, and adhering to service protocols.

2. Respect for Public Transport Property:

Passengers must respect and protect public transport property, including vehicles, stations, and related infrastructure. Acts of vandalism, graffiti, littering, or damage to public transport assets are strictly prohibited and may result in penalties, fines, or legal action.

3. Courtesy Toward Other Passengers and Staff:

Passengers are expected to behave respectfully towards other passengers and transport staff. Harassment, discriminatory behaviour, and any form of physical or verbal abuse will not be tolerated and may result in removal from services or legal penalties.

4. Payment of Fares:

Passengers are responsible for paying the appropriate fare as determined by the Authority or Operators. Failure to pay fares, fare evasion, or using fraudulent tickets or passes may lead to penalties, including fines or suspension from using public transport services.

5. Reporting Safety Issues:

Passengers have a responsibility to report any safety issues, suspicious activities, or hazards they observe while using public transport. This includes notifying transport staff or using designated reporting channels provided by the Authority or operators to address potential safety concerns.

Section 12.3: Operator Rights:

1. Right to Fair Treatment:

Operators have the right to fair treatment from passengers and the Authority. This includes protection against harassment, abuse, and discriminatory behaviour from passengers or other stakeholders. Operators may refuse service to individuals who violate these standards, provided such refusals are consistent with established regulations.

2. Right to Regulatory Support:

Operators are entitled to receive regulatory and technical support from the Authority to ensure compliance with safety, service, and operational standards. This includes guidance on implementing new technologies, accessing subsidies, and adhering to the legal framework governing public transport services.

3. Right to Compensation for Service Interruptions:

Operators are entitled to compensation or relief from penalties in cases where service interruptions occur due to factors beyond their control, such as natural disasters, civil unrest, or public emergencies, as determined by the Authority.

4. Right to Participate in Policy Development:

Operators have the right to be involved in consultations and decision-making processes regarding public transport policies, fare structures, and service standards. The Authority shall ensure that operators' views and concerns are considered in the development and revision of regulations affecting their operations.

5. Right to Appeal and Dispute Resolution:

Operators have the right to appeal decisions made by the Authority that negatively affect their operations, including penalties, license suspensions, or fines. The Authority shall provide an independent and transparent dispute resolution mechanism to address grievances and ensure fair outcomes.

Section 12.4: Operator Responsibilities

1. Compliance with Service Standards:

Operators are responsible for adhering to the service standards set by the Authority, including safety, operational, and environmental requirements. Operators must ensure that vehicles, staff, and service delivery meet or exceed these standards at all times.

Provision of Safe and Reliable Services:

Operators must provide safe, reliable, and punctual services for passengers. This includes regular vehicle maintenance, adherence to established schedules, and ensuring that all safety measures are in place and followed by staff.

3. Respect for Passenger Rights:

Operators are responsible for ensuring that passengers are treated with respect and dignity. Staff must be trained in customer service and anti-harassment practices to protect passengers from discrimination, abuse, or unfair treatment. Operators must also address passenger complaints and concerns promptly.

4. Data Reporting and Transparency:

Operators are required to submit accurate and timely data regarding service operations, including ridership, safety incidents, and emissions, as mandated by the Authority. Operators

must maintain transparency in their operations and cooperate with regulatory audits or inspections.

5. Environmental Responsibility:

Operators are responsible for adopting environmentally sustainable practices, such as reducing emissions, maintaining fuel-efficient vehicles, and complying with environmental regulations set by the Authority. Failure to meet environmental standards may result in penalties or loss of operating privileges.

6. Responsiveness to Complaints and Service Issues:

Operators must provide accessible channels for passengers to lodge complaints and raise service issues. Complaints must be addressed promptly, and corrective actions should be taken to resolve service failures or safety concerns.

Part 13: Miscellaneous Provisions

Section 13.1: Offenses and Penalties

1. General Offenses:

Any public transport operator, driver, or crew member who violates the provisions of these Regulations or any regulations made under it shall be guilty of an offense. Offenses include, but are not limited to:

- (1) Operating without a valid license or permit.
- (2) Failure to meet safety, service, or accessibility standards.
- (3) Non-compliance with fare regulations or refusal to implement authorized fare adjustments.
- (4) Obstructing or failing to cooperate with inspections or audits conducted by the Authority or other authorized bodies.
- (5) Falsifying reports, data submissions, or other information required under these regulations.

2. Specific Penalties for Operators:

Operators found guilty of any offense under these regulations shall be subject to the following penalties:

- (1) Fines: Monetary penalties as determined by the Authority, depending on the severity of the offense.
- (2) License Suspension: Temporary suspension of operating licenses or permits until the violation is rectified.
- (3) License Revocation: Permanent revocation of licenses for serious or repeated violations.

(4) Service Restrictions: Limitation or cessation of services on certain routes until compliance is achieved.

3. Penalties for Passengers:

Passengers who violate the provisions of these Regulations, including fare evasion, destruction of public transport property, or any behaviour that endangers the safety of other passengers or disrupts services, may be subject to:

- (1) Fines: Imposed based on the severity of the violation.
- (2) Exclusion from Services: Temporary or permanent exclusion from using specific public transport services.

4. Penalties for Safety Violations:

Operators or drivers found to be in breach of safety standards, such as vehicle maintenance requirements, safety inspections, or passenger safety protocols, shall face penalties that may include:

- (1) Immediate Suspension: For violations posing imminent danger to public safety.
- (2) Fines: Imposed per safety violation, with escalated fines for repeat offenses.
- (3) Mandatory Training: Requirement to undergo safety training or retraining as a condition for retaining licenses.

5. Environmental Violations:

Operators who fail to comply with environmental standards, including emission regulations or sustainable practices, shall be subject to:

- (1) Fines: Based on the level of non-compliance and environmental impact.
- (2) Revocation of Environmental Certifications: If applicable, leading to suspension of operations until compliance is restored.

6. Appeal Mechanism:

Any party subject to a penalty under this section shall have the right to appeal the decision. Appeals shall be submitted to the appropriate tribunal or authority, as outlined in Part 18: Conflict Resolution and Enforcement, and must be filed within the timelines prescribed by the Authority.

Chapter 7

Bus Operator's Handbook

BUS OPERATOR'S HANDBOOK

GUIDELINES FOR BUS OPERATORS IN THE NAIROBI METROPOLITAN AREA







PARTNERS





MINISTRY OF ROADS AND TRANSPORT









MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION





MINISTRY OF LABOUR AND SOCIAL PROTECTION

STATE DEPARTMENT FOR LABOUR AND SKILLS DEVELOPMENT





















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3. Safety and Responsibility Guidelines

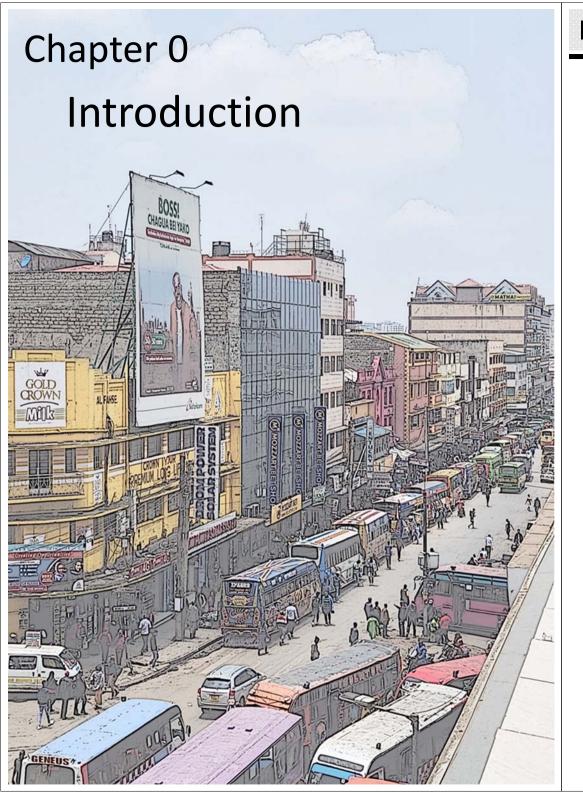
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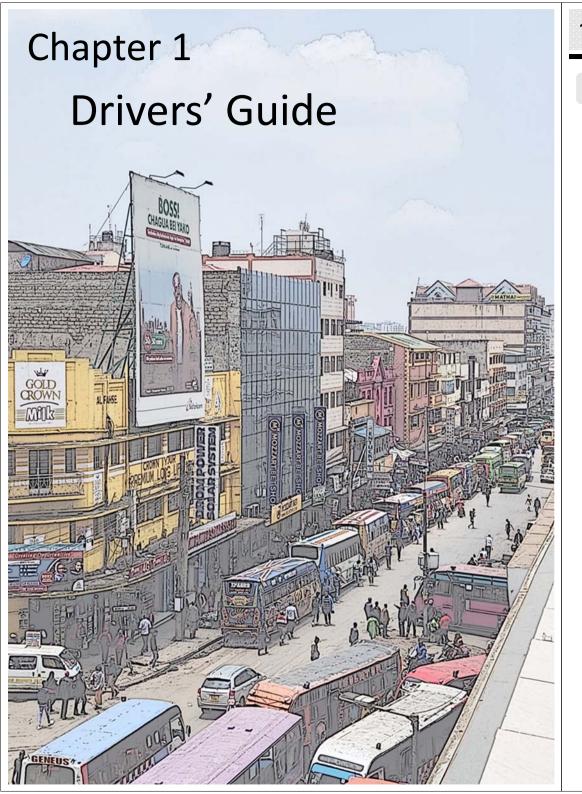
5-1 For Crews



Introduction

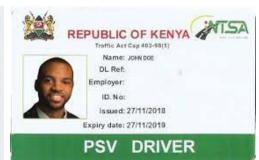
This manual is designed to improve the quality, safety, and efficiency of public bus transport in the Nairobi Metropolitan Area. It provides practical guidelines for bus drivers and conductors to ensure that you offer a reliable, professional, and safe service.

The aim is to help you deliver smooth operations that prioritize passenger satisfaction and maintain high standards of service. The rules and tips laid out here will guide you in day-to-day operations, focusing on both efficiency and courtesy to passengers.



- a. Legal Issues
- Driver must carry
 - a. The Driver License (Classes D2,D3), age 24 and above
 - b. The Drivers' PSV Badge (Nametags)
 - c. The National ID
 - d. All these documents MUST be in original form (no photocopies)







a. Legal Issues

- Driver shall not be under the influence of DRINKS or DRUGS.
- Some of the effects of alcohol are :
 - Alcohol slows down your brain functions. This affects your ability to respond, make decisions or react quickly.
 - Alcohol reduces your ability to judge how fast you are moving or your distance from other cars, people or objects.
 - c. It gives you false confidence you may take greater risks because you think your driving is better than it really is.
 - d. It makes it harder for you to concentrate and pay attention to various details in traffic.
 - e. Alcohol also affects your sense of balance.

1-1. Professionalism and Customer Service

b. Uniform and Appearance

- Wearing your uniform is important. It shows that you are professional and makes passengers feel more safe.
- A neat look helps you create a good first impression and helps set the right tone for their journey.



c. Powers of Crews under the Traffic Act

The PSV crew are mandated to ensure calmness in the event there is any passenger who is reasonably suspected to be breaking the traffic rules.

In such an event the passenger is supposed to

- Give his/her name and address to the police or to the driver or conductor or other authorized person upon request
- Immediately leave the bus/matatu if requested to do so by the driver or conductor
- If he/she refuses to get off the bus/matatu after being lawfully requested to do so by the conductor or driver or by any police officer, he/she will be ejected therefrom by the driver, conductor or officer.

During the whole situation care must be taken and Human Rights adhered to.

1-1. Professionalism and Customer Service

d. Information Display

 Always ensure that the route, fare and destination are correctly displayed by every means possible and visible.



a. Safety Comes First

- As a driver, you are responsible for the lives of everyone on board.
- Your top priority is to get passengers from point A to B safely.
- This should guide every decision you make while driving.
- Always give priority or way to
 - a. Ambulances
 - b. Fire Engines/Brigade
 - c. Police Cars



1-2. Driving Safely

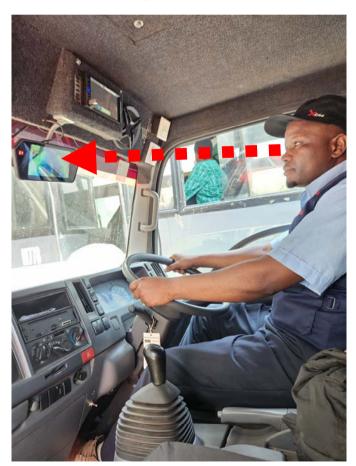
b. Stick to Safe Speeds

"Haraka Haraka Haina Baraka"

- It's not about reaching the destination as quickly as possible—it's about getting there safely.
- Driving at high speeds is dangerous.
- Observe the speed limits on each road.



- c. Make Sure Passengers are Seated
 - Never leave a stop until all passengers are seated.
- Do NOT allow standing passengers.
- Both you and the conductor should confirm this before moving the bus.



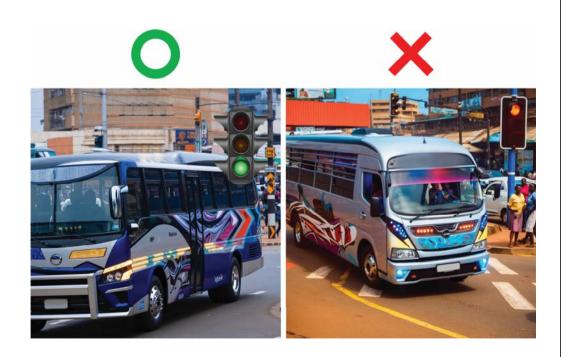
1-2. Driving Safely

- d. Use Your Indicators
 - Always use your indicators when;
 - a. Turning left or right
 - b. Changing lanes
 - c. Pulling into or away from a bus stop



e. Follow Traffic Signals

- Always obey traffic signals unless a traffic officer tells you otherwise.
- Running red lights is both illegal and dangerous.



1-2. Driving Safely

f. Look Out for Pedestrian

- Slow down at pedestrian crossings and always give way to people on foot, on wheelchair or pulling a cart / carriage.
- Do not proceed until they have fully crossed.



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g. No Driving on Sidewalks

- Sidewalks are strictly for pedestrians and cyclists.
- Never drive on the sidewalk, even if there is heavy traffic.



1-2. Driving Safely

h. Keep a Safe Distance

- Maintain enough distance between your bus and the vehicle ahead of you.
- This prevents sudden braking and keeps passengers safe and comfortable.



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i. Share the Road

- Be considerate of other drivers and road users.
- Safety should always come before trying to get ahead of other vehicles.



1-2. Driving Safely

j. Concentrate while Driving

Minimize talking without reasonable cause while the vehicle is in motion. Enter into conversation with the conductor or any other person only when necessary.

k. No Phones While Driving

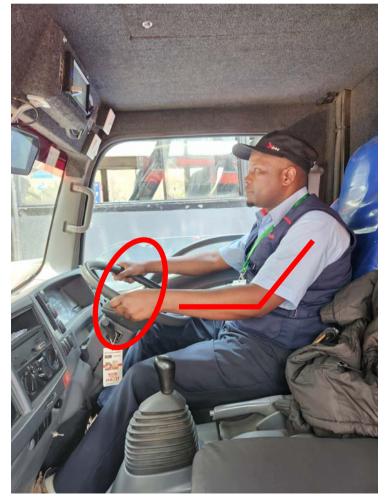
- Using a phone while driving—whether for calls, texting, or anything else—is dangerous and against the law.
- Keep your focus on the road.



1-2. Driving Safely

I. Hand Position on the Wheel

- Your hands should be at the 3 and 9 o'clock positions for better control and comfort during the drive.
- The position should give your elbow bend.



m. Wear Proper Shoes

 Closed-toe, professional shoes give you better control and comfort for long hours behind the wheel.



1-3. Pre-Shift Preparation

a. Health and Bus Condition

- Before your shift, inform your supervisor if you feel unwell or if the bus has any issues.
- You are also required to have a valid driver's license with you at all times.
- Ensure all safety equipment such as fire extinguishers, first aid kits, and warning triangles are available and functional before your operation.



a. Health and Bus Condition

 Before the operation, the following checks should be done.

External Inspection

- Tires
- Mirrors
- Wiper arm and blade
- Fluids leaks
- Lights and indicators

Internal Inspection

- Seat with serviceable seatbelts
- Instruments and control
- Clutch, brake and accelerator pedal (if applicable)
- Parking/Hand Brake
- Fuel level
- Emergency contact phone number display
- Loose objects

Under the Bonnet Checks

- Oil level
- Water level
- Battery
- Belt(s) A/C, Fan, Alternator
- Air cleaner etc...

1-3. Pre-Shift Preparation

a. Health and Bus Condition

- Ensure your vehicle has
 - a. Valid vehicle's license (RSL)
 - b. Valid insurance cover certificate (PSV)
 - valid local authority licenses (seasonal parking ticket)
 - d. Valid annual inspection sticker
 - e. Speed governor compliance certificate
 - f. Route schedule and fare tables

b. Report Any Issues

• If there's an accident or a breakdown, let the supervisor know right away so they can provide assistance.



1-3. Pre-Shift Preparation

c. Stick to the Route

 Always follow your designated route unless traffic officers or your supervisor instruct otherwise.



d. Use Designated Bus Stop

- Stop only at designated bus stops and make sure passengers have boarded or exited safely before moving on.
- Do not allow a bus to remain longer than is reasonable at designated bus stops when on-boarding or off-boarding passengers.



1-3. Pre-Shift Preparation

- e. Use the Horn Only When Necessary
- Your horn should only be used when there's an immediate danger.
- Do not use the horn aggressively even when the other road users are at fault.
- Do not use your horn and at designated areas where hooting is always prohibited e.g. hospitals and schools.
- Avoid using it unnecessarily.





f. Turn on Lights When Needed

- When weather conditions reduce visibility, make sure your headlights and internal lights are on to ensure safety.
- Make sure your headlights and internal lights are on during evenings and early mornings to ensure safety.



1-3. Pre-Shift Preparation

g. No Eating, Drinking, or Smoking

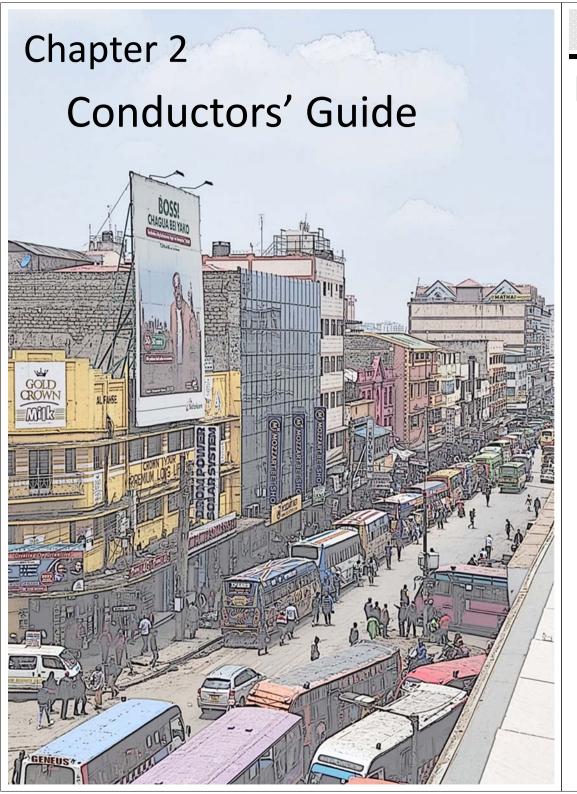
- Eating, drinking, and smoking while driving are strictly prohibited.
- These activities should be done during your breaks, outside the bus.



h. Examination of Traffic Documents by Police

- Where a police officer stops a vehicle for normal checking, they shall examine the relevant documents, which include
 - a. Driver's license
 - b. Vehicle's licenses
 - c. Insurance certificate
 - d. PSV badge for driver and conductor
 - e. Local authority licenses
- Police officer shall, when recording the names and addresses include,
 - a. Full names
 - b. Residential address
 - c. Business address
 - d. Postal address
 - e. Telephone and electronic address
 - f. The vehicle registration number and the full details of the SACCO

Notes



a. Wearing Proper Uniform

- Wearing the right uniform isn't just about looking good; it helps create a sense of security for passengers.
- When you're dressed professionally, people feel more comfortable and confident in the service you provide.
- Your appearance reflects the level of care and attention to detail that passengers can expect throughout their journey.





b. How to Handle Passengers

You are the face of the bus company or Sacco, so how you interact with passengers reflects on the entire organization. Here's how to make sure things run smoothly:

- Be a problem-solver. When issues arise, stay calm and focus on resolving them without blaming others.
- Learn from complaints. Instead of being defensive, use complaints as opportunities to improve. Stay polite and professional, even in difficult situations.
- Go beyond what's expected. A friendly, helpful, and attentive attitude can turn a routine trip into a positive experience.
- Saying "yes" helps. Whenever possible, try to assist passengers and make sure to follow through on any promises.
- Listening matters. Pay attention to what passengers are saying, including their tone and body language, to better understand their needs.

2-1. Professionalism and Customer Service

b. How to Handle Passengers

- Treat every passenger as an individual.
 Sincerity goes a long way in building trust and goodwill.
- Keep things confidential. Never discuss passengers in front of others—it could make them feel uncomfortable or disrespected.
- Be fully present when a passenger approaches. Do not walk away, get distracted, or make a phone call while they need assistance.
- Show respect to everyone, regardless of their appearance, age, or background.
- Remember;
 - a. Special needs people (PWDs)
 - b. Men v/s Woman
 - c. Children
 - d. Irate and aggressive clients
 - e. Luggage problems

c. Conduct and Communication

- You are a representative of your company or Sacco, so your behavior reflects the whole organization.
- Always aim to be a positive ambassador.

How to Interact with Passengers

- Passengers don't choose who their conductor is, so how you behave directly shapes their opinion of the entire service.
- Always treat passengers with kindness, understanding, and respect. A positive attitude makes for a better ride for everyone.
- You should:
 - Always be polite, patient, and friendly.
 - Avoid blaming or scolding passengers, even if a situation is challenging.
 - Be solution oriented. Instead of passing the blame, help resolve any issues that arise.

2-1. Professionalism and Customer Service

c. Conduct and Communication

- ➤ Take complaints seriously. Sometimes feedback can feel personal, but it's an opportunity to improve. Respond professionally.
- Aim to exceed expectations. The little extra effort can make all the difference.
- ➤ Use the word "YES" when you can. If passengers need help, do your best to assist and follow through on promises.
- Courtesy involves applying all the elements of good communication patience, having a positive attitude and using appropriate language.
- ➢ Be professional: This means giving clear information about the service you provide, the charges and any other detail that would ensure that you, the service provider, and the customer have clear expectations.

c. Conduct and Communication

- How do you feel when buying something at the supermarket?
- Imagine yourself when you go to the supermarket as a customer.
 - a. with smile or saying "Thank you and welcome again"



b. without smile or not saying "Thank you."



2-1. Professionalism and Customer Service

d. Sexual Harassment and Discrimination

- Sexual Harassment is a form of bullying or coercion which happens when a person directly or indirectly makes unwelcome requests for sexual intercourse, sexual contact, other sexual activity, uses written or spoken language of a sexual nature, uses visual material or shows physical behavior of sexual nature.
- Discrimination occurs when you chose to treat customers favorably or unfavorably because of their appearance, race, ethnic identity, gender or age.
- Both sexual harassment and discrimination are anti social behaviors that discourage positive interaction on the road.

d. Sexual Harassment and Discrimination

- It is important that crew members strive to preserve an onboard environment where vulnerable passengers are safe and unlikely to encounter inappropriate language, behavior, or contact.
- If they encounter sexual harassment or discrimination among passengers, they should immediately ask them to cease such behavior and seek police assistance.

2-2. Communicating with Passengers

a. Why Greetings Matter

- Greeting passengers with a smile and acknowledgment is not just a formality; it shows that you care about their comfort and satisfaction.
- A small gesture like saying "Good morning" or "Thank you" can go a long way in making passengers feel respected and appreciated, and it can improve the overall perception of the service.



2-2. Communicating with Passengers

- b. Communication During the Passenger Journey
 - i. Welcoming Passengers
 - As passengers board, greet them warmly. The following simple phrases can make them feel welcome and safe:
 - "Good morning"
 - "Good afternoon"
 - "Please watch your step"
 - "Thank you for waiting"
 - You should also be clear when announcing the bus route, for example: "This bus is heading to Ngong Bus Park/CBD."
 - Always pay special attention to passengers who might need extra help, like those with disabilities, the elderly, pregnant women, children, or people carrying infants.

2-2. Communicating with Passengers

- b. Communication During the Passenger Journey
 - ii. Before the Bus Moves
 - Before giving the signal to the driver, make sure all passengers are seated.
 - This ensures their safety and avoids any unnecessary accidents.
 - Endeavour to be best of your ability to ensure the passenger USE SEAT BELTS and behave inside the vehicle.



2-2. Communicating with Passengers

- b. Communication During the Passenger Journeyiii. Collecting fares
 - When it comes to fare collection, politeness goes a long way. Be clear and direct by asking things like:
 - "Where are you heading?"
 - ➤ "The fare to (destination) is ●Ksh (State the Amount)."
 - "How would you like to pay?"
 - Once you've collected the fare, always say, "Thank you. Enjoy your ride." It's a small gesture but shows you care about their experience.



2-2. Communicating with Passengers

- b. Communication During the Passenger Journey
 - iv. After the Bus Departs
 - Before the journey starts provide a brief introduction of the Pilot Project. Once your tasks are complete, take your seat and make any necessary announcements.
 - For instance, you might say,
 Thank you for riding with us. This bus is heading to Ngong Bus Park/CBD.
 The next stop is (location).



2-2. Communicating with Passengers

- b. Communication During the Passenger Journey
 - v. Helping Passengers Get Off
 - When passengers are getting off the bus, always be polite. You can say:
 - "Thank you"
 - "Have a nice day"
 - "Please watch your step"
 - Give special attention to vulnerable passengers, ensuring they get off safely and comfortably.



2-3. Assisting Vulnerable Passengers

a. Tender Feelings

- Always be ready to help elderly or physically challenged passengers, especially if they have luggage.
- Be patient—these passengers may need a little extra time when boarding or alighting.
- Always stay aware of their needs, and don't hesitate to use gestures or written notes to communicate with passengers who have hearing difficulties.



2-4. Summary of Do's and Don'ts



Do

- Greet passengers with a genuine smile.
- Make sure all passengers are seated before signaling the driver to start the journey.
- Always stay polite and friendly.
- Offer assistance during fare collection and provide clear information.
- Make timely announcements about the bus route and upcoming stops.
- Address passenger questions in a respectful manner.
- Handle disruptive passengers calmly and tactfully.
- Pay extra attention to children, elderly, and vulnerable passengers.



Don't

- Ignore passengers or fail to greet them.
- Start moving before passengers are seated.
- Show a bad attitude or behave rudely.
- Rush passengers while collecting fares.
- Forget to announce important information about the trip.
- Overlook questions or concerns from passengers.
- Neglect the needs of elderly passengers or children.

2-5. Aiming Comfortable/Safety Operation

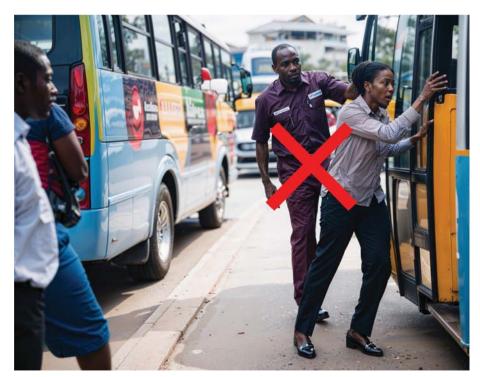
- a. Cleanliness and Lost Property
 - At the end of the trip, check the bus for any lost items.
- If you find something, hand it over to the stage manager immediately.
- Keeping the bus clean is also important, so make sure it's tidied up during breaks and at the end of your shift and empty the bin.



2-5. Aiming Comfortable/Safety Operation

b. Passenger Interaction

- Only one designated conductor shall be on the bus and avoid extra makanga/kamagera on board.
- Never force passengers to board the bus.
- If they ask for information, provide it clearly and politely.
- Always aim for accuracy when giving details about the service.



2-5. Aiming Comfortable/Safety Operation

c. Music

- While operating the bus, keep the music or radio volume at a reasonable level.
- Put music or radio that is in either English or Kiswahili only. Do not put vernacular ones.
- If another passenger is playing music too loudly, ask them politely to lower the volume or use headphones.



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2-5. Aiming Comfortable/Safety Operation

d. Eating and Smoking

- Do not eat, drink, chew gum, or smoke while on duty.
- Passengers are also prohibited from smoking in the bus.
- If you need to eat, do so outside the bus during your break.

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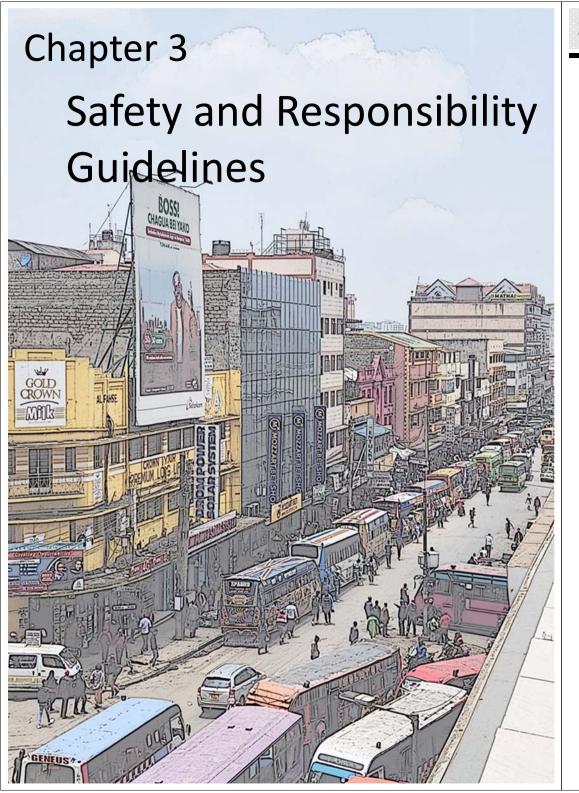
e. Door Safety

- For the safety of all passengers, make sure the doors are closed while the bus is moving.
- Also, for your own safety, you should not hang on the bus doors.
- You should never stand at the doors while the vehicle is moving.
- Only open them once the bus has come to a complete stop at a designated stop.





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3-1. Responsibilities of Every Crew Member

As part of the crew, there are certain responsibilities that everyone must take seriously to ensure the safety of both themselves and the passengers.

Here's what is expected of you:

1. Prioritize Health and Safety

- Each crew member must be aware of their own health and safety, as well as that of others.
- This means following safety procedures and workplace laws to protect yourself and those around you.
- Every action you take while on duty can impact others, so it is essential to exercise care in all aspects of the job.
- Incase you have stress or something that is disturbing you, do not hesitate to inform the stage managers this will help to improve mental well being during work.

3-1. Responsibilities of Every Crew Member

2. Follow Safety Regulations

- You are required to comply with all relevant safety rules and regulations.
- These could come from the company, your supervisor, or authorities that govern public transportation.
- Stay informed about these guidelines and make sure you follow them closely, as they are there to keep everyone safe.

3-2. Additional Obligations

Beyond the basic responsibilities, there are specific expectations you need to meet to maintain a safe and effective working environment:

1. Stick to Safe Work Practices

- Always perform your duties according to established safe practices.
- This applies to both internal company protocols and any regulations set by external authorities.
- Your actions directly contribute to creating a safe atmosphere for yourself, your colleagues, and the passengers.

2. Use Protective Gear Properly

- Whenever protective equipment is required—whether it is reflective clothing, gloves, or any other device—make sure you wear it correctly and keep it in good condition.
- This equipment is there to safeguard you,
 so take care of it and ensure it is always
 ready for use.

3-2. Additional Obligations

3. Avoid Dangerous Behavior

- Refrain from any behavior that could be considered dangerous or careless, like horseplay or pranks.
- These actions may seem harmless at first but can quickly lead to accidents or harm.
- Always conduct yourself in a manner that ensures the safety of everyone around you.

4. Be Fit for Duty

- It is crucial to be in the right physical and mental state while on the job.
- Make sure that your ability to work safely is not compromised by alcohol, drugs, or any other factor that might impair your judgment, awareness, or physical capabilities.
- You need to be sharp and focused throughout your shift to ensure the safety of everyone on board.

3-2. Additional Obligations

5. Report Issues Immediately

- If you notice anything that could potentially threaten the safety of yourself or others such as broken safety equipment, violations of safety rules, or hazardous conditions—report it immediately to your supervisor.
- Do not wait until something goes wrong.
- Your quick action could prevent accidents or serious incidents.

6. Work Together

- Safety is a team effort.
- Cooperate fully with your colleagues and supervisors, especially when it comes to tasks that affect the overall safety of the bus or workplace.
- Good communication and teamwork are vital to keeping the operation running smoothly and safely.

References

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www.kenyalaw.org

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THE NATIONAL TRANSPORT AND SAFETY AUTHORITY ACT CHAPTER 404

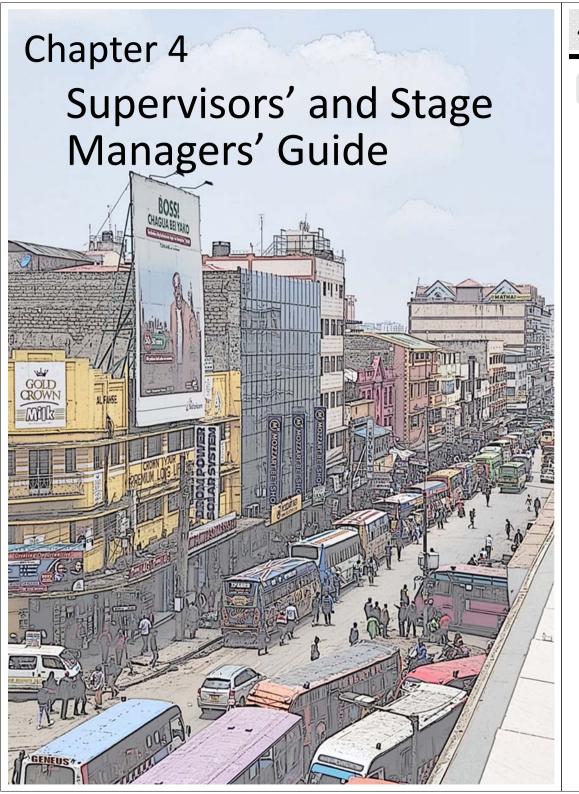
[Act No. 33 of 2012, Legal Notice 136 of 2012, Act No. 19 of 2014] Revised Edition 2022

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THE NATIONAL POLICE SERVICE ACT, 2011
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LEGAL NOTICE No. 100 -Special issue No. 671 Kenya Gazette Supplement No. 89 on 9th June, 2017 (Legislative Supplement No. 46) THE NATIONAL POLICE SERVICE ACT (No. 11A of 2011)

Notes



a. Roles

- Supervise the operation of the entire route and monitor that to be operated properly and to be on the scene.
- Take appropriate action in case of emergency.

b. Boarding Audit

- Supervisor will actually board the bus to verify that the bus is being operated as described in this handbook.
- In principle, boarding audit shall be conducted randomly.
- Supervisor shall record the results on an audit form shown in page 69.
- The audit results shall be shared to the relevant authorities and the operator to which the crew belongs on that day. Upon receiving the results, the operator shall provide training to the crew in question.
- The training should not only focus on the bad parts of the audit, but also praise and evaluate the crews who are doing well.
- However, if the content of the audit is extremely malicious, supervisor may give the crew a warning on the spot.

			Audit Form		
Date Operator	February 2025)	(
Vehicle No. Audit Section		₹			
Audit Time		ł			
Driver	Name				
	Items	Good	Average	Bad	Remarks
	Clothes				
	Driving Speed				
	Brakes				
	Detour				
	Obeying Traffic Signal				
	Distance from car in front				
	Departing after Passenger Seating				
	Stopping at appropriate bus stop				
	Attention to pedestrians				
		,			
Conductor Name	Name				
	Items	Good	Average	Bad	Remarks
	Clothes				
	Term of greetings				
	Term of thanks				
	Hospitality				
	Appropriate Fare Collection				
	Guidance of destination				
	Guidance of next bus stop				
Vehicle	ltems	Good	Average	Bad	Remarks
	Cleanliness				
	Posting Route Number (Destination)				
	Posting Fare Chart				
	Posting Contact Phone Number				

c. On-the-Street Audit

- Supervisor will monitor buses for proper operation at the intersections, bus stops or terminals.
- On-the-street audit shall be conducted undercover.
- Supervisor shall record the results on an audit form and reports the results to the relevant authorities and the operator to which the crew member belongs on the same day. Upon receiving the results, the operator shall provide training to the crew in question.
- The training should not only focus on the bad parts of the audit, but also praise and evaluate the crews who are doing well.

(On-the-Street A	udit For	m	
Date	Feb 2025	()		
Time	:			
Place				
Section				
Operator				
Vehicle Number				
Name of Auditor				
Driving	Good	Aver	age	Poor
Driving speed				
Driving appropriate road				
Slow down or stop when turning left or right				
Vehicles	Good			Poor
Stickers				
Door closing				
Bus stop	Good	Aver	age	Poor
Appropriate place				
Hospitality (Greetings)				
Avoid long parking				
Remarks :				

d. In Case of Emergency

- In case of an emergency situation, such as a traffic accident, sudden illness of passenger or crew, or vehicle breakdown, supervisor will coordinate with operation managers at the terminal to take necessary measures, such as rushing to the scene.
- First, the best efforts shall be made to secure the lives of passengers and operation.
- If necessary, operator will coordinate with the traffic police and emergency services, and contact the family of passenger who are injured and those who are suddenly ill.
- Contact to the supervisor of the bus operator to which the crew belongs.
- Collaborating with operation manager, a report shall be prepared regarding the situation, and shall be submitted to the related organization by the operator.

Traffic Accident Report					
Name of Operator					
Date and Time		/ / () AM·PM :	_		
Place		, , , , , , , , , , , , , , , , , , , ,			
Name of Crew		Driver : Conductor :			
Vehicle Number		DITYCE . CONTROLLOR .			
		Line: from to			
Operation					
Insurance		<u></u>	· a		
Police		Reported (where:) Not Reported	_		
Other Party		Driver Name Telephone No	_		
		Type of Car Vehicle Number			
		Insurance Company			
Weather		Sunny Cloudy Rainy Foggy			
Road Form	1	Flat Uphill Downhill			
	2	Road Intersection Near Intersection Bus stop			
	3	Straight Right Curve Left Curve			
	4	DryWetPavedUnpaved			
Situation	1	Driving (km) Accelarating Braking Stopping			
	2	Going Straight Turning Left Turning Right Passengers getting on and off			
	3	Signal (Green Yellow Red) No Signal			
Operation		Operating Not in service			
No of Passenger					
T ()		Head-on crash Rear-end crash Side crash			
Type of accident		Accident causing injury or death Injury inside the bus Others ()		
Cause		Jumping out Ignoring traffic signal Not stopping Lack of checking			
		Sudden starting Sudden brake Sudden turn the steering wheel			
		Excessive speed Unreasonable overtaking Sneaking in (cut in front of other vehicles))		
		Road structure () Others ()			
Summary (Description	on, Figur	s, Photo)	一		
	(perator NAMATA NTSA Traffic Polic	e		
		Total Constitution of the			
, ,			,		
<u> </u>					

a. Roles

- Ensure that the crews meet the minimum requirements for operation.
- Manage operations to provide safe transportation to users.
- In order to ensure that crews are available for work, if it is clear in advance that they will not be able to work due to illness or other reasons, measures will be taken to ensure that all work is definitely available, while keeping in touch with the operator to which they belong.
- Manage the crew schedule/job assignment.

4-2. For Stage Manager

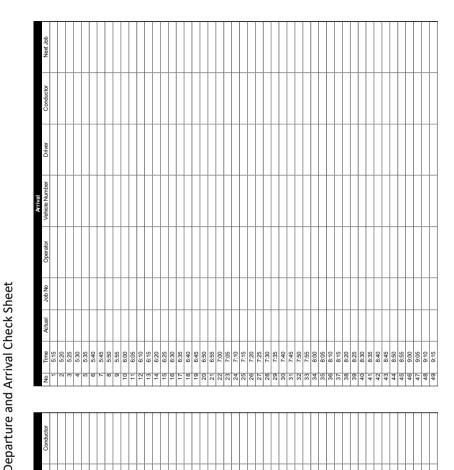
b. Roll Call -Before Operation

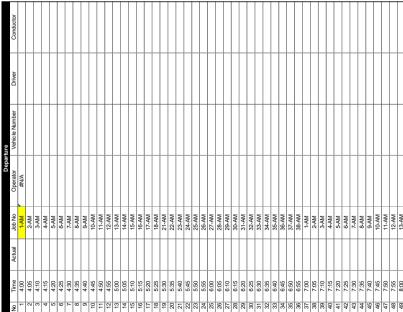
- Confirm crew members' attendance.
- Check crew members' uniform compliance and PSV badges.
- Do alcohol check on the crew members.
- Handover the daily operation timetable sheet.
- Give instructions to crews on the day of operation and precautions necessary for operation.
- Receive reports from crews on their health and vehicle condition at the time of arrival at work.
- Record all the items to the attendance check sheet.
- Daily check points in the sheet shall be changed every day.
- Give feedback to the crew members on the previous day operations. Stating the good and bad areas for improvement.

				Attendance Check Sheet	ŧ			
Terminal								
Date	÷	1-Feb-25						
Stage Manager		Donald Trump	George Bush	Abraham Lincoln	Supervisor	George Washington	u	
Today's Key Points		et's say "Thank y	you" to all the pass	Let's say "Thank you" to all the passenger when boarding	би			
oN dol	Attendance Time	Operator	Vehicle Number	Driver Conductor	Health Vehicle	Driver Leaving License Time	g Return Schedule	Remarks
1-AM	3:50	0	0	0		_		
2-AM	3:55	0	0	0 0		10:00		
3-AM	4:00	0	0	0 0		13:05	10	
4-AM	4:05	0	0	0 0		10:10		
5-AM	4:10	0	0	0 0		13:15	10	
6-AM	4:15	0	0	0 0		10:20		
7-AM	4:20	0	0	0 0		13:25	10	
8-AM	4:25	0	0	0 0		10:30		
9-AM	4:30	0	0	0		13:35	10	
10-AM	4:35	0	0	0 0		10:40		
11-AM	4:40	0	0	0 0		13:45	10	
12-AM	4:45	0	0	0		10:50	0	
13-AM	4:50	0	0	0		13:55	2	
14-AM	4:55	0	0	0 0		11:00		
15-AM	5:00	0	0	0		14:05		
16-AM	5:05	0	0	0		11:10	0	
17-AM	5:10	0	0	0		14:15	2	
18-AM	5:15	0	0	0		11:20	0	
EX-AM-1	3:50	0	0	0		12:55	2	
EX-AM-2	3:55	0	0	0		10:00		

c. Record of Operation

- Create the attendance check sheet.
- Also, check the departure and arrival at the terminus.
- Fill in the time for the departure and arrival in the departure and arrival check sheet.





d. In case of Delay

- When significant delays occur and buses are far apart from the schedule, dispatched extra crews and vehicle will be used to operate for their replacement.
- If there are operations by extra crews and vehicle, contact with the supervisor and operation manager dispatched.
- Fill in the result in the departure and arrival check sheet.
- However, if all the buses to be significantly delayed beyond the planned time due to the road conditions such as heavy traffic, it does not have to rely on the extra crews and vehicle. Instruct the crew member in operation to operate the buses despite the delay after taking a short break such as going to toilet.

e. In case of Emergency

- Arrange for extra crews and vehicle for the crews that are unable to operate due to sudden illness or vehicle breakdowns.
- The first priority is to secure human life and arrange for police and emergency medical services.
- Arrange for alternative operations.
- Respond in coordination with supervisors and other operation managers.
- If necessary, rush to the scene.
- If there are operations by extra crews and vehicle, contact with the supervisor and operation manager dispatched.
- Fill in the result in the departure and arrival check sheet.

	Traffic Accident Report					
Name of Operator						
Date and Time	-	/ / () AM-PM :				
	\dashv	/ / () AM-PM :				
Place		Delay Contribution				
Name of Crew	-	Driver: Conductor:				
Vehicle Number						
Operation		Line: from to				
Insurance	_	Reported (Company: Number:) Not Reported				
Police	_	Reported (where:) Not Reported				
Other Party		Driver Name Telephone No				
		Type ofCar Vehicle Number				
		Insurance Company				
Weather		Sunny Cloudy Rainy Foggy				
Road Form	1	Flat Uphill Downhill				
	2	Road Intersection Near Intersection Bus stop				
	3	Straight Right Curve Let Curve				
	4	□Dry □Wet □Paved □Unpaved				
Situation	1	Driving (km) Accelarating Braking Stopping				
	2	Going Straight Tuming Let Tuming Right Passengers getting on and off				
	3	Signal (Green Yellow Red) No Signal				
Operation		O perating Not in service				
No of Passenger						
		Head-on crash Rear-end crash Side crash				
Type of accident		Accident causing injury or death Injury inside the bus Others ()				
Cause		Jumping out Ignoring traffic signal Not stopping Lack of checking				
		Sudden starting Sudden brake Sudden turn the steering wheel				
		Excessive speed Unreasonable overtaking Sneaking in (cut in front of other vehicles)				
		Road structure () Others ()				
Summary (Description	n, Figur	s, Photo)				
		perator NaMATA NTSA Traffic Police				
1 1						

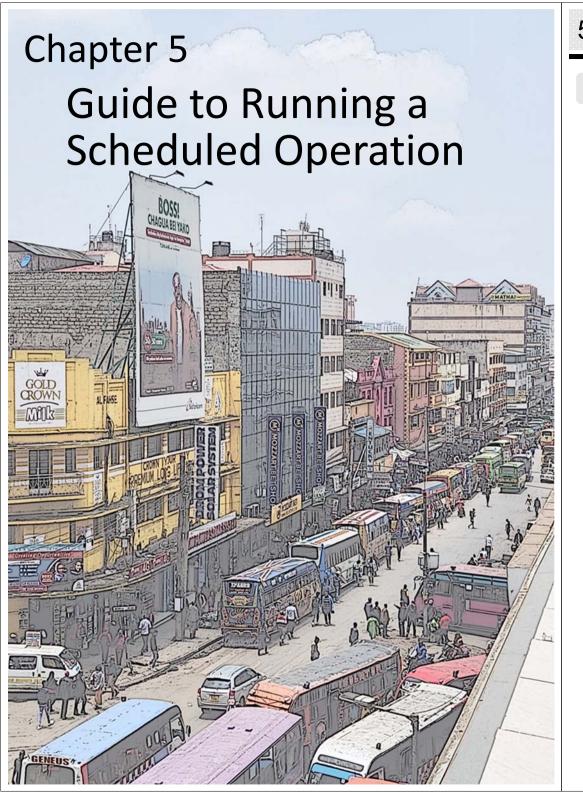
f. Management of Extra Crews

- Fwwfsljäj}ywfånwj|xåfsi%jmmingjåytåwjuqfhj%
 ymtxj%|mt%it%styåxmt|%zu¾tw%|twpåtwåfwj%
 zsfgqjåyt%|twplæfsi%fxxmlsåymjr åytåymj%
 tujwfynts3
- Instruct the extra crews to stay close to the operation manager so that they can respond immediately to unforeseen circumstances or in case of emergency.
- It is also possible to have them assist with roll call and arrival/departure checks.

4-2. For Stage Manager

g. Roll Call -After Operation-

- Receive a report from the crews on the status of the operation and the health condition.
- Collect the daily operation timetable sheet from the crews
- Mutually confirm the crews' work schedule for the following day and beyond.



5-1. For Crews

- Reporting to Stage Manager (show up)
- Arrive at the departure point at least 10 minutes prior to departure time.
- If crews are unable to come to work due to illness or unable to arrive on time at the terminus, crew should call the Operation Manager in charge of the day.
- Report the following information to the Operation Manager, and conduct a roll call.
 - a. Report that crews (drivers and conductors) are present.
 - b. Report that the crews are in good health.
 - c. The driver reports that there is nothing wrong with the vehicle.
 - d. The driver must have their driver's license and present it to the Operation Manager.

5-1. For Crews

- a. Reporting to Stage Manager (show up)
 - e. The operation manager gives the crews instructions necessary for the operation, such as precautions.
 - f. Driver shall receive the daily operation timetable sheet from the Operation Manager

5-1. For Crews

- b. Operation using Timetable
 - Crews shall operate using daily operation timetable sheet distributed by the operation manager during the roll call.
 - The driver must arrive at the bus stop 5
 minutes before the scheduled time, referring
 to the timetable attached to the daily
 operation timetable sheet.
- Even if seats are filled before the departure time, the departure time must be observed.
 At that time, the conductor should politely inform the passengers who are about to board the bus to take the next bus.
- The arrival time of the last stop is the estimated time.
- As a general rule, crews shall operate using the daily operation timetable sheet, however when instructed by the supervisor or operation manager, the instruction takes priority.

Vfr uqj

Daily Operation Timetable Sheet

_					
Day	Sa	t and Sun	Ва	se Ng	ong
	ah Na	Chow Un	Loo	vina	
J(ob No	Show-Up	Lea	ving	
	80	10:30 AM	9:05	S PM	
	D	eparture			Arrival
		•			
1	Ngong	10:40 A	M	CBD	11:55 AM
2	CBD	12:20 F	M	Ngong	1:35 PM
_		4.50 0	R.4		
3	Ngong	1:50 P	'IVI	CBD	3:05 PM
4	CBD	3:30 P	M	Macna	4:45 PM
4	CBD	3.30 1	IVI	Ngong	4.45 FIVI
		В	reak '	Time	
			roun		
5	Ngong	6:00 P	M	CBD	7:15 PM
	5 0				
6	CBD	7:40 P	M	Ngong	8:55 PM

5-1. For Crews

- c. Roles for Extra Driver/Conductor
- The role of the extra crews include the following;
 - To replace crews who are unable to come to work due to illness or other reasons
 - b. To replace crews who are unable to attend due to tardiness
 - c. In the event of an emergency (traffic accident, vehicle breakdown) in another vehicle in service, crews will take over for that operation
 - d. In the event of significant delays, if a crews are required to make a temporary operation as directed by the operation manager, shall operate as directed.

5-1. For Crews

c. Roles for Extra Driver/Conductor

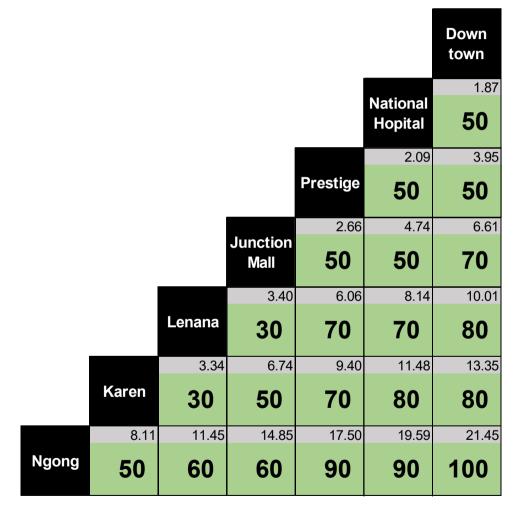
- Assist the Operations Manager in his/her duties (roll call, confirmation of departure and arrival of buses). As a rule, remain in close proximity to the Operation Manager during operations and be ready to engage in operations at any time.
- Follow other instructions of the Operation Manager as needed.
- Take breaks as directed by the Operation Manager or with their permission.

5-1. For Crews

d. Collect Fare using Fare Chart

- Fares shall be collected from passengers based on the fare chart.
- Fares will not change based on the day of the week, time of day, or weather conditions.
- Cashless fare payment system shall be used.
- If a passenger does not have M-PESA and wishes to pay in cash, cash will be collected by the Enumerator, who will pay to the conductor's M-PESA.
- After collecting the fare, be sure to say, "Thank you."

Fare Chart during the Pilot Project



5-1. For Crews

e. Bus Stop (Route) Information

- The conductor will announce the name of the next stop/passing bus stop in the bus and check to see if any passengers wish to get off during operation.
- Since it is necessary to operate all bus stops listed here, it is not acceptable for the crews to change the route of the service at their own discretion.

	From CBD Outbound
1	Railways Terminus
2	Nairobi Area Traffic Police Headquarter
3	Kenyatta National Hospital
4	Coptic / Mimosa
5	Uchumi / National Oil
6	Prestige Plaza
7	Adams Arcade / Kirichwa Lane
8	Posta
9	Impala
10	Junction Mall
11	Corner / Meteorological
12	Showground
13	Kenol
14	Pathway
15	Racecourse
16	Lenana
17	Kabwagi
18	Karen
19	Kephis
20	Kerarapon Road
21	Jogoo
22	Umoja
23	Bumps
24	Bulbul Kanisani
25	Naivas / Veterinary
26	Shell / Karmu House
27	El Paso
28	Zambia
29	Enchoro Euny
30	Ngong Terminus

	From Ngong Inbound
4	10 055
1 2	Ngong Terminus Delta
3	Zambia
4	Shell / Karmu House
5	Naivas / Veterinary
6	Embulbul
7	Bumps
8	Umoja
9	Kerarapon Road
10	Westwood
11	Windy Ridge
12	Karen
13	Miotoni West Road
14	Lenana
15	Racecourse
16	Kenol
17	Showground
18	Corner / Meteorological
19	Junction Mall
20	Brew Bistro
21	Impala
22	Posta
23	Edulink International College
24	Applewood Adams
25	Motherland
26	Prestige Plaza
27	Good Shepherd
28	Cars Guru
29	Coptic / Mimosa
30	Kenyatta National Hospital
31	Nairobi Area Traffic Police Headquarter
32	Agip
33	Railways Terminus

5-1. For Crews

- f. Reporting to Stage Manager (leaving)
- When the operation listed in the daily operation timetable sheet is completed, the following information shall be reported to the Operations Manager;
 - a. Any unusual operation conditions or details that occurred during the operation.
 - b. Return of the daily operation timetable sheet
 - c. Confirmation of the next day's work

Notes

Notes





Chapter 7

Report on Route 111 Pilot Project

THE PROJECT FOR CAPACITY BUILDING FOR BUS OPERATION POLICY AND MANAGEMENT IN NAIROBI METROPOLITAN AREA

Route 111 Pilot Project

June 2025

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1. OUTINE OF THE PILOT PROJECT

1.1 Objectives

This pilot project was implemented to provide quality public transport services based on the coordination among the related organizations including both regulators and operators. Demarcation of roles and responsibilities among the regulatory organizations and between the regulatory organizations and operators were proposed in the Project. The effectiveness of the demarcation and effectiveness of the measures to improve public bus services were demonstrated through the Pilot Project.

1.2 Routes

Route 111 which is operated between CBD Nairobi and Ngong Terminus with 22 km length, was selected as the bus route for the pilot project.



Figure 1.2.1 Route Map

1.3 Project Members

This Pilot Project was implemented through cooperation among related organizations including operators. The organizations that participated in the Pilot Project are listed Table

1.3.1.

Table 1.3.1 Member List

Category	Name of Organization
Regulatory	Nairobi Metropolitan Area Transport Authority
Organizations	National Transport Safety Authority
	Nairobi City Conty Government
	Kajiado County Government
	Kenya Urban Road Authority
	Traffic Police Force
	National Gender Equality Commission
Operators	Super Metro
	Metro Trans
	Enabled
	NTVRS
	Nangkis
	MCA
	Ngokana
	K-Trans
	Latema
	Raj Safari

1.4 Schedule

The pilot project was implemented from 3rd April to 2nd May 2025. It was originally scheduled for September 2024 but was postponed three times—to November 2024, February 2025, and finally to April 2025.

2. COORDINATION

2.1 Roles and Responsibilities

Roles and responsibilities of members were defined based on the outcomes of Working Group (WG) 1 activities in the Project, as shown in Table 2.1.1.

Table 2.1.1 Roles Demarcation

Item	Taken by	Description
Planning	NaMATA	Implementation of traffic surveys to understand current
		situation and make an implementation plan.
Road service	NTSA	Issue road service licensing for bus operators
licensing		
Operator	NaMATA	Set specifications for bus service on the corridor and make
licensing		an agreement with the operators.
Facility	KURA /County	Bus stop facilities and road facilities to access to bus stops
improvement	gov. /NaMATA	are improved to make bus service comfortable for
		passengers.
Crew training	NTSA/ Police	Driver training and conductor training including safety and
	Operators	hospitality is provided to make bus service reliable, safe,
	•	and comfortable.
Operation	Operators	Provide bus services based on an agreement with
		NaMATA.
Monitoring and	NaMATA	Effectiveness of bus service improvements are evaluated.
evaluation		

2.2 Periodical Meeting

Meetings among regulatory agencies, as well as between regulators and operators, were held as listed below to foster mutual understanding, exchange views, and coordinate the implementation of the pilot project.

Table 2.2.1 List of Meetings

Date	Main Attendees	Items
19th Feb. 2024	NaMATA FPTS KURA NTSA	 Explanation and discussion of contents of the pilot project Selection of bus/matatu operators which will be involved in the pilot project
17th Apr. 2024	NaMATA	Confirmation of Operation Section for the Pilot ProjectSchedule of upcoming meeting
22th Apr. 2024	NaMATA	Discussion of Bus Stop Facility Improvement for the Pilot Project
24th Apr. 2024	Kenya Police Service	Explanation and Request of Cooperation for the Pilot Project
26th Apr. 2024	KURA/NaMATA	➤ Discussion of Bus Stop Facility Improvement for the Pilot Project
6th May 2024	NaMATA	Cooperation among Bus Operator for the Pilot Project
7th May 2024	NaMATA	Discussion for the Pilot Project (Budget, Procedure in NaMATA, Fare Payment Method, Facility Improvement Plan)
8th May 2024	NaMATA	Plenary Discussion for the Pilot Project
22nd May 2024	NaMATA	Regular Meeting for the Pilot Project (Conditions for the Contract, Fare Setting etc.)
28th May 2024	NaMATA, NCCG, KURA	➤ Site Visit of the Bus Stop for the Pilot Project (Green park – Karen)

Date	Main Attendees	Items				
29th May 2024	NaMATA	Contents of Contract between Bus Operator and NaMATA for the				
12nd Jun. 2024	NaMATA	Pilot Project、Condition of Driver Labor Hours				
12110 3011. 2024	NaMATA, NTSA,	Plenary Discussion for the Pilot Project Explanation of the Pilot Project to related organization				
	KURA, Nairobi	➤ Discussion on the Implementation System for the Pilot Project				
12nd Jun. 2024	City County,					
	Kajiado County, Police, FPTS					
25 th Jul. 2024	NaMATA	➤ Plenary Discussion for the Pilot Project				
22nd Aug. 2024	NaMATA	➤ Meeting for the Material of the Pilot Project for Bus Operator and				
		FPTS				
26th – 27th Aug. 2024	NaMATA, FPTS, Bus Operator	 Discussion for the Establishment of Bus Operation Company Explanation of the Pilot Project 				
10th – 12th Sep.	NaMATA, Bus	Workshop for Bus Operator for the Pilot Project				
	Operator, NTSA,	1) Roles of NaMATA				
2024	NCCG	Pilot Project Future Bus Business				
18th Sep. 2024	Metro Trans	Photographing of the Crews for the Training Handbook				
	NaMATA 、Bus Operator	➤ Meeting for the Pilot Project with Bus Operator				
		Operation Day、Crew's Shift				
19th Sep. 2024		Vehicles Fare Setting and payment method				
		4) Bus Stop at CBD				
	NaMATA 、 Bus	➤ Meeting for the Pilot Project with Bus Operator				
27th San 2024		Submission of Crews and Vehicles Information Allocation of Supervisor and Store Manager				
27th Sep. 2024	Operator	Allocation of Supervisor and Stage Manager Operation Plan				
		Name of the Bus Stop				
30th Sep. 2024	NaMATA	Confirmation of Work for Bus Operator Meeting				
2nd Oct. 2024	NaMATA	 Implementation Schedule of the Pilot Project Meeting for the Pilot Project with Bus Operator 				
3rd Oct. 2024	NaMATA 、 Bus Operator	Roles of Supervisor and Stage Manager				
		2) Vehicle Dispatch				
		Submission of Business Report Monitoring				
7th Oct. 2024	Kajiado County	4) Monitoring Site Visit and Discussion of the Ngong Bus Park				
15th Oct. 2024	NaMATA	➤ Meeting for Pilot Project (CBD Terminal, Communication Strategy)				
		➤ Meeting for the Pilot Project with Bus Operator				
17th Oct. 2024	NaMATA 、 Bus	Postpone of the Pilot Project Location of Bus Stop at CBD				
17111 Oct. 2024	Operator	3) Submission of Business Report				
		4) Communication Strategy				
17th Oct. 2024	NaMATA	Bus Stop Facility Training Manual (Handbook)				
0011 6 1 5 1 1 1	Nairobi City	➤ Training Manual (Handbook)➤ Site Visit of Bus Stop				
30th Oct. 2024	County					
5th Nov. 2024	NaMATA	➤ Plenary Discussion for the Pilot Project (Confirmation of the				
		Progress) > Meeting for the Pilot Project with Bus Operator				
7th Nov. 2024	NaMATA 、 Bus	Status for the Selection of Vehicles and Crews				
	Operator	2) Bus Stop at CBD				
15th Nov. 2024	NaMATA	3) Issues for the Bus Stop Improvement (Bus Shelter)Contents of PR Activities for the Pilot Project				
18th Nov. 2024	NaMATA	Contents of PR Activities for the Pilot Project Contents and Budget of PR Activities for the Pilot Project				
19th Nov. 2024	NaMATA	Plenary Discussion for the Pilot Project (Confirmation of the				
20th Nov. 2024	NaMATA	Progress)				
ZUII INUV. ZUZ4		 Confirmation of PR Activities and Budget Meeting for the Pilot Project with Bus Operator 				
21st Nov. 2024	NaMATA Bus	Contents of Contract between Operator and NaMATA				
	Operator	2) Presentation of Fare Collection System in each Operator				
28th Nov. 2024	NaMATA Bus	 Meeting for the Pilot Project with Bus Operator Contents of Contract between Operator and NaMATA 				
22nd Jan. 2025	Operator NaMATA	Confirmation of the Progress of the Pilot Project				

Date	Main Attendees	Items			
28th Jan. 2025	NaMATA	➤ Confirmation of the Progress of the Pilot Project			
29th Jan. 2025	NaMATA	 Confirmation of the Preparation of Bus Shelter Construction (Work Plan including Work Schedule) 			
30th Jan. 2025	NaMATA	 Confirmation of the Preparation of Bus Shelter Construction (Vendor Relocation, Interference with related Construction) 			
3rd Feb. 2025	NaMATA	➤ Confirmation of the Progress of the Pilot Project			
4th Feb. 2025	NaMATA	➤ Confirmation of the Progress of the Pilot Project			
5th Feb. 2025	NaMATA、KURA	Discussion of Road Traffic Management during the Pilot Project			
6th Feb. 2025	NaMATA 、 Bus Operator	 Meeting for the Pilot Project with Bus Operator Contents of Contract between Operator and NaMATA 			
7th Feb. 2025	NCCG	➤ Discussions on Bus Terminal Development for Phase 2			
7th Feb. 2025	NaMATA	 Explanation for Phase 2 Confirmation of the Progress of the Pilot Project 			
11th – 12th Feb. 2025	NaMATA NTSA Traffic Police Nairobi County Kajiado County	➤ Training for Trainers for Crew Member of the Pilot Project			
13th Feb. 2025	NaMATA . Bus Operator	➤ Contract Signing Ceremony between NaMATA and Bus Operators			
13th Mar. 2025	NaMATA Bus Operator	➤ Description of Training Materials for Supervisor / Stage Manager			
25th Mar. 2025	NaMATA	Confirmation of the Progress of the Pilot Project			
27th Mar. 2025	NaMATA 、 Bus Operator	➤ Training for Supervisor / Stage Manager			
29th – 30th Mar. 2025	NaMATA 、Bus Operator NTSA 、Traffic Police	> Training for Crews			
1st Apr. 2025	NaMATA	Preliminary Confirmation for the Pilot Project Implementation			
2nd Apr. 2025	NaMATA	➤ Facility Check for the Pilot Project			
25th Apr. 2025	NaMATA	Confirmation of the Progress in Data Collection for the Pilot Project with ICT team			
3rd May 2025	NaMATA 、 Bus Operator	➤ Meeting with Crews participated in the Pilot Project			
21st May 2025	NaMATA Bus Operator	Meeting with Representatives of Bus Operators participated in the Pilot Project			

2.3 Operators also conducted internal coordination meetings independently.

The operators also held internal meetings independently.

3. TRAFFIC SURVEY

3.1 Outline of the Survey

A comprehensive set of traffic surveys was conducted to support the planning of the pilot project. Survey items and locations are shown in Table 3.1.1 and Figure 3.1.1.

Table 3.1.1 Details of Bus Survey at Ngong Road

Survey	NOS	Survey Date / Time	Remark			
a) Bus/ Matatu Terminal Survey						
a-1: Departure and Arrival Time	5	18 October 2023 (Wednesday) 5:00 a.m 9:00 p.m. (16 hours)				
a-2: Number of boarding and alighting passenger	5	18 October 2023 (Wednesday) 5:00 a.m 9:00 p.m. (16 hours)	Main bus stops			
a-3: Number of waiting passenger	5	18 October 2023 (Wednesday) 5:00 a.m 9:00 p.m. (16 hours)				
a-4: Passenger OD interview	5	18 October 2023 (Wednesday) 5:00 a.m 9:00 p.m. (16 hours)				
b) Roadside Survey						
b-1: Number of bus/matatu	5	8 December 2023 (Friday) 5:00 a.m 9:00 p.m. (16 hours)	Between main			
b-2: Passenger occupancy rate	5 18 October 2023 5:00 a.m 9:00 p		bus stops			
c) Bus/Matatu on-board Survey						
c-1: Number of passengers boarding and alighting	-	18 October 2023 (Wednesday) 5:00 a.m 9:00 p.m. (16 hours)	Each bus stop between CBD and Karen			

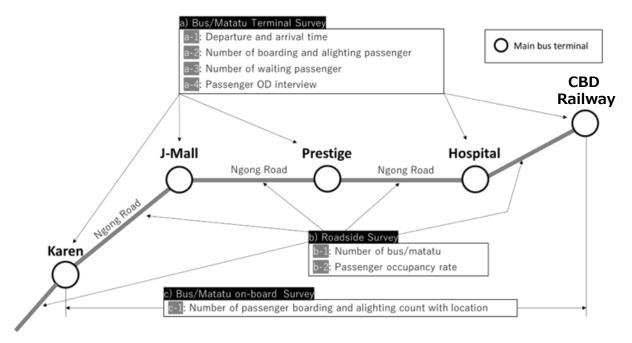


Figure 3.1.1 Location of Survey at Ngong Road

3.2 Summary of Survey Results

(1) Bus Stopping Time at Main Bus Terminals

Bus stopping time at main bus stops are shown in Figure 3.2.1. In the direction toward Ngong, buses generally stopped for 1 to 4 minutes. In contrast, stopping times in the direction toward Town (Nairobi CBD) were 5 minutes or longer at Karen and Junction Mall bus stops. Notably, buses tended to stop for longer periods during off-peak hours compared to peak hours.

Buses often dwelled at stops for extended periods to pick up passengers, which contributed to congestion at the bus stops and on adjacent road sections.

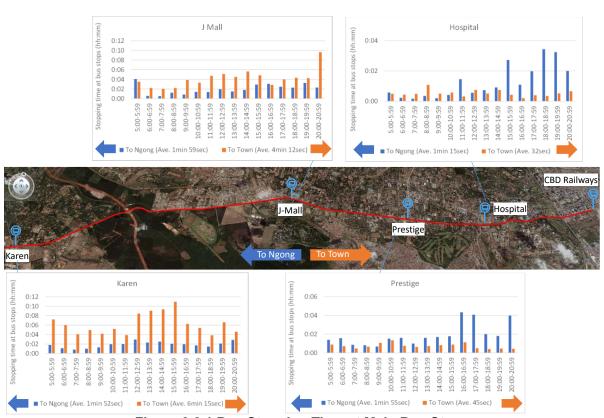


Figure 3.2.1 Bus Stopping Time at Main Bus Stops

(2) Number of Bus Stopped at Main Bus Terminals

The number of buses stopping at major bus terminals is shown in Figure 3.2.2. Several bus stops receive more than 100 buses per hour. Kenyatta National Hospital bus stop records a peak of 128 bus arrivals per hour, equivalent to one bus arriving approximately every 30 seconds.

One of the main reasons for this high frequency is the use of small-capacity vehicles, such as 14-seaters and 33-seaters, which leads to overcrowded bus stops and contributes to

traffic congestion.



Figure 3.2.2 Number of Bus Stopped at Main Bus Terminals

(3) Number of Boarding and Alighting Passenger at Main Bus Terminals

The number of boarding passengers at major bus terminals is shown in the Figure 3.2.3. During the evening peak at Karen bus stop, over 1,800 passengers boarded buses heading toward the CBD. As noted on the previous page, approximately 120 buses stop at Karen bus stop during this period—equivalent to one bus departing every 30 seconds. With 1,800 passengers boarding 120 buses, each bus carries an average of 15 passengers, or about 50% of the capacity of a 33-seater vehicle. This results in a very rushed situation, with 15 passengers boarding each bus within just 30 seconds.

Boarding activity is concentrated during peak periods—morning (commuting to work or school) and evening (returning home)—with more than 400 passengers boarding at some stops within a single peak hour.

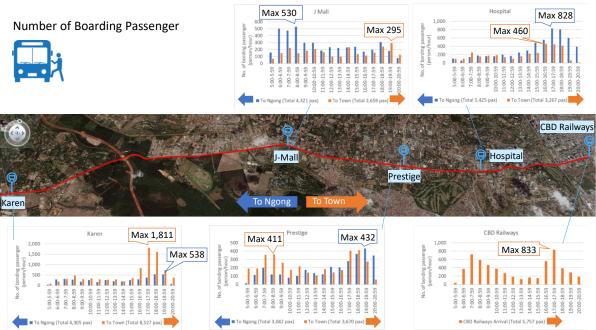


Figure 3.2.3 Number of Boarding Passengers at Main Bus Terminals

The number of alighting passengers at major bus stops is shown in Figure 3.2.4. During the morning peak, over 2,700 passengers alighted at CBD Railways bus stop from buses traveling in the direction of Ngong.

As shown in Figure 3.2.2, approximately 100 buses stopped at CBD Railways bus stop during this period. This means that 2,700 passengers were transported by 100 buses, averaging 27 passengers per bus—around 80% of the capacity of a 33-seater vehicle. The situation was very rushed, with more than one bus departing every minute and most buses operating near full capacity.



Figure 3.2.4 Number of Alighting Passengers at Main Bus Terminals

The daily number of boarding and alighting passengers at each bus stops are shown in Figure 3.2.5. Four bus stops—Kenyatta National Hospital, Prestige, Junction Mall (including Corner/Meteorological Department), and Karen—each serve more than 10,000 passengers per day and are considered the major bus stops along Ngong Road.

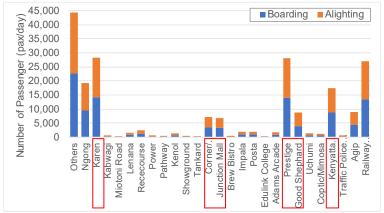


Figure 3.2.5 Daily Number of Passengers at Bus Stops

(4) Origin and Destination of Passengers

The Origin and Destination (OD) of passengers are illustrated on Figure 3.2.6, while the OD table is provided in Table 3.2.1. The number of potential passengers who may board and alight buses along Ngong Road—excluding terminals—has been estimated based on traffic survey results, and accounts for approximately 42% of all bus/matatu passengers along Ngong Road.

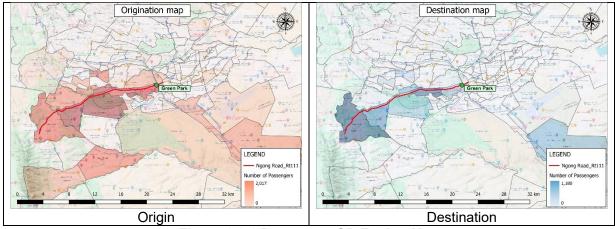
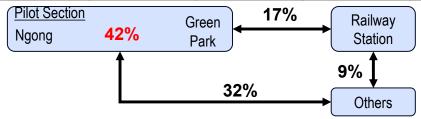


Figure 3.2.6 Passenger OD Zoning Map

Table 3.2.1 Passenger OD Table

Unit: Passenger / day

		Destination			
		Railway Sta.	Pilot Section	Others	Total
Origin	Railway Sta.	- 9,352 (9%)		4,151 (4%)	13,503 (13%)
	Pilot Section	8,370 (8%)	44,654 (42%)	17,552 (16%)	70,576 (66%)
	Others	5,146 (5%)	17,461 (16%)	-	22,607 (21%)
	Total	13,516 (13%)	71,467 (67%)	21,703 (20%)	106,686 (100%)



(5) Number of Waiting Passengers at Main Bus Terminals

The number of waiting passengers at major bus stops is shown in Figure 3.2.7. At the Karen, Prestige, and Kenyatta National Hospital bus stops, nearly 100 people were observed waiting in both directions during the evening peak.

A large number of passengers are seen waiting during both the morning and evening peak hours, particularly at mid-route bus stops along Ngong Road. This is largely because buses depart from terminals already full, leaving limited boarding opportunities along the route.

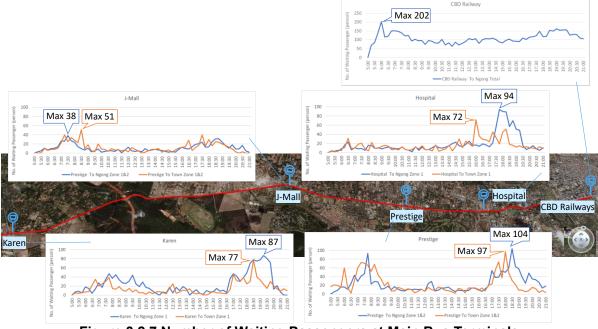


Figure 3.2.7 Number of Waiting Passengers at Main Bus Terminals

(6) Number of Bus/Matatu

The number of buses and matatus operating on Ngong Road is shown in Figure 3.2.8. The number of vehicles generally increases as the road approaches CBD. However, there is a noticeable dip in the number of buses between Prestige and Kenyatta National Hospital, likely due to some vehicles detouring to avoid congestion.

Ngong Road is served by various routes—such as CBD–Karen, Hospital–Ngumo, and Kawangware–Kibera—so not all buses traveling on this corridor are heading to Ngong, Karen, or the CBD. Additionally, some 14-seat matatus function as feeder services, connecting passengers from main bus stops to nearby areas.

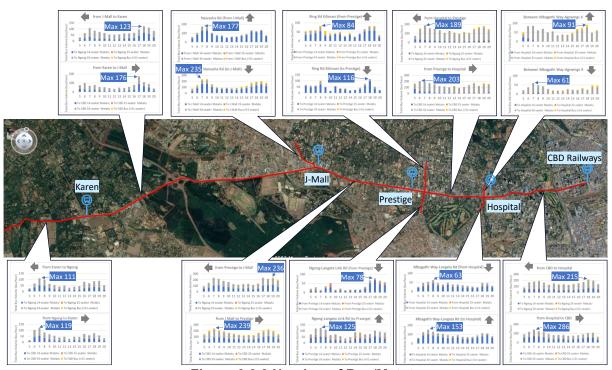


Figure 3.2.8 Number of Bus/Matatu



Figure 3.2.9 Detour Route along Ngong Road

(7) Travel Time

Figure 3.2.10 illustrates the travel time between the CBD and Karen. Travel time from the CBD to Karen remained under 50 minutes even during peak hours. Similarly, travel time from Karen to the CBD also stayed below 50 minutes, except during the off-peak period between 11:00 AM and 3:00 PM. The delay during this period was due to prolonged stops at bus stops while picking up passengers. Overall, travel time between the CBD and Karen can be considered to be approximately 50 minutes.

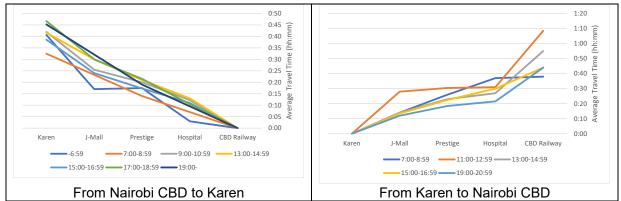
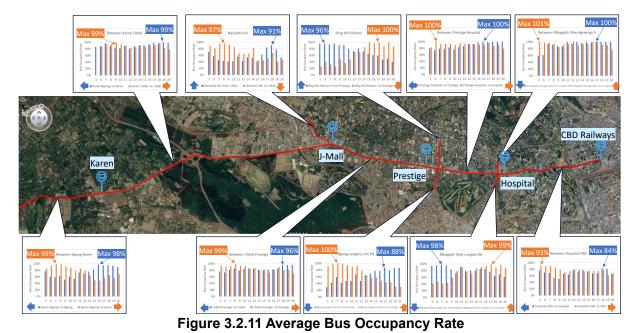


Figure 3.2.10 Travel Time

(8) Average Bus Occupancy Rate

The average bus occupancy rate is shown in Figure 3.2.11. Buses operating along Ngong Road had occupancy rates exceeding 80% in both directions between Karen and CBD Railways station. Additionally, buses traveling between Karen and Ngong exhibited high occupancy rates toward the CBD in the morning and toward Ngong in the evening.



ALMEC Corporation, Nippon Koei Co., Ltd, Michinori Holdings, Inc., KOEI Africa CO., LTD.

(9) Demand per Capacity

Bus passenger demand and bus supply in the morning peak hour, off-peak hour and evening peak hour are shown in Figure 3.2.12, Figure 3.2.13 and Figure 3.2.14.

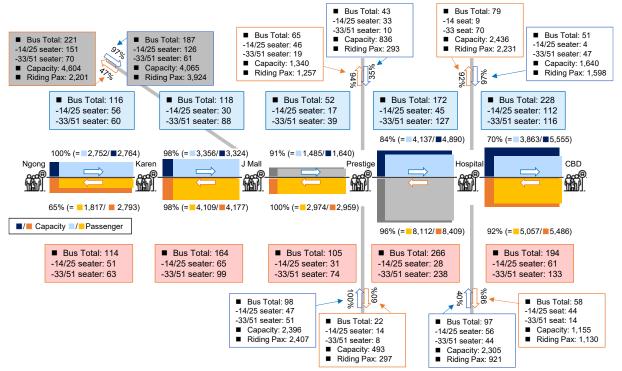


Figure 3.2.12 Summary of Passenger Demand and Bus Supply in the Morning Peak Hour (7:00AM)

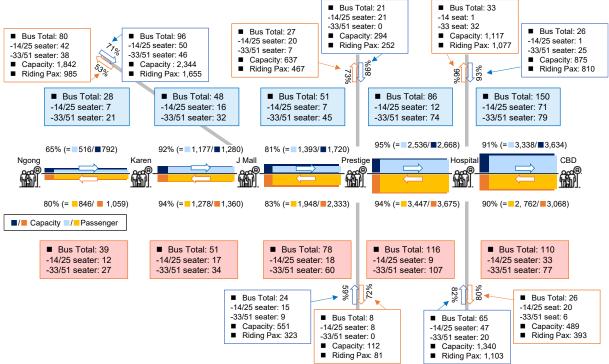


Figure 3.2.13 Summary of Passenger Demand and Bus Supply in the Off-Peak Hour (2:00PM)

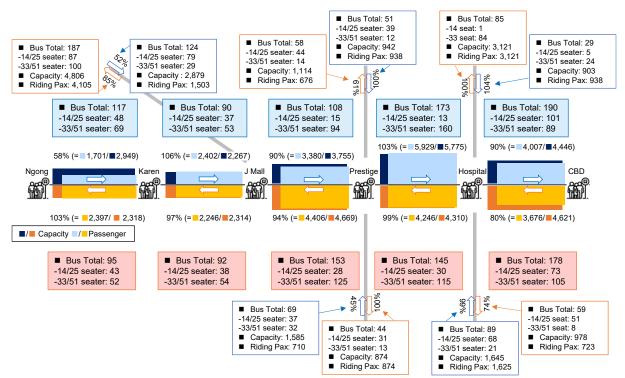


Figure 3.2.14 Summary of Passenger Demand and Bus Supply in the Evening Peak Hour (5:00PM)

4. PLANNING OF THE PILT PROJECT

4.1 Current Demand and Supply

The number of passengers and operating vehicles during the morning peak, off-peak, and evening peak hours is summarized in Table 4.1.1 and Table 4.1.2. It is recognized that managing all vehicles along the corridor strictly by timetable is not realistic due to both high passenger demand and an abundant vehicle supply.

Table 4.1.1 Prerequisites Between Nairobi CBD and Kenyatta National Hospital

Item		7AM	2PM	5PM
No. of Users (passenger/hour)	5,057	3,338	4,007	
Number of Operated Buses	14-seater	61	71	101
(vehicle/hour)	33-seater	133	79	89
Occupancy Rate	97.5%	92.7%	92.1%	

Table 4.1.2 Prerequisites Between Karen and Ngong

Item		7AM	2PM	5PM
No. of Users (passenger/hour)	2,752	846	2,397	
Number of Operated Buses (vehicle/hour)	14-seater 33-seater	56 60	12 27	43 52
Occupancy Rate	99.6%	79.9%	103.4%	

4.2 Alternative Plans

Five alternative plans were prepared and compared as shown Table 4.2.1, Table 4.2.2 and Table 4.2.3. Alternative 2-2 of Introduction of bus management on Route No. 111 with manageable number of vehicles was selected, since it is in line with the purpose of the Pilot Project.

Table 4.2.1 Alternative Ideas of Operation Schedule

			Conditi	on
No.	Objective No. of Vehicle		Occupancy Rate	Target Demand (No. of Users)
Alt 0	Operation by high-capacity buses through the Corridor	70-seater	100% With standing passengers	Highest section on the corridor (CBD-Hospital)
Alt 1-1	Operation by current types of vehicles with desirable occupancy rate through the corridor	14-seater 33-seater	80% (Desirable Rate)	Highest section on the corridor (CBD-Hospital)
Alt 1-2	Operation by only 33-seater with desirable occupancy rate through the corridor	33-seater	80% (Desirable Rate)	Highest section on the corridor (CBD-Hospital)
Alt 2-1	Introduction of bus management for all current	14-seater 33-seater	Current Rate	Route No. 111 (Karen-Ngong)

	vehicles on Route No. 111			
Alt 2-2	Introduction of bus management on Route No. 111 with manageable No. of vehicles	14-seater 33-seater	Current Rate	Route No. 111 (Karen-Ngong)

Table 4.2.2 Necessary Number of Additional Vehicles and Operation Frequency

No.	Ad	ditional Nur	mber of Buse	es	•	Frequency	_			
NO.	Type	7AM	2PM	5PM	7AM	2PM	5PM			
Alt 0	70-seater	73	48	58	51.4 sec	1.3 min	1.0 min			
Alt 1-1	14-seater	14	10	14	15.3 sec	20.8 sec	16.5 sec			
7 (10 1-1	33-seater	27	13	14	10.0 300	20.0 300	10.0 300			
Alt 1-2	14-seater	- 61	- 71	- 101	18.8 sec	28.3 sec	23.7 sec			
7111 1 2	33-seater	59	48	63	10.0 000	20.0 000	20.7 000			
Alt 2-1	14-seater		No additional buses							
7	33-seater	<u></u>	_	-	lonal bacca					
	14-seater		No additional buses							
Alt 2-2	33-seater			. to additi	Char bacco					
	33-seater	36	18	36	5 min	10 min	5 min			

Table 4.2.3 Comparison of Alternatives							
No.	Outline	Pross	Cons				
Alt 1-1	a. Departure time at the terminals of all bus/matatu (15 sec interval with 230 veh.) are scheduled. b. Bus berths for all routes are provided. c. Bus/matatu operation by trained crews.	 Chaotic operation at bus stops will be improved. All operator has a chance to involve in pilot project. 	 It will not make clear difference with current operation. 100 – 200 enforcers shall be assigned along the corridor. 				
Alt 1-2	a.Departure time at the terminals of <u>over 33-seaters</u> <u>bus (20 sec. interval with</u> <u>200 veh.)</u> are scheduled. b.Ditto c.Ditto	 Passengers will be easy to understand operation of 33-seater on the corridor. 	 It will not make clear difference with current operation. 50 - 100 enforcers shall be assigned along the corridor. 				
Alt 2-1	a.Departure time at terminals of over 33-seaters bus on Route No.111 (1 min. interval with 60 veh.) are scheduled. b.Bus berth for the target buses/all routes or all routes are provided. c. Ditto	 Passengers will be easy to understand operation of 33-seater bus on Route No. 111. Operators may understand the operation management. 	 14-seater and 33-seater make different operation on the route. Around 10 - 30 enforcers shall be assigned along the corridor. 				
Alt 2-2	a. Operation schedule is prepared for manageable number of 33-seaters (5 min. interval with 36 veh.). b. Ditto c. Ditto	 33 seaters matatu will be operated by designated headway. (No need to wait until to be full) Operators may understand the operation management. 	 It will make confusions for passengers. 10 – 30 enforcers shall be assigned along the corridor. 				

5. COMPONENTS

5.1 Component List

Components of the pilot project are listed in Table 5.1.1.

Table 5.1.1 Components of the Pilot Project

Item	Description	Taken by
a. Scheduled	Buses are operated based on time schedule to make	NaMATA/
bus operation	reliable operation for passengers.	Operators
b. Facility	Bus stop facilities and road facilities to access to bus	NaMATA/ KURA/
improvement	stops are improved to make bus service comfortable	County
	for passengers.	
c. Fare setting	Appropriate fares which is <u>affordable</u> for passengers	NaMATA/
and application	and <u>profitable</u> for operators are set and applied.	Operators
d. Information	Bus operation information is provided for passengers	NaMATA/
provision	to improve accessibility to bus service.	Operators
e. Crew training	Driver training and conductor training including safety	NaMATA/ NTSA /
	and hospitality is provided to make bus service	Police/ County/
	<u>reliable, safety and comfortable</u> .	Operators
f. Operation	Bus operation is managed at bus terminuses and bus	NaMATA/
management	stops to ensure <u>reliable</u> bus operation.	Operators
g. Gender	Enlightenment activities for against harassment and	NaMATA/ NGEC/
mainstreaming	consideration of vulnerable passengers are	Operator /Police
	implemented.	
h. PR	PR activities to make public transport in NMA as	NaMATA/ County
	reliable, comfortable, affordable, accessible and	
	safety is implemented.	
i. Monitoring	Effectiveness of bus service improvements are	NaMATA/
and evaluation	evaluated.	Operators

5.2 Planning of Components

5.2.1 Scheduled Bus Operation

The outline of the operation plan is presented in Table 5.2.1. The operation schedule was divided into peak and off-peak hours, with buses operating every 5 minutes during peak hours and every 10 minutes during off-peak hours. A total of 40 vehicles were assigned on weekdays, and 20 vehicles on weekends.

Table 5.2.1 Outline of Scheduled Operation

Item	Contents
Time Definition	Peak hour: AM4:00 – AM9:59, PM4:00 – PM9:55
	Off-peak hour: AM10:00 – PM3:59
Timetable	Peak hour: every 5 minutes (with 40 vehicles)
(Frequency)	Off-peak hour: every 10 minutes (with 20 vehicles)
Travel Time	75 minutes / one way
Turnaround Time	In order to absorb delays and to ensure that the bus/matatu departs on
	time as much as possible at the origin, and to ensure safe operation of
	the crew, a turnaround time of around 15 minutes will be set.
Number of Vehicles	Weekday: 40 vehicles
	Weekend: 20 vehicles

The required number of vehicles for the pilot project is estimated as shown below.

Timetables for both weekdays and weekends were prepared to support scheduled operations, as shown in Table 5.2.2. Shift diagrams for both crew and vehicles were also developed to maintain adherence to the timetable, as presented in Table 5.2.3 and Table 5.2.4.

Table 5.2.2 Timetables for the Pilot Project

Line	e 11	1:							CBI	D an	d N	gong B	us F	Park					
						We	ekc	lay					5	Satu	rday	and	d Su	nday	
4 am	00	05	10	15	20	25	30	35	40	45	50	55							4 am
5 am	00	05	10	15	20	25	30	35	40	45	50	55							5 am
6 am	00	05	10	15	20	25	30	35	40	45	50	55	00	20	40				6 am
7 am	00	05	10	15	20	25	30	35	40	45	50	55	00	20	40				7 am
8 am	00	05	10	15	20	25	30	35	40	45	50	55	00	20	40				8 am
9 am	00	05	10	15	20	25	30	35	40	45	50	55	00	10	20	30	40	50	9 am
10 am	00	10	20	30	40	50							00	10	20	30	40	50	10 am
11 am	00	10	20	30	40	50							00	10	20	30	40	50	11 am
12 pm	00	10	20	30	40	50							00	10	20	35	55		12 pm
1 pm	00	10	20	30	40	50							10	20	30	40	50		1 pm
2 pm	00	10	20	30	40	50							00	10	20	30	40	50	2 pm
3 pm	00	10	20	30	40	50							00	10	20	30	45		3 pm
4 pm	00	05	10	15	20	25	30	35	40	45	50	55	05	20	30	40	50		4 pm
5 pm	00	05	10	15	20	25	30	35	40	45	50	55	00	10	20	30	40	50	5 pm
6 pm	00	05	10	15	20	25	30	35	40	45	50	55	00	10	20	30	40	50	6 pm
7 pm	00	05	10	15	20	25	30	35	40	45	50	55	00	10	20	40			7 pm
8 pm	00	05	10	15	20	25	30	35	40	45	50	55	00						8 pm
9 pm	00	05	10	15	20	25	30	35	40	45	50	55							9 pm

Table 5.2.3 Shift Diagram on Weekday at CBD Base

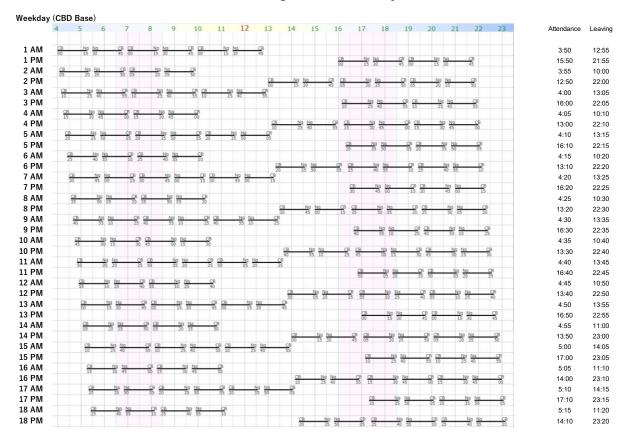
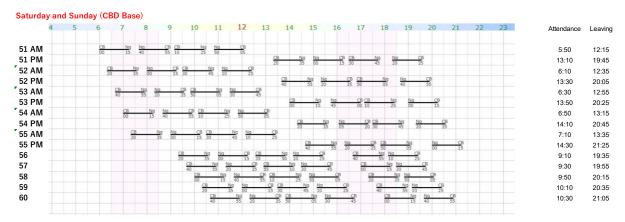


Table 5.2.4 Shift Diagram on Weekend at CBD Base



Key points of the operation plan are outlined in Table 5.2.5.

Table 5.2.5 Key Points of the Operation Plan

- a) The one-way trip time was set at 75 minutes based on traffic survey results, as illustrated in Figure 3.2.10.
- b) To account for potential traffic congestion depending on the time of day, and to ensure that crew members receive adequate rest and are not subjected to long working hours, a 15minute turnaround time was allocated at the terminus.
- c) Regarding departure times, it was agreed during consultations with the operators that there is demand starting from around 4:00 AM, with operations continuing until the final departure at 10:00 PM.
- d) For service frequency, and to ensure operability within the constraints of stage manager-led roll calls and overall operational management, a 5-minute headway was established during morning and evening peak hours. During off-peak periods, when demand is lower, a 10-minute headway was adopted.
- e) Based on these parameters, driver duty schedules were developed, specifying clock-in/out times and departure times from the origin point. Consequently, each vehicle was assigned five round trips per day. However, to avoid long working hours, each crew member was assigned two or three round trips per day under a two-shift system.
- f) Based on the shift plan, operation schedule cards (also referred to as schedules or "staffs," as shown in Table 6.1.1) were prepared to enable each driver to operate independently, even in the absence of a supervisor.
- g) Monthly shift rosters (duty allocation tables) were then prepared in accordance with the duty schedules, clearly indicating the start and end times of each driver's working hours.
- h) In preparing the shifts, standby vehicles and reserve crew members were designated to respond to contingencies such as accidents or staff absences due to illness.
- i) As a result, the pilot project deploys a total of 36 vehicles and 72 crew members (drivers and conductors, respectively) on weekdays, in addition to 4 standby vehicles and 8 reserve crew members.
- j) On weekends (Saturdays and Sundays) and public holidays, operations are planned from 6:00 AM to 8:00 PM due to lower demand, with service intervals set between 10 and 20 minutes.

5.2.2 Facility Improvement

Facility improvements for the pilot project include three key components: establishment of terminals, development of bus stop facilities, and enhancement of road infrastructure.

On Route 111, two bus terminals were designated—one in Nairobi CBD and the other in Ngong. Initially, Green Park was planned to serve as the terminal in Nairobi CBD. However, operators opposed its use due to concerns about low passenger volumes at that location. As a result, Pioneer was ultimately selected as the terminal in Nairobi CBD for the pilot

project. Pavement markings were planned at both terminals to clearly indicate designated boarding and alighting berths for buses.

In addition, eight bus shelters were planned for installation along Ngong Road to provide passengers with a more comfortable waiting environment and access to bus operation information.

To enhance pedestrian safety, zebra crossings near major bus stops were planned to improve visibility and facilitate safer crossings.

Table 5.2.6 Contents of Facility Improvement

Item	Contents
Setting Terminals	Pioneer in Nairobi CBD (parking space in front of Quick Mart)
	· Ngong Terminal
Bus stop facility	Installation of bus shelter at:
	· Kenyatta National Hospital (KNH) bus stop
	· Prestige bus stop
	Junction-mall bus stop
	· Karen bus stop
Road facility	Renew of pavement marking of zebra crossing at:
	· Kenyatta National Hospital (KNH) bus stop
	· Prestige bus stop
	· Junction-mall bus stop
	· Karen bus stop

5.2.3 Fare Setting and Application

Bus fares in Nairobi, including those on Route 111, vary depending on the day, time, and weather conditions, making them unclear for passengers. The current bus fares on Route 111, as charged by various operators, are presented in **Table 5.2.7**

8:00 9:00 10:00 11:00 20:00 21:00 5:00 14:00 15:30 17:00 Average Highest Lowest From То Operator 7:59 8:59 9.59 10:59 13:59 15:29 16:59 19:59 20:59 23:59 K-Trans Super Metro Metro Trans CBD Ngong Enabled CBD NTVRS Nangkis Ngong K-Trans Ngong CBD Super Metro Enabled K-Trans CBD CBD Karen Super Metro Enabled Karen Karen CBD K-Trans K-Trans Super Metro CBD CBD Super Metro Lenana Metro Trans an Lenana Enabled K-Trans Ngong Ngong Karen Super Metro Enabled Karen K-Trans Ngong Ngong Super Metro Enabled Lenana

Table 5.2.7 Current Fare obtained from Survey

The standard fare rate for Route 111 was estimated based on survey results and the average travel distance, as shown below.

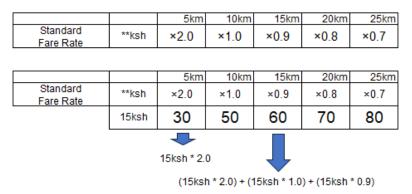


Figure 5.2.1 Estimated Standard Fare Rate on Route 111

However, as a result of the trial calculation, it was found that some sections such as between the CBD and Junction Mall were slightly cheaper than the existing fares, so a surcharge of 20ksh was added to the calculated fares for these sections.

Therefore, a fixed fare system—applicable throughout the day and without the need for negotiation—was introduced for the pilot project. The fare was determined using a combination of a flat surcharge and a distance-based rate. The proposed fare structure is illustrated in Figure 5.2.2.

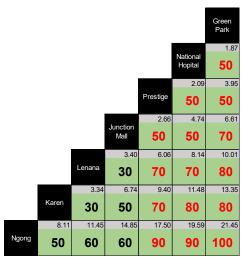


Figure 5.2.2 Fare Structure on Route 111 for the Pilot Project

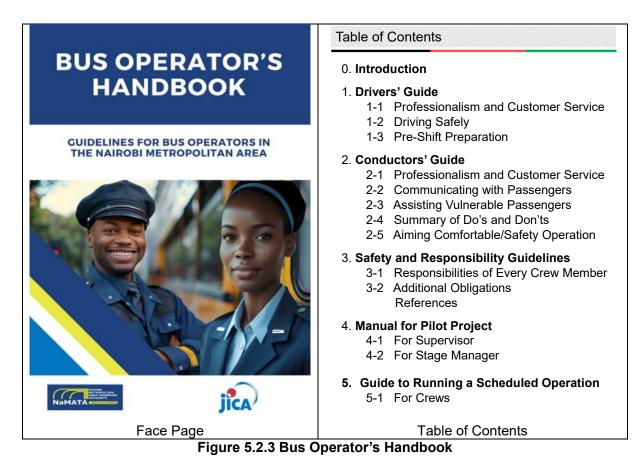
5.2.4 Information Provision

To keep users informed, the provision of operational information was planned as part of the pilot project. The following information is scheduled to be displayed at bus stops, terminals, and inside vehicles.

- Operation hour
- · Operation frequency
- · Bus routes
- Fare information

5.2.5 Crew Training

A bus crew training manual titled "Bus Operator's Handbook" was developed. The main purpose of the manual is to enhance professionalism among drivers, conductors, and stage managers from bus operators, with a focus on improving the quality, safety, and efficiency of public bus transport services.



5.2.6 Operation Management

Scheduled operations were planned to ensure consistent service intervals. Stage managers were assigned at the terminals to oversee the management of vehicles and crews.

5.2.7 Gender Mainstreaming

The following measures for gender and vulnerable people mainstreaming was proposed to enhance inclusiveness in the Pilot Project.

Table 5.2.8 Ideas on Considering Gender/Vulnerable Groups in Pilot Project

	Table 5.2.0	deas on Considering Gender/Vulnerable Groups in Pilot Project
	Items	Measures
1)	Fare	Introduce a uniform fare system to prevent fare differences based on gender or disability status.
2)	Improvement of Facility (Bus stop)	 Install shelters at bus stops to ensure that women carrying children or luggage, as well as persons with disabilities, can wait comfortably regardless of weather conditions. Equip shelters with lighting to allow women to wait safely at bus stops after sunset. Ensure sufficient space to accommodate wheelchair users. If there is a height difference between the sidewalk and the bus stop, consider installing ramps to provide easy access for wheelchair users and other transport-vulnerable individuals. Put sticker for priority boarding. Put sticker against harassment/violence. Although setting/operating of surveillance cameras could be considered in longer term, it is not necessary to be included in the pilot project.

3)	Information	 Display operational hours, timetables, routes, and fares at bus stops and on social media. Conduct verbal announcements by crew members at bus stops and inside buses.
4)	Bus operation & inside bus	 Implement orderly queuing for boarding at bus stops. Designate seats near the doors as priority seating. Introduce scheduled operations during off-peak hours to make buses more accessible for women, the elderly, and others traveling for shopping or medical visits. Put sticker against harassment/violence (including reporting).
5)	Preparation of manuals and provision of trainings for crew	 Safe driving Customer services/hospitality (including encouraging conductors to clearly announce necessary information to passengers). Provide boarding and alighting assistance for transport-vulnerable individuals, including the elderly and children. Implement communication methods, such as written communication, to assist transport-vulnerable passengers. Conduct anti-harassment training, including appropriate response measures when witnessing harassment.

5.2.8 Public Relations

The contents of the public relations activities, categorized by target groups, are outlined in Table 5.2.9.

Table 5.2.9 Contents and Target of the Public Relation

Target	Contents/Message	Material
Citizen	· Disseminate desirable public transport services	Flag-off event,
	 Introduce new bus services in the pilot project 	Billboard, Media, SNS
Bus Users	 Inform contents of new bus services in the pilot project (sage and hospital service by trained crews, scheduled operation, common fare system) 	Bus shelter, Flyer, Poster, SNS
Bus Crews	Make them proud to provide improved bus services	Uniform/ Feedback from users
Regulators	 Make them proud to serve as a regulator to enhancing bus services 	Uniform/ Feedback from users

5.2.9 Monitoring and Evaluation

The effectiveness of the pilot project was evaluated using the following indicators.

Table 5.2.10 List of Indicators

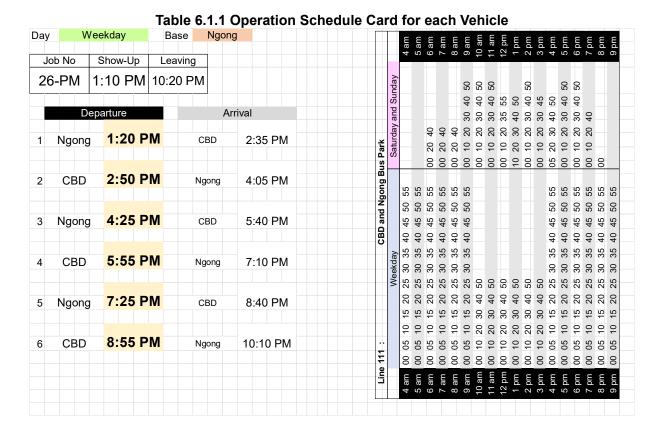
Category	Indicators	Method				
1) Operation	Operational punctuality (Reliability)	Arrival and departure time record by Stage Managers				
	Crew behavior	Audit by Supervisors				
	(Comfortability, Safety)					
2) Crew	Skill improvement	Crew interview				
Perception	(Comfortable, Safety)					
	Work environment	Crew interview				
	(Safety)					
	Reputation / Proud	Crew interview				
	(Reliability)					
3) Passenger	Comfortability	Passenger interview				
Satisfaction		(Facility cleanliness, Vehicle cleanliness, Conductor behavior)				
	Reliability	Passenger interview				
		(Information and Punctuality)				
	Safety and Security	Passenger interview				
		(Driving behavior and Security inside vehicle)				

6. IMPLEMENTATION

6.1 Scheduled bus operation

Operation schedule cards for each vehicle were distributed to the crews to guide them in following the planned schedule, as shown in Table 6.1.1.

Although the intention was to operate vehicles strictly according to the schedule, this approach did not function as planned. Crews often failed to start their shifts on time, and trip durations were longer than expected during operations. As a result, stage managers implemented a first-in, first-out (FIFO) system, which proved effective in maintaining regular service intervals.



6.2 Facility Improvement

a) Bus terminals

Location maps of the terminals used in the pilot project are shown in Figure 6.2.1 while photos of the terminals are shown in Figure 6.2.2.



Figure 6.2.1 Location Map of the Terminal



Figure 6.2.2 Photos of the Terminal

b) Bus stops

Bus shelters were installed at the bus stops listed in Table 6.2.1. Design drawings are presented in Figure 6.2.3 and photos of the installed shelters are shown in Figure 6.2.4.

Table 6.2.1 Location of Bus Shelters

Name of Bus Stop	Outbound	Inbound
CBD	-	-
Kenyatta National Hospital (KNH)	○ (Police HQs)	○ (KNH and Library)
Prestige	0	0
Junction Mall	X	0
Karen	○ (Reform Existing	0
	Shelter)	
Ngong	-	○ (Reform Existing
		Shelter)

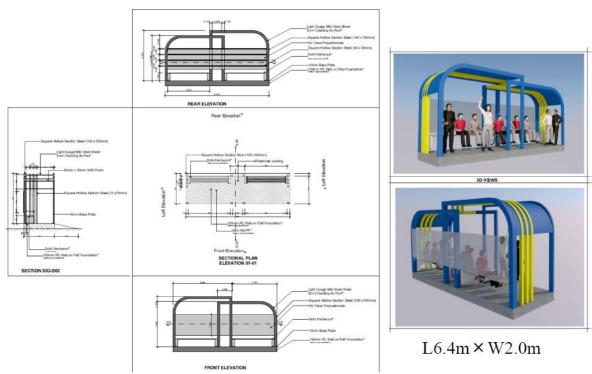


Figure 6.2.3 Design of the Bus Shelter



Figure 6.2.4 Photos of the Bus Shelter

c) Road Facility

Pavement remarking of zebra crossings was carried out near the bus stops, as shown below.

Table 6.2.2 Location of Repainting of Zebra Crossing

Name of Bus Stop	Zebra Crossing	
Kenyatta National Hospital (KNH)	○ (both at KNH and Library)	
Prestige	0	
Junction Mall	0	
Karen	0	



Figure 6.2.5 Photo of Zebra Crossing at Library Bus Stop

6.3 Fare Setting and Application

Fixed fare which shown in Figure 5.2.2 was applied during the pilot project. However, passengers were unwilling to pay the fare especially during off-peak hours, as it was higher than the existing fare. As a result, conductors were compelled to revert to the existing fare amount during off-peak periods.

6.4 Information Provision

Information materials were prepared as outlined in Table 6.4.1

Table 6.4.1 List of Information Provision

Media	Contents	Number
Sticker on bus body	Project name by Sticker	40 vehicles
Posters in vehicle	· Fare chart and Bus schedule	40 vehicles
	· Priority seat	
	Against harassment	
Billboard	· Along Ngong Road	4 sites
Information board at Bus Stops	About the project	4 bus stops
Standing banner at Bus Terminals	· Fare chart	2 bus terminals
Flyer	Operation schedule	50,000 sets
SNS	· Bus route	N/A



Figure 6.4.1 Design of Information Materials

6.5 Crew Training

A training-of-trainers session was held on March 13, 2025, followed by crew training conducted on March 29–30, prior to the implementation of the Pilot Project. The sessions were facilitated by local trainers from NTSA and NaMATA, using the Bus Operator's Handbook as the primary training material. The contents of the training are outlined in Table 6.5.1.

Table 6.5.1 Training Program

Program	Day	Taken by	No. of Participant	Contents
Training for Trainers (NaMATA, NTSA, Traffic Police)	1	JET	39	 Introduction of the training program Verification of training content (by relevant agencies) Implementation of mock training
Training for Supervisors and Stage Managers	1	JET	20	 Tasks to be performed by drivers and conductors Methods of operational management How to fill out the documents required for operational management
Training for Crew Members (Drivers and Conductors)	2	Trainer	129	 Safe driving education Customer service and hospitality Responsibilities of crew members



Figure 6.5.1 Photos of the Trainings

6.6 Operation Management

Stage managers were assigned to both terminals to oversee and control vehicle operations. Although it was originally planned to operate the vehicles according to the shift tables shown in Table 5.2.3, Table 5.2.4 and Table 6.1.1, this approach proved unfeasible. However, stage managers implemented a first-in, first-out (FIFO) operation system, which allowed them to effectively manage the vehicles and maintain regular service intervals.

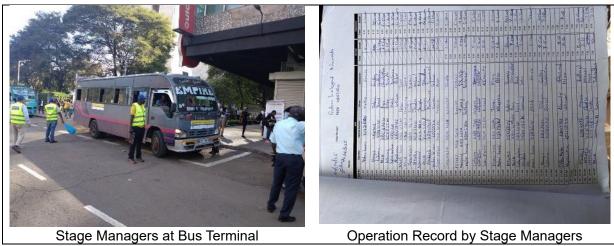


Figure 6.6.1 Photos of Operation Management by Stage Managers

6.7 Gender Mainstreaming

The initiatives outlined in Table 5.2.8 were implemented in the pilot project. Figure 6.7.1 presents the harassment awareness poster and the Braille content menu designed specifically for visually impaired passengers as part of the Pilot Project.





Figure 6.7.1 Poster and Content Menu for Pilot Project

6.8 Public Relations

Public relations activities for the Pilot Project included a flag-off event held on April 13, 2025, billboards installed along Ngong Road, posters displayed at bus stops, distribution of flyers,

Flab-off event

Flab-off event

Flab-off event

Representation

All horizontal price of the second to the second t

and outreach through social media platforms.

Figure 6.8.1 Photos of Operation Management by Stage Managers

SNS

6.9 Monitoring and Evaluation

Sticker on bus body

(1) Operation

Bus departure and arrival time at the two terminus were recorded by stage managers, while fare revenue was documented by enumerators assigned by NaMATA. Additionally, both on-board and on-street audits were conducted by NaMATA staff to monitor and evaluate the pilot operations.

d) Number of Vehicles Assigned and Departing

The number of trips operated was mostly consistent with the plan on weekdays and exceeded the planned level on weekends and holidays. Although the planned number of trips on weekends was half that of weekdays, the actual number of trips on weekends was nearly the same as on weekdays. However, the number of vehicles departing from the terminus in the early morning and late evening was lower than planned (12 during peak hours and 6 during off-peak hours on weekdays).

To provide convenient services for users and ensure profitability for operators, the operation schedule—including vehicle assignments—should be adjusted based on actual

demand data.

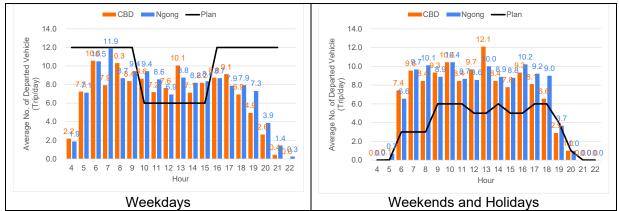


Figure 6.9.1 Average Number of Departing Vehicles by Hour

e) Travel Time

Travel time from the CBD to Ngong increases as the day progresses, while travel time from Ngong to the CBD gradually becomes longer but begins to decrease after 3:00 PM. Although the planned travel time per trip was 75 minutes, actual travel times exceeded this duration in the afternoon. This data is valuable for informing future operation planning and schedule adjustments.

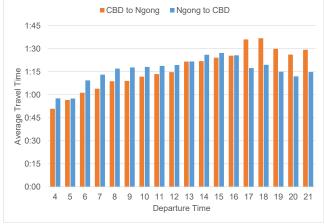


Figure 6.9.2 Average Travel Time

f) Fare Revenue

Fare revenue varied by hour and closely aligned with passenger demand. Revenue was highest during the morning peak hours from Ngong to the CBD and during the evening peak hours from the CBD to Ngong. The daily average fare revenue on weekdays was higher than that on weekends. This data can be utilized for operational planning, including fare setting and profit estimation.

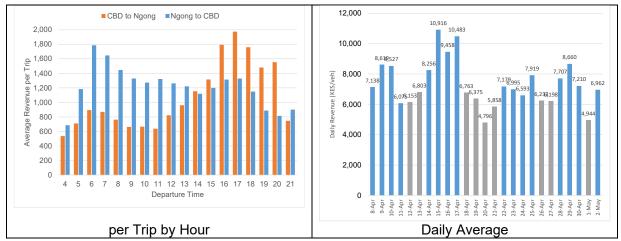


Figure 6.9.3 Average Fare Revenue

g) On-board Audit

On-board audits were conducted randomly by NaMATA staff, with a total of 322 audits completed. Auditors rated performance using three grades—Good, Average, and Bad—which were assigned point values of 5, 2.5, and 0, respectively.

Overall, the ratings were generally high; however, some items received comparatively lower scores. These included conductor hospitality (such as the use of courteous language toward passengers), the absence of posted contact phone numbers inside vehicles, and instances where buses departed before passengers were fully seated.

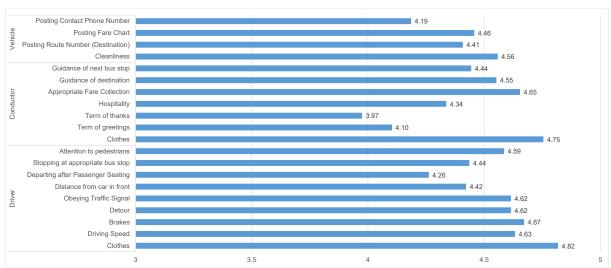


Figure 6.9.4 On-board Audit Result

h) On-street Audit

On-board audits were conducted randomly by NaMATA staff, with a total of 523 audits completed. Auditors used a three-grade rating system—Good, Average, and Bad—corresponding to point values of 5, 2.5, and 0, respectively.

Overall, the audit results were positive; however, certain items received lower scores, particularly in areas such as crew hospitality and door closing practices.

Both on-board and on-street audits indicate that there is room for improvement in enhancing hospitality and ensuring passenger safety.

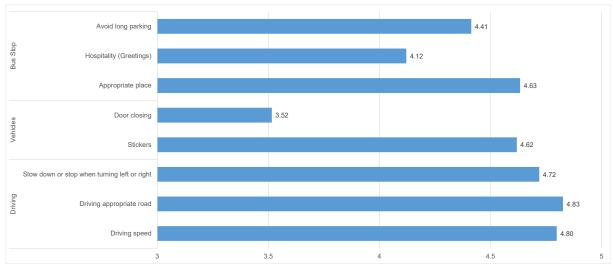
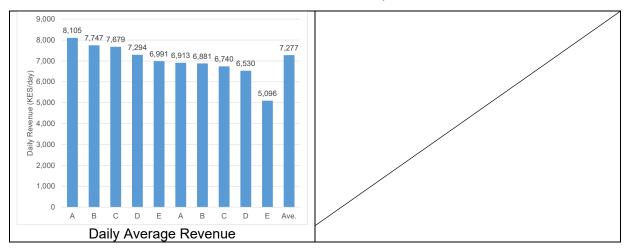


Figure 6.9.5 On-street Audit Result

i) Comparison by Operators

Differences in fare revenue and audit results were observed among operators, highlighting the need for standardized service levels across all operations.



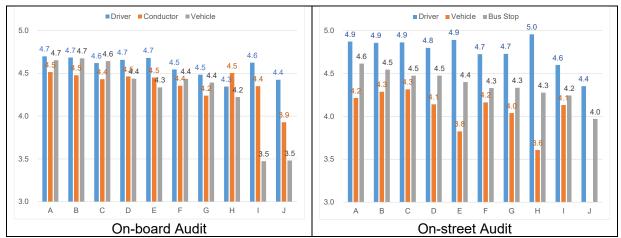


Figure 6.9.6 Comparison by Operators

j) Incidents

Operational incidents were reported by enumerators during the 30-day pilot project period, with a total of 138 incidents recorded. These incidents resulted in service suspensions, averaging 4.6 cases per day and affecting approximately 10% of the vehicles in operation. Vehicle breakdowns accounted for 66% of the incidents, while 24% were due to arrests.

These disruptions had a significant impact on fare revenue for operators. Regular vehicle inspections by operators are recommended, as they could help reduce the frequency of such incidents and directly contribute to more stable and consistent fare income.

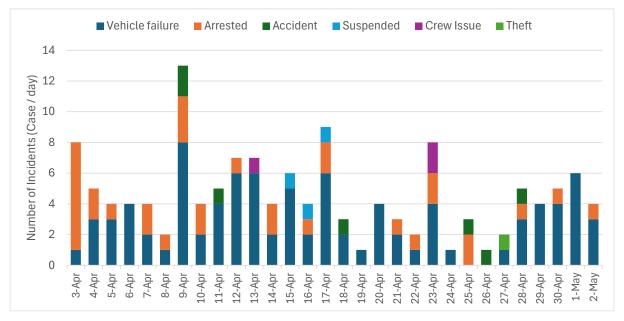


Figure 6.9.7 Number of Incidents by Day

(2) Staff Perception

A wrap-up meeting with drivers, conductors and stage managers who participated to the pilot project was held on May 3, 2025 to obtain feedback from them. A questionnaire survey

also was conducted during the meeting covering three categories: professional skills, working environment, and service quality.

a) Drivers

A total of 92 drivers responded to the questionnaire.

■ Professional Skills

90% of the respondents indicated that they understood the importance of operations management and felt that their service delivery had improved compared to before.

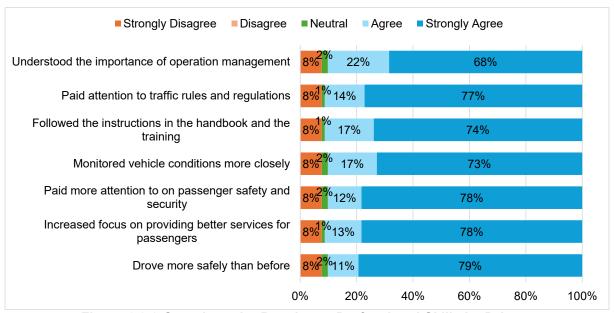


Figure 6.9.8 Questionnaire Results on Professional Skills by Drivers

■ Work Environment

More than 85% of respondents expressed satisfaction with working hours, shift arrangements, and security conditions. However, only 60% agreed that the wage level was satisfactory. Additionally, 70% of respondents reported that the frequency of harassment had decreased.

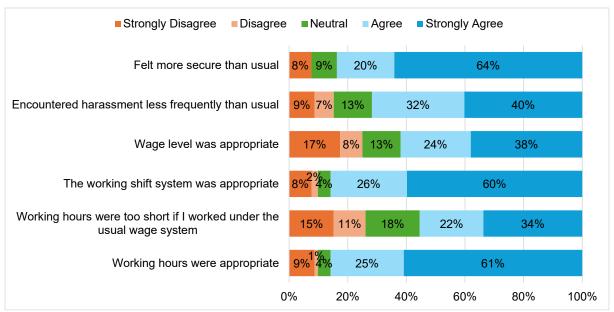


Figure 6.9.9 Questionnaire Results on Work Environment by Drivers

Services

80% of respondents agreed with key aspects of the pilot project, including scheduled operations, provision of passenger information, improved facilities, collaboration among multiple operators, expansion of the operation model to other routes, and the importance of gender and vulnerable group awareness. 60% agreed with the fare system. Additionally, the majority of respondents reported receiving positive feedback from passengers.

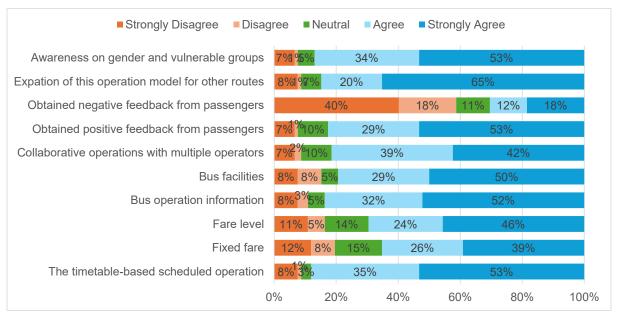


Figure 6.9.10 Questionnaire Results on Services by Drivers

■ Feedback from Drivers

Main comments from drivers in the meeting were shown in below.

- The work environment improved significantly during the Pilot Project.
- We learned how to enhance our driving skills to ensure both passenger safety and comfort.
- We recommend that all drivers, conductors, and stage managers arrive at the stages early to allow a smooth handover during shift changes.
- We advise SACCO owners to provide newer and better-maintained buses for future projects, or alternatively, that NaMATA supplies its own buses to minimize vehicle breakdowns during operations.
- We recommend introducing uniform branding for all project buses to improve visibility and public recognition.
- We suggest that NaMATA pays salaries directly to crew members instead of through the SACCOs, in order to avoid delays in payment.

b) Conductors

A total of 55 conductors responded to the questionnaire.

■ Professional Skills

90% of the respondents stated that they understood the importance of operations management and had improved their service delivery compared to before.

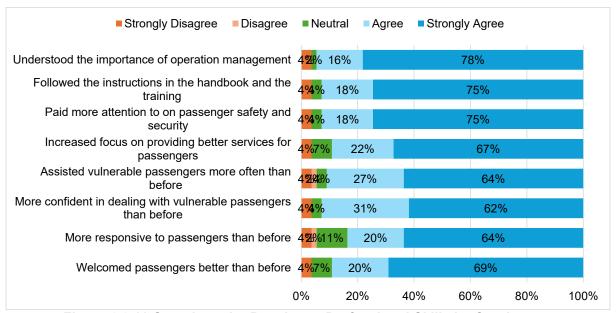
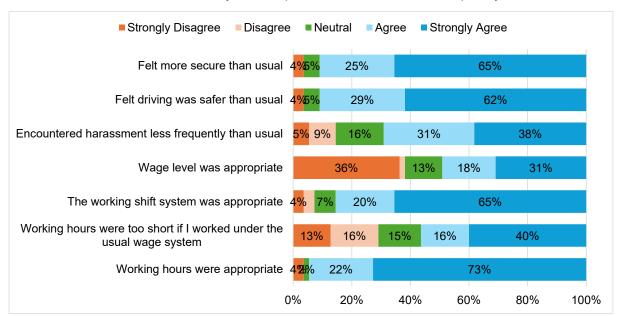


Figure 6.9.11 Questionnaire Results on Professional Skills by Conductors

■ Work Environment

The majority of conductors agreed with the working hours, shift arrangements, and security measures, and noted that driving conditions had become safer. However, only 50% expressed satisfaction with working hours and wage levels—lower compared to



other items. Additionally, 70% reported a decrease in the frequency of harassment.

Figure 6.9.12 Questionnaire Results on Work Environment by Conductors

Services

80% of conductors agreed with scheduled operations, the provision of passenger information, improved facilities, collaboration among multiple operators, and the expansion of this operational model to other routes. However, only 50% supported the current fare levels and the implementation of a fixed fare system. The majority reported receiving positive feedback from passengers.

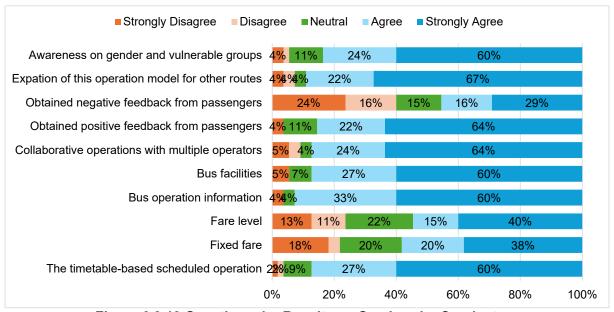


Figure 6.9.13 Questionnaire Results on Services by Conductors

■ Feedback from Conductors

Main comments from conductors in the meeting were shown in below.

- · We learned how to improve our etiquette to enhance customer satisfaction.
- Most customers who boarded the pilot matatus were impressed and expressed full support for the project.
- Police officers extorted bribes from us along the route. We suggest establishing better working relations between the police and operators in future projects.
- We experienced harassment from stage marshals who demanded payment.

 We recommend deploying project-appointed stage marshals along the route.
- There is a need for improved security at the stages during early morning hours.
 We suggest strengthening security arrangements in upcoming projects, especially during such times.
- · We recommend that NaMATA provide improved fare collection systems.
- The fixed fare system did not work effectively. The fare levels were not perceived as customer-friendly, leading many passengers to choose regular buses over project buses. We suggest that NaMATA consults operators in the future before setting fare charts.

c) Stage Managers

A total of 26 stage managers responded to the questionnaire.

■ Professional Skills

90% of respondents indicated that they understood the importance of operations management and had improved their service delivery compared to before.

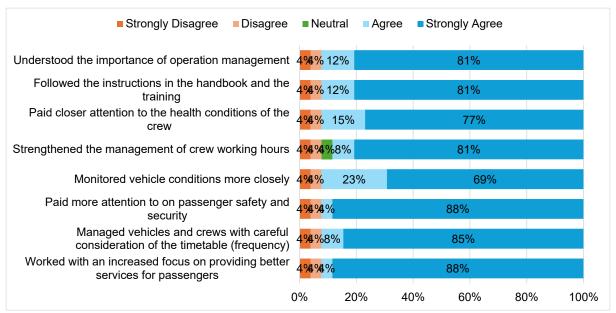


Figure 6.9.14 Questionnaire Results on Professional Skills by Stage Managers

■ Work Environment

More than 70% of stage managers expressed satisfaction with working hours, shift arrangements, and security, and noted improvements in driving safety. Additionally, 55% reported a decrease in the frequency of harassment.

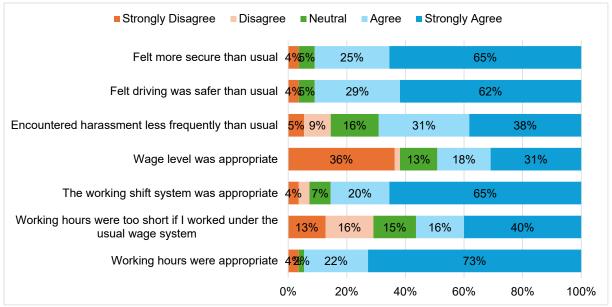


Figure 6.9.15 Questionnaire Results on Work Environment by Stage Managers

Services

70% of stage managers agreed with scheduled operations, collaboration among multiple operators, and the expansion of this operational model to other routes. 60% expressed agreement with the fixed fare system, fare levels, provision of passenger information, and bus facilities. The majority reported receiving positive feedback from passengers.

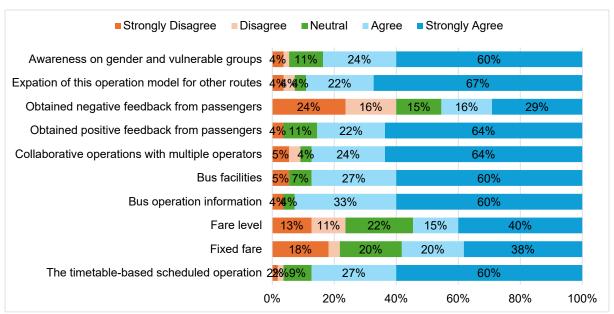


Figure 6.9.16 Questionnaire Results on Services by Stage Managers

■ Feedback from Stage Managers

Main comments from stage managers in the meeting were shown in below.

- This Pilot Project was a valuable platform for collaboration among different SACCOs.
- The training helped us improve our customer service and safety practices during operations.
- The project offered an opportunity to engage with members from other SACCOs and share challenges experienced in the sector.
- Although the training was informative in theory, we encountered challenges in actual implementation due to poor coordination among drivers, conductors, stage managers, and enumerators. We propose conducting integrated training sessions for all participants to improve role understanding and coordination.
- The training duration was too short, and notification came on short notice. As a result, many participants lacked a clear understanding of the project, which led to confusion, data collection errors, duplication of roles, and conflict. We recommend conducting practical, on-the-ground training before the project starts.
- We suggest deploying stage marshals at major bus stops to help attract more passengers.
- · Weekly meetings that were promised to help raise concerns and improve operations were not held.
- There were no proper lavatories provided along the route, and the bus schedule did not allow for eating or bathroom breaks. We recommend either providing mobile toilets or constructing permanent facilities for crew use.

d) Summary

■ Professional Skills

Most drivers, conductors, and stage managers reported that they had gained a better understanding of operations management and had improved their service delivery compared to before. They recommended conducting integrated training sessions that include theory, practical exercises, and on-the-ground implementation.

■ Work Environment

The majority of respondents expressed agreement with working hours, shift arrangements, wage levels, and security conditions.

Services

Evaluation of the fare level and the fixed fare system received lower ratings compared to other aspects. Assessments of fare levels, information provision, bus facilities, the expansion of this operational model, and collaboration among multiple operators varied depending on the respondent's role.

(3) Passenger Satisfaction

A user satisfaction survey was conducted over one week, from May 2 to May 8, at the Prestige bus stop and Ngong Terminal, gathering a total of 2,442 responses. Of these, 855 responses (35%) were from users of the pilot project buses, while 1,587 responses (65%) were from non-users.

When comparing service levels with existing buses, overall satisfaction among pilot project users was high, with 92% expressing satisfaction (Figure 6.9.17). Figure 6.9.18 presents a comparison of satisfaction rates across 14 service items, revealing significant differences between pilot bus users and non-users. Notably, pilot buses showed marked improvements—by approximately 30%—in areas such as conductor behavior, driving behavior, punctuality, and information provision.

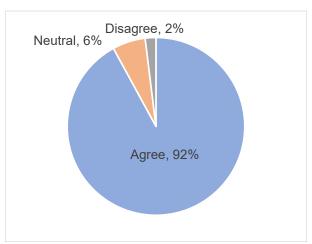


Figure 6.9.17 Overall Passenger Satisfaction Survey Result

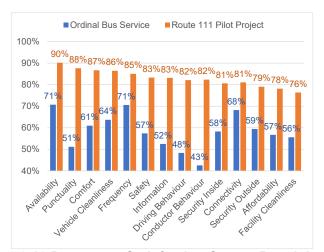


Figure 6.9.18 Passenger Satisfaction Survey Result by Items

7. REVIEW AND RECOMENDATION

7.1 Review

This pilot project demonstrated the effective functioning of roles and responsibilities, and measures established during the planning phase. It also highlighted strong collaboration between regulators and operators, as well as effective coordination among regulators and among operators themselves.

The pilot project was successfully implemented. The high user satisfaction rate, positive feedback from drivers, conductors, and stage managers, and strong audit results collectively indicate the success of the pilot initiative.

Table 7.1.1 Review Result by Item

Item	Review	Evaluation
a. Scheduled	Regular interval operation was implemented by the stage	Good
bus operation	managers. Vehicle shortages in the early morning and late-night	
	hours resulted in fewer services than planned.	
b. Facility	Bus shelters and zebra-crossing markings were installed.	Good
c. Fare setting	The all-day fixed fare was not accepted by passengers, and it is	Even
and application	reverted to current fares during off-peak hours and on weekends.	
d. Information	Bus service information has been made available at the terminus	Good
provision	and at bus stops.	
e. Crew training	Crew training took place on March 29 and 30, and the staffs are	Very Good
	adhering well to the operational guidelines in their bus services.	-
f. Operation	Although timetables were applied for all vehicles, they were not	Good
management	functional. However, the Stage Managers effectively managed	
	vehicle operations using a first-in, first-out approach.	
g. Gender	Gender and vulnerable people mainstreaming was included in the	Good
mainstreaming	crew training and awareness materials were posted in vehicles.	
h. PR	Further outreach activities are required to raise passenger	Even
	<u>awareness.</u>	
i. Monitoring.	Feedback from users and crews was very positive.	Even
and Evaluation	There are challenges on data collection, in particular revenue and	
	expenditure of operators.	

7.2 Recommendation

(1) Strengthened Collaboration Between Stakeholders

During the pilot project, 10 participating operators collaborated with administrative agencies, including NaMATA, NTSA, County Governments, and the police. Regular consultations were held between operators and government agencies, as well as among operators themselves, leading to notable improvements in bus service. This consistent communication and coordination proved essential and should be sustained to improve bus services across Nairobi Metropolitan Area (NMA). Significantly, the project enabled joint service provision among 10 operators who had previously

operated as competitors. Continued support from government agencies is vital to maintain and strengthen such collaborative frameworks.

(2) Improved Passenger Satisfaction and the Importance of Training

The passenger satisfaction survey showed improvements across all 14 measured service indicators. Particularly strong results were observed in areas such as conductor behavior, driving behavior, and safety—all of which can be enhanced through greater crew awareness without additional cost. Regular training for drivers and conductors, based on the Bus Operator's Handbook, can be conducted by each operator. However, to promote broader adoption and standardization, it is recommended that NTSA, the police, and NaMATA—who served as trainers during the pilot—lead and coordinate these training sessions.

(3) Verified Effectiveness of Interval-Based Dispatching

Prior to the pilot, buses typically departed only when fully loaded, limiting service accessibility for passengers at intermediate stops. However, the project confirmed strong demand at these stops, as previously indicated by traffic surveys. Although operators were initially hesitant to adopt interval-based dispatching, the pilot successfully demonstrated its effectiveness in real-world conditions. Maintaining evenly spaced services is expected to improve access for passengers at intermediate bus stop and enhance public confidence in the transport system. Future operational planning should be guided by these findings, with a view to introducing timetable-based operations.

(4) Need for Data-Driven Scheduling

The project assumed a scheduled travel time of 75 minutes between terminals; however, actual travel times varied significantly depending on the time of day. These operational records are valuable for future planning, and continuous data collection and analysis are recommended. Although the timetable-based operation was not successfully implemented during the pilot, the availability of operational data provides a foundation for its potential adoption in the future.

(5) Challenges in Fare Acceptance and Need for Fare Data

A fixed fare system was introduced during the pilot, but it was not well accepted by passengers—particularly during off-peak hours. Public transport fares must balance affordability for passengers with profitability for operators. Setting appropriate fares requires accurate and comprehensive data, which is currently lacking in the Nairobi Metropolitan Area. A collaborative data collection effort between regulators and

operators is essential to establish a sustainable and equitable fare structure.

(6) Addressing Reliability Through Preventive Maintenance

A high number of service interruptions due to vehicle breakdowns highlighted the lack of reliability in the current public transport system. In response, NTSA should implement stricter vehicle inspection protocols. Simultaneously, operators must move from reactive to preventive maintenance practices by promoting awareness of the importance of regular vehicle servicing.

(7) Monitoring and Recognition for Quality Service

In addition to monitoring efforts by operators, administrative agencies should conduct regular on-board and on-street audits to ensure a consistent level of service across all operators. These audits should be used as a tool for guidance and service improvement, rather than punishment. Furthermore, introducing a system to recognize and reward crew members who adhere to operational guidelines and deliver high-quality service could incentivize continued performance improvements.

Chapter 8

Roadmap for Gender and Vulnerable Group

Mainstreaming in Public Transportation Sector in

Nairobi Metropolitan Area

August 8, 2025

Roadmap for Gender and
Vulnerable Group
Mainstreaming in Public
Transportation Sector in Nairobi
Metropolitan Area



Working Group 5

JICA Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area

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Abbreviation

ADB Asian Development Bank

ECOSOC Economic and Social Council

GBV Gender-based Violence

GSIM Gender and Social Inclusion Mainstreaming

ITDP Institute for Transportation and Development Policy

JICA Japan International Cooperation Agency

KeNHA Kenya National Highways Authority

KERRA Kenya Rural Roads Authority
KURA Kenya Urban Roads Authority

NaMATA Nairobi Metropolitan Area Transport Authority

NGEC National Gender and Equity Commission

NGO Non-Governmental Organization

NTSA National Transport and Safety Authority

OECD Organization for Economic Cooperation and Development

PWDs Persons with Disabilities

RB Responsible Body

SACCO Saving and Credit Cooperative Organization

SDGs Sustainable Development Goals
SDOT State Department of Transport
SEI Stockholm Environment Institute
UNFPA United Nations Population Fund

WB World Bank

WEF World Economic Forum

WG Working Group

Chapter 1 Background and Objective

Section 1: Policy Context

All individuals should be able to pursue their own existence, regardless of the circumstances in which they find themselves. The freedom of mobility is one of the key attributes that enables the concept above, ensuring that everyone can fulfill their activity requirements to satisfy daily needs and achieve life purposes. In the transport sector, these values are widely shared, and transport systems have been becoming more inclusive.

(1) Sustainable Development Goals (SDGS)

In the international context, the Sustainable Development Goals are a universal call to action to eradicate poverty, safeguard the environment, and guarantee that by 2030, all individuals will experience peace and prosperity. The SDG 11, 'Sustainable cities and communities,' outlines Target 11.2 as 'providing access to safe, affordable, accessible, and sustainable transport systems for all, with a particular emphasis on the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons, as well as on improving road safety.' SDG 5 specifies 'Gender equality,' which is a cross-sectoral and globally agreed international objective, in addition to SDG 11. In particular, the transport sector is a source of economic activity and employment, and the utilisation of transport services ensures access to employment, economic opportunities, healthcare, and education. Consequently, transport services have the potential to contribute to a number of SDGs, including SDG 1 'No poverty,' SDG 3 'Good health and well-being,' and SDG 4 'Quality education.' It is also crucial to acknowledge that the transport sector contributes to SDG 8 'Decent job and economic development' and SDG 10 'Reduce inequalities' by providing economic and labour opportunities to everyone.

(2) Inclusive transport

Inclusive transportation is one of the initiatives in the transportation sector that are associated with SDG 11. The European Union asserts that 'an inclusive transport system ensures unrestricted access to jobs and services for all potential passengers and people, regardless of their circumstances' and provides ease of movement. For instance, the United Kingdom Department of Transport establishes 'Strategies for inclusive transport: achieving equal access for vulnerable transport users' (2020). In 2006, the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons was enacted in Japan, and specific targets were established, including the number of accessible stations. Inclusive transport initiatives are not always advanced in developing countries, despite the fact that a number of initiatives have been implemented in developed countries. The primary issues are the absence of budgets during the development phase and the failure to include disabled groups during the planning phase.

(3) Gender and transport

Gender is defined as "characteristics that are socially and culturally constructed and associated with gender" (JICA, 2024). It encompasses not only gender but also the roles and behaviours that are anticipated as a society. And the gender perspective 'concentrates on the gender issues, needs, and impacts that result from the distinct social roles and influences that exist between men and women' (JICA, 2024). The gender-related characteristics such as gender segregation in transport behaviour and low proportions of women in the workforce and management positions in the transport sector have been observed. In order to resolve these concerns, the World Bank, ADB, and OECD, among others, have issued reports and guidelines on gender and transport. The examples are 'Handbook for Gender-Inclusive Urban Planning and Design' (WB 2020), 'Manual for Gender Mainstreaming in Urban Planning and Urban Development' (Urban Development and Planning, Vienna, 2013), and 'Gender Tool Kit: Transport' (ADB, 2013). Additionally, the

organisations have implemented numerous initiatives in other countries. For example, the UK Department of Transport established the 'First Guidance and Checklist for Gender Auditing on Public Transportation' in 2000, while the Austrian government developed the 'Gender Mainstreaming Manual'. These guidelines have promoted standardisation of gender mainstreaming in public transportation and urban planning fields.

(4) Policy context in Kenya

Kenya is ranked 75th out of 146 countries in the World Economic Forum (WEF) Gender Index (WEF, 2024). Gender disparities in education and political empowerment are not considered to be positive or negative, however, the economic disparities are evident in the fact that the unemployment rate was 4.11% and 8.07% among males and females, part-time workers rate was 33.31% and 49.14% among males and females, and women have a low rate of property ownership due to uneven rights to access to land and non-land assets (WEF, 2024). These disparities in gender may potentially impact the public transportation system.

Historically, in 1979, Kenya ratified the Convention on the Elimination of All Forms of Discrimination against Women. It also ratified the African Charter (1981) and the Maputo Protocol (2005), as well as the Solemn Declaration on Gender Equality in Africa (2004) and the SDGs (2015). As such, Kenya shares a commitment to international gender and disability initiatives, which includes the ratification of international agreements. Therefore, Kenya is expected to implement initiatives that enhance the status of gender and persons with disabilities, as it is integrated into international frameworks on these topics as well as the Kenyan state is obligated to comply with international agreements regarding gender equality.

On the ground, National Gender and Equity Commission (NGEC), UN Habitat, and ITDP (Institute for Transportation and Development Policy) implemented the 'Access and Mobility' initiative to enhance the mobility of persons with disabilities (2019). Other project activities have been implemented with the assistance of donor agencies such as World Bank, UN Habitat, SEI (Stockholm Environment Institute) Africa, UNFPA, etc. to conduct research on the current state, provide recommendations, and execute public relations activities, campaigns, seminars, and capacity development activities to promote gender and vulnerable group mainstreaming to promote inclusive transportation. Also, the NGO Flone Initiative is engaged in research, policy advocacy, and awareness-raising. Moreover, activities were coordinated by pertinent operators, and awareness-raising in the transport sector was implemented during the Gender-based Violence (GBV) elimination campaign by UNFPA in 2023. As an innovative practice, SACCOs and operators that are exclusively composed of women exist and continue to function. Nevertheless, additional endeavours are anticipated to be continued.

However, here is a lack of a comprehensive vision, and numerous activities are implemented on a one-off basis. On the other hand, the promotion of gender and vulnerable group mainstreaming has a huge potential of being significantly bolstered by the networks that have been established during the implementation of activities and the accumulation of knowledge within individual institutions. By utilising the experience and heritage of practices so far, it is anticipated that the Kenyan governments will also make efforts to promote gender and vulnerable group mainstreaming and inclusive transport in the country, as has been the case in other countries.

Section 2: JICA Capacity Building Project and WG5 Activities

(1) Project activities

The 'JICA Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area' (the JICA Capacity Building Project) aims to enhance the efficacy of public bus (matatu) services that are utilised by over 80% of Nairobi residents. One of the activities, Woking Group 5 (WG5), advocates for the integration of a gender and vulnerable group perspective into public bus services.

The necessity of the WG5 activities is evident in the following:

- Despite the fact that both government institutions and bus/matatu operators acknowledge
 the significance of considering gender and vulnerable groups in public transportation, the
 priority of their mainstreaming is low, primarily due to budget and personnel constraints;
- The road sub-sector has implemented a policy statement entitled 'Policy Statement for Mainstreaming Gender into Road Sub-Sector.' However, the challenges and issues associated with gender and vulnerable group mainstreaming in public transportation have not been adequately addressed, and there is no concrete or comprehensive plan in place to address these challenges;
- It is necessary to establish a management system in the government/administration to perpetually address these issues, which includes the identification of challenges, the preparation of a comprehensive action plan, and the implementation of the plan.

The WG5 has implemented following four activities:

- Activity 1: A platform of gender and vulnerable group sensitive working group is formulated
- Activity 2: Pilot projects to improve more inclusive public bus services are implemented
- Activity 3: Capacity-building workshop and training on gender and vulnerable group sensitive transport services are implemented
- Activity 4: A roadmap for sustainable gender and vulnerable sensitive system is formulated

(2) Surveys and other studies conducted in the JICA Capacity Building Project

The current state related to gender and vulnerable group mainstreaming in public transportation was analysed by the WG5 using the following data and surveys: institutional analysis, passenger satisfaction surveys, current situation surveys of government officials, passengers, and managers and personnel of bus/matatu operators, as well as literature review. The outline of the surveys are shown in Table 1.1.

Table 1.1 Survey List

Survey	Subject	Method	Objective
Institutional Analysis	Laws and regulations, literature	Literature	Organise an up-to-date institutional framework on gender and vulnerable road users.
Passenger Satisfaction (twice)	2,402 (P), 2,400 (P)	Quantitative	Factors associated with passenger satisfaction and gender differences. Impact of a pilot project (Route 111 Pilot Project)
Current Situation Survey	139 (G), 304 (P), 127 (O)	Quantitative Qualitative	Detailed analysis and organisation of the current situation of services, employment, etc. for gender and vulnerable groups.

G: government officers, P: passengers, O: operators (managers, drivers, conductors and stage managers)

Section 3: Roadmap Objective

(1) Objective

Considering that there are no specific plans to target gender and vulnerable group mainstreaming in public transportation and guarantee its sustainable implementation, the objective of this Roadmap is to establish a long-term plan to implement specific measures and actions that will mainstream gender and vulnerable groups to achieve an inclusive public transportation system and public transportation services. It will also specify the implementation process, including timelines and responsible implementing agencies.

(2) Target

This Roadmap sets its target on the public transportation services, especially bus and matatu services, and its system in the Nairobi Metropolitan Area.

(3) Definition

- i) Public transportation services and public transportation system
 - Public transportation services refer to transport passenger services provided by bus and matatu as defined in the National Transport and Safety Authority (NTSA) Act.
 - Public transportation system is the system for providing the public transportation services and comprises public transportation service users, public transportation service providers (crew, employees and management), administrative structures, institutions, regulations and laws related to public transportation services.

ii) Gender and vulnerable group mainstreaming

- Gender mainstreaming is defined as 'The process of assessing the implications for women
 and men of any planned action, including legislation, policies or programmes, in all areas and
 at all levels. It is a strategy for making women's as well as men's concerns and experiences
 an integral part of the design, implementation, monitoring and evaluation of policies and
 programmes in political, economic and societal spheres so that women and men benefit
 equally and inequality is not perpetuated. The ultimate goal is achieving gender equality.'
 (ECOSOC (1997/2))
- Vulnerable groups refer to those who have limited access to transport and limited
 accessibility in the transport system due to age, gender, physical or cognitive function or
 economic circumstances, and includes children, older people, women (e.g. pregnant women,
 women with infants) and persons with disabilities (PWDs). And some initiatives especially
 focus on the PWDs as the main target of the inclusive transport.
- In this Roadmap, the term, 'Gender and vulnerable group mainstreaming' is defined as adopting an approach that takes into account gender and vulnerable groups in the planning, implementation, monitoring and evaluation processes of policies, projects and organisational management, with the aim of inclusive public transportation services.

iii) Transport-related agencies

- Transport-related agencies, in this Roadmap, are defined as 'Nairobi Metropolitan Area Transport Authority (NaMATA), National Gender Equality Commission (NGEC), NTSA, Nairobi City County Government, Kajiado County Government, Kiambu County Government, Machakos County Government and Murang'a County Government, Kenya National Highways Authority (KeNHA), Kenya Urban Roads Authority (KURA), Kenya Rural Roads Authority (KeRRA), and National Police Service'.
- Counties are Nairobi City County Government, Kajiado County Government, Kiambu County Government, Machakos County Government and Murang'a County Government.
- Road Agencies are KeNHA, KURA and KeRRa.

iv) Geographical limitations

• This Roadmap is geographically limited to the Nairobi Metropolitan Area of Nairobi City County, Kajiado County, Kiambu County, Machakos County and Murang'a County.

Chapter 2 Current State and Issues

Section 1: Analytical Perspective

Initially, this Roadmap evaluates the current state of the institutional environment in relation to the mainstreaming of gender and vulnerable groups. The institutional context encompasses the implementation system and the implementation environment for the mainstreaming initiative.

Three primary actors are presumed for the analysis of public transportation services and systems: passengers, operators, and government agencies. Operators consist of managers, employees, drivers, and conductors. The Roadmap then identifies the problems and challenges that specific social groups, such as women, the elderly, persons with disabilities (primarily physically and audiovisually impaired), and children, face in the context of mainstreaming. These social groups are potentially or actually affected by social, economic, political, and cultural circumstances, in addition to specific physical and physiological conditions. The term 'environment' encompasses all the factors of the abovementioned conditions and circumstances which have affected on the three actors in terms of its values, behaviours and any other characteristics.

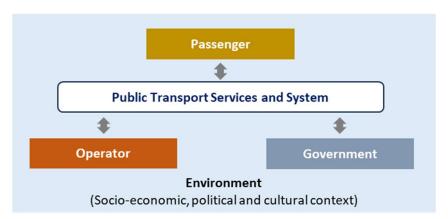


Figure 2.1 Analytical Perspective

Section 2: Current State Analysis

(1) Institutional setting

The 2010 Constitution of Kenya guarantees gender equality, stating that 'Women and men have the right to equal treatment, including the right to equal opportunities in political, economic, cultural, and social spheres'. Additionally, the Kenya Vision 2030 establishes objectives and policies to enhance the working conditions, staff gender ratios, and the eradication of sexual harassment and violence in all government institutions.

The National Policy on Gender and Development 2020 is a national-level policy that establishes four objectives and anticipates a review every five years. Additionally, the Ministry of Gender, Culture, the Arts and Heritage is the government institution responsible for the promotion and coordination of gender mainstreaming, the prevention of gender-based violence (GBV), and the socio-economic empowerment of all individuals in order to achieve sustainable development at the administrative level. Furthermore, the National Gender and Equity Commission (NGEC) is a national advisory body that is responsible for 'promoting and ensuring gender equality, principles of equality, and non-discrimination for all persons in Kenya.'

Nevertheless, as previously mentioned, there are no specific plans in place to mainstream gender and vulnerable groups in the public transportation sector. The existing public transportation plans, policies, and initiatives do not systematically address the challenges faced by women and vulnerable groups.

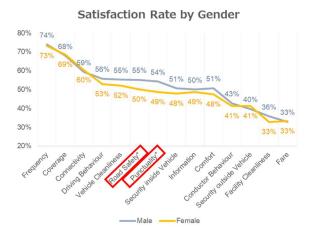
Furthermore, there are no platform or responsible entities for gender and vulnerable group mainstreaming measures that are dedicated to the transportation sector. Consequently, there are no provisions in transport-related legislation, policies, or measures to encourage the mainstreaming of gender and vulnerable groups.

(2) Passenger

Previous literature has identified gender disparities in travel behaviours. Women make more short travels and certain journeys during non-peak hours and during the day compared to men according to the traffic surveys conducted in the JICA Capacity Building Project. Furthermore, women's incomes are comparatively lower, which restricts their utilisation of private vehicles and public transportation. Additionally, they engage in more non-motorised transport (WB, 2020). Other findings in the previous literature include the fact that men are more likely to make trips for work purposes, while women are more likely to make trips for mobility of care and other purposes (WB, 2020).

The following findings were confirmed and identified by the passenger satisfaction survey and the current situation survey, in addition to the knowledge above.

First, fares, cleanliness of facilities, safety outside the vehicle, and conductor behaviour are all rated as less satisfactory by both men and women. And when it comes to the gender disparities, the satisfaction of women with road safety (footpaths, road crossings) and punctuality is statistically substantially lower than that of men. (ref. Figure 2.2) These are critical service attributes for women. The state of bus stop facilities, unregulated fare systems, overcharging by conductors, and arbitrary price increases are all factors that contribute to availability. Women are more concerned with safety and lower in satisfaction with it than men. Due to inadequate enforcement, overspeed and overloading, safety is perceived as reckless driving, and is negatively evaluated.



Source: Passenger Satisfaction Survey in the JICA Capacity Building Project Figure 2.2 Satisfaction Rate in 14 Service Attributes by Gender

Second, there are some specific service attributes whose satisfaction is significantly related to the satisfaction with overall quality among males and females. The frequency of service, fare, conductor behaviour, vehicle sanitation, facility cleanliness, comfort, driver behaviour, road safety, safety in the vehicle, and safety outside the vehicle are statistically significantly related to overall satisfaction and satisfaction by domain. Road safety, safety within the vehicle, and safety outside the vehicle are the most significant of these. Significant service attributes for men include the duration of travel time, which is a significant preference factor for riding public buses. Additionally, the frequency of service and the cleanliness of facilities are associated with overall satisfaction with public buses.

Third, the presence of harassment was statistically substantially correlated with the overall satisfaction of women with public bus services, as was their satisfaction with the treatment of crew members. Crew members' verbal and abusive harassment was the most prevalent form of on-board harassment among women, PWDs, and children, and it was frequently tolerated in silence. (Figure 2.3)

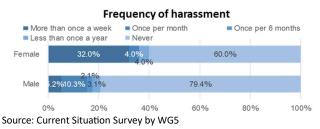


Figure 2.3 Harassment Experience inside Public Buses

Lastly, when it comes to vulnerable group perspectives, the persons with disabilities are less satisfied in Acceptability, Affordability, Accessibility, and Availability attributes. Passengers who are physically challenged experience substantial challenges in terms of the conditions of the vehicle and the support provided by the crew. Additionally, those with audiovisual impairments are unable to access information and the fares are not suitable. PWDs were substantially underrated in the areas of safe operation, bus operation information and announcements, fares, and getting on and off the bus compared to able-bodied individuals. (ref. Figure 2.4)



Source: Current Situation Survey by WG5

Figure 2.4 Satisfaction Rate in 8 Service Attribute by Disability Status

(3) Operator

The following findings were verified and identified by the passenger satisfaction survey and the current situation survey.

First, labour force participation among women is limited. The proportion of women in management and union representation is even lower, and the number of female crew members is relatively low. Recruitment information is challenging to communicate to women. A social stigma exists against women who are employed in the matatu sector.

public transport sector? Yes No No answer Female 64.0% 32.0%

Do you think there are challenges for female working in the

Female 64.0% 32.0%

Male 64.9% 35.1%

0% 20% 40% 60% 80% 100%

Figure 2.5 Perception in Female Labour Force

Second, support mechanisms for women is not adequate. Men frequently request that their spouses supervise their children, whereas women frequently depend on school or family members or leave their children alone. Concurrently, family support measures should be available to drivers and conductors who are not under employment contracts, as those groups are not treated equally to the employees, thus, are fundamentally excluded from company's welfare programmes.

Third, harassment concerns exist. Verbal and abusive harassment from other crew members is a common occurrence for female crew members. The majority of crew members are cognizant of the harassment complaint management system; however, a small number are not. The manner in which harassment is addressed is inconsistent from workplace to workplace.

Fourth, the working environment, which includes lengthy working hours, inflexible shifts, and late-night work, is unfavourable to women. These conditions are the hinderance of female labour participation.

(4) Government

The following findings were affirmed and identified by the passenger satisfaction survey and the current situation survey.

First, decisions have not fully incorporated women's perspectives. In transport-related agencies, the promotion of women at the technical and administrative level is comparatively advanced, and the NTSA Act and other legislation, such as in decision-making boards, provide for a one-third system. Nevertheless, there is a lack of progress in the advancement of women to management and decision-making roles. Additionally, there is no mechanism in place to facilitate the appointment of persons with disabilities. Consequently, it is difficult to assert that the decision-making process has been fully integrated with the perspective of vulnerable groups and gender.

Second, training and the work environment have several issues. The capacity or attitude to mainstream gender and vulnerable groups is rather limited due to the scarcity of training opportunities on universal access and gender. The proactive measures to capacity development of women and vulnerable groups have the potential to diminish disparities in labour participation rate. As per the working environment, many administrative bodies implement family support measures, including childcare and maternity leave, in the context of the work environment. Consequently, the environment is somewhat conducive to the promotion of gender equality. Nevertheless, a consultative conduit has not been established by a significant number of institutions in the event of an issue. Consequently, there is a dearth of an effective problem-solving mechanism.

Third, gender considerations in administrative procurement are not sufficiently considered in transport-related agencies. To encourage the women-led businesses and promote gender equality, procurement has power to change the status quo to some extent, however, this method has not been fully utilised.

Section 3: Issues

Based on the current state analysis in the previous section, Table 2.1 summarises the primary concerns in the institutional setting, passenger, operator, and government in relation to the mainstreaming of gender and vulnerable groups. The issues within the government can be categorised as those of the institutional context, and the work and labour aspects of the issues within the government are similar to those of the operators. Therefore, to deal with the issues in the institution, government, passenger and operator perspectives, three distinct policy domains are assumed: institution, service, and work and labour, taking into account the characteristics of the issues.

Table 2.1 Issues in Institutional Setting, Passenger, Operator and Government

Perspective	Major Issues	Policy Domain
Institution/ Government	 The public transportation sector lacks any plans or objectives for gender mainstreaming, despite the fact that the Constitution of Kenya contains a gender equality clause and the national vision includes a gender agenda. In the development of gender and vulnerable group mainstreaming toward inclusive public transportation services, there are no institutions to manage and supervise the mainstreaming of gender and vulnerable groups. 	Institution
Passenger	 are significantly less satisfied with road safety and punctuality, and they are also concerned about the safety of bus platforms. PWDs: encounter obstacles in the following areas: accessing bus stops, the pedestrian environment, boarding and disembarking from the bus, safety at bus stops, bus operation information and announcements, fares, crew treatment, and harassment. Women, PWDs and children: Women, PWDs, and children are frequently concerned about the safety of operations. A significant number of individuals were subjected to harassment at bus stops and while traveling in vehicles by crew members. Crew treatment is a critical factor. In light of economic inequality, affordability is particularly important for women and PWDs. 	Service
Operator/ Government	 The political and economic inequalities present in the country result in a low proportion of women in management and business ownership, as well as a scarcity of female crew members. Women employed in the matatu sector are subjected to social stigma on women labour participation. Women are frequently subjected to harassment from other crew members. The workplace presents physical and psychological obstacles. 	Work and Labour

Chapter 3 Policy and Goal

(1) Description

In line with the current state and issues, basic policies, goals (objectives), and targets (benchmarks) are established in each domain to guide gender and vulnerable group mainstreaming in the public transportation sector.

(2) Period

This Roadmap sets a target year of 2035. Starting from the year 2025, the period until 2035 is divided into three terms as follows.

✓ Term 1 (short-term target year): 2025-2026

✓ Term 2 (mid-term target year): 2027-2030

✓ Term 3 (long-term target year): 2031-2035

(3) Policy, goal and target

For each domain (institution, service, and work and labour), the policies, goals and targets are described as follows.

A. Institution domain

- Policy:
- An inter-ministerial body, a common plan or roadmap, required financial and human resources, guidelines and a monitoring and evaluation mechanism will be established to promote gender and vulnerable group mainstreaming in the public transportation system.
- Goal
- Gender and vulnerable groups mainstreaming measures will be effectively and efficiently implemented with engagement of all the stakeholders.
- Target:
- Gender and Social Inclusion Mainstreaming (GSIM) Roadmap Implementation Team, the successor to WG5 of the Project, is established by the first half of Term 1 within NaMATA.
- Plan or roadmap for gender and vulnerable group mainstreaming is agreed and officially approved among the stakeholders by the end of Term 1.
- Guidelines on service, crew training, facility, vehicle and working environment will be created by the end of Term 1.

B. Service domain

- Policy:
- Service, facilities and vehicles are improved to be accessible and friendly to all users.
- Goal:
- The passenger satisfaction level among all the social groups will be enhanced and the gap due to gender and vulnerability will be eliminated.
- Target:
- A guideline on service, crew training, facility and vehicle will be created by the end of Term 1.
- The proportion of crews trained will reach 80% by the end of Term 2.
- The proportion of facilities and vehicles complying with the guidelines will reach 10% by the end of Term 3.
- The passenger satisfaction level will reach 80 points regardless of social groups by the end of Term 3.

C. Work and labour domain

- Policy:
- The working system and environment are improved to be friendly to all individuals.
- Goal:
- Impediment of labour market participation against targeted social groups will be eliminated, and the workers satisfaction level will reach satisfactory level among all the social groups.
- Target:
- A guideline on the working environment will be created by the end of Term 1.
- The proportion of bus operators complying with the guideline on working environment will reach 50% by 2035.
- The workers' satisfaction level will reach 80 points regardless of social groups and of contract types by the end of Term 3.
- The proportion of female workers in operators will reach 1/3 by the end of Term 3.
- The proportion of female officers in the transport-related government agencies will reach 1/3 by the end of Term 3.
- The proportion of female management officers in the transport-related government agencies will reach 1/3 by the end of Term 3.

Chapter 4 Measures Formulation

Section 1: Measures against Issues in each policy domain

(1) Institution Domain

Several issues were identified in the institution domain. One is the absence of a responsible body. The initial step is to establish the responsible body to promote the mainstreaming. Furthermore, in the existing legal framework, there is no legal foundation and authorisation for such a responsible body, as well as an appropriate budget source and human resource provision, which are essential for its sustainability.

Lack of a shared plan and vision is also a critical problem. And the role of this Roadmap lies in the provision of such a shared plan and directs the mainstreaming. Moreover, basic data and information are also scarce, which are necessary to develop a feasible and effective plan from the perspective of the planner. And a management and monitoring system is essential to ensure that the activities are in alignment with the plan and that response measures are implemented as needed, after the baseline data and information have been obtained.

Additionally, a coordination mechanism is required to ensure that gender and vulnerable group mainstreaming measures are implemented in a harmonious manner among relevant transport-related agencies, which is essential for the successful execution of the plan. In order to ensure that the measures are in compliance with the plan, it is necessary to implement standardisation, including the provision of technical support, counsel, and guidelines. Finally, effective stakeholder engagement is achieved through the implementation of this initiative through the implementation of appropriate stakeholder management. Strong political support and commitment, as well as support from stakeholders such as passengers, operators, government agencies, and the general public, are all included in this stakeholder engagement.

Table 4.1 Issues in Institution Domain

Category	Specific issues
Responsible body	Existence of a responsible body
	Authority and legal basis
	Budget
	Human Resource
Implementation environment	Plan
	Basic data environment
	Management and monitoring system
	Coordination mechanism
	Standardisation
	Stakeholder engagement

The aforementioned issues and perspectives are addressed through the implementation of six measures. The establishment of the responsible body and coordination mechanism or platform for gender and vulnerable group mainstreaming, which includes the securing of financial and human resources, is encompassed by the Body Formulation measure. In order to facilitate the acquisition of financial and human resources, as well as power, a legal status is necessary, which is taken by the Legal Basis measure. Following the establishment of the implementation platform,

the following steps are taken: the formulation of a plan, the establishment of a monitoring and evaluation system, and the development of guidelines. Those activities are in Plan, Monitoring and Evaluation System, and Guideline measures. Additionally, it is imperative to raise awareness and advocate for the mainstreaming in order to secure the support of both citizens and politicians in Awareness and Advocacy measure. The measures for each issue are represented by the star marks in Table 4.2.

Table 4.2 Issues and Possible Measures in Institution Domain

Issues				Mea	sures		
Category	Specific Issues	Body Formulation	Legal Basis	Plan	Monitoring and Evaluation System	Guidelines	Awareness and Advocacy
Responsible	Existence of responsible body	*					
body	Authority and legal basis.		*				
	Budget		*				
	Human Resource		*				
Implementation	Plan			*			
environment	Basic data environment				*		
	Management and monitoring system				*		
	Coordination mechanism	*					
	Standardisation					*	
	Stakeholder engagement	*					*

(2) Service Domain

The issues in service domain are categorised in Table 4.3 below with adjusting the 4As concept to Accessibility and Availability, Affordability, Safety and Security (Acceptability), as perceived by service recipients. Also, the social categories in which there are significant gaps are listed in Table 4.3.

In terms of accessibility, those with physical disabilities, particularly wheelchair users, may find it difficult to use sidewalks to bus stops or steps at bus stops and buses. In terms of availability, women also consider bus accuracy to be an issue; in terms of affordability, changeable fares are a concern shared by all social categories, including women and persons with disabilities.

In terms of safety and security, women are concerned about bus stop security, while the visually and hearing handicapped are particularly concerned about information display. In addition, all social groups raised their concerns about the operation's safety.

Table 4.3 Issues in Service Domain

Category	Specific Issues	Notable Gap		
Accessibility & Availability	Walkway	PWDs		
	Boarding and alighting	PWDs		
	Punctuality	Women		
Affordability	Fare	(Women and PWDs)		
Safety and Security	Bus stops (security, road safety)	Women		
	Announcement and information	PWDs		
	Safe operation	Women, PWDs, children		
	Walkway (road safety)	Women		
	Attitude, assistance and service of crew	Women, PWDs, children		
	Harassment	Women, PWDs, children		

To the issues above, corresponding six distinctive measures are identified: crew service, fare, communication, operation, and infrastructure and vehicle improvement in Table 4.4.

Table 4.4 Issues and Possible Measures in Service Domain

Issues				Mea	sures		
Category	Specific Issues	Crew Service	Fare	Communication	Operation	Infrastructure	Vehicle
Accessibility	Walkaway					*	
and Availability	Boarding and alighting	*					*
	Punctuality				*		
Affordability Fare			*				
Safety and	Bus stops					*	
Security	Announcement and information	*		*			
	Safe operation	*			*		
	Walkway					*	
	Attitude, assistance and service of crew	*					*
	Harassment	*					

(3) Work and Labour Domain

In Work and Labour Domain, following the categories of the Women's Empowerment Principles (WEP)'s seven principles of empowerment, the issues regarding work and labour are identified in Table 4.5.

Women are underrepresented in decision-making and management roles in operators and regulators, and disability inclusion is still in its early stages. In terms of discrimination, there are

disparities in recruiting and employment systems, as well as treatment of women by operators, workplaces that are hostile to women and persons with disabilities, and stigma against women and persons with disabilities working in the transportation sector. In terms of wellness and safety, operators have been found to have unfavourable working circumstances for women and persons with disabilities due to harassment and lengthy working hours, as well as a lack of appropriate family policies to account for women's home obligations. In terms of education and training, there is a dearth of training for women and persons with disabilities among operators, as well as workplace harassment awareness and considerations for women and handicapped employees, among other things. From an enterprise development standpoint, there are no procedures in place to include women and persons with disabilities in service, planning, and policy creation at operators, and their perspectives are not effectively represented. Furthermore, in terms of awareness and advocacy, the improvement of the working environment and other areas for women and physically challenged employees is not well addressed, and there is a lack of awareness of improvement. There is no process in place to measure mainstreaming and report results to the appropriate departments.

Table 4.5 Issues in Work and Labour Domain

Category	Specific Issues	Notable Gap
Leadership	Decision makers	Women
	Managers	Women
	Business encouragement	
Discrimination	Recruitment and employment	Women
	Employment contract	
	Working condition	Women
	Stigma	Women
Well-being and Safety	Safety and health	Women
	Family-friendly policy and system	
Education and Training	In-service capacity development	
	Awareness on harassment	Women
Enterprise Development	Participation	Women
Awareness and Advocacy	Awareness to general public	Women
Measurement and Report	Measurement setting	

And seven measures are devised to address the aforementioned concerns. Leadership and empowerment, labour and working conditions, facility, training and development, participation, awareness, and reporting, as outlined in Table 4.6.

Table 4.6 Issues and Possible Measures in Work and Labour Domain

Issues Issues Measures								
Category	Specific Issues	Leadership and Empowerment	Employment and Working Conditions	Facility	Training	Participation	Awareness	Measurement and Report
Leadership	Decision makers	*						
	Managers	*						
Discrimination	Recruitment and employment		*					
	Employment contract		*					
	Working condition		*					
	Stigma						*	
Well-being and	Family-friendly policy and system		*					
Safety	Safety and health			*				
Education and Training	In-service capacity development				*			
Enterprise Development	Opinions and service preferences	*				*		
Awareness and Advocacy	Awareness on harassment						*	
Measurement and Report	Measurement setting							*

Section 2: Measure Package

(1) Grouping of the individual measures

By considering the similarities and implementation systems of the individual measures specified in the previous section, seven measure packages were established. Table 4.7 expresses the relationship between the three policy domains and each category of measures.

For the Institution Domain, measure packages of Institution, Plan, Monitoring and Evaluation, Guideline, and Awareness and Advocacy are identified. Measure packages of Service Improvement, and facility and vehicle improvement are for the Service Domain, and Work and Labour Improvement package is for Work and Labour Domain.

Table 4.7 Measure Package for Each Domain

Measure Package	Institution	Service	Work and Labour
Institution	0		
Plan, Monitoring and Evaluation	©		
Guideline	©		
Awareness and Advocacy	©		
Service Improvement		©	
Facility and Vehicle Improvement		©	
Work and Labour Improvement			0

(2) Expected outcomes and impacts of the 7 measure packages

The expected outcomes and impacts of the measure packages are indicated in Figure 4.1. The Institution package establishes the responsible body with legal basis and necessary resources, resulting in increased feasibility of mainstreaming plans and measures. And to promote effective and efficient management of the plans and measures, the Plan, Monitoring and Evaluation package is anticipated to function under the control of the responsible body and transport-related agencies. Moreover, to provide the technical advices and inputs and standardise the mainstreaming measures, series of guidelines and manuals are to be created in the Guideline package, and to make the mainstreaming initiative rooted among all the stakeholders, Awareness and Advocacy package increases the acceptability of mainstreaming plans and measures. In the phase of implementing specific measures, the packages of Service Improvement, Facility and Vehicle Improvement, and Work and Labour Improvement shall bring impacts of increased service usage by women and persons with disabilities, as well as their labour market participation.

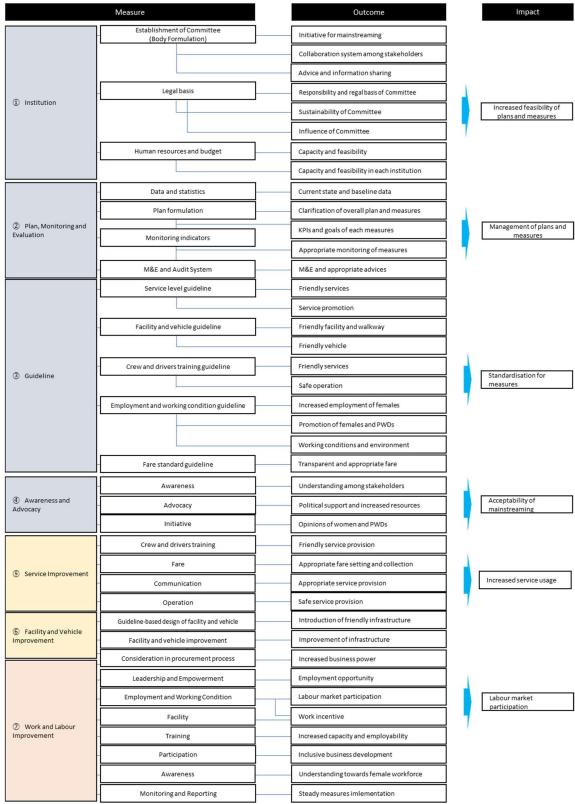


Figure 4.1 Outcome and Impact of Seven Packages

Chapter 5 Roadmap

Section 1 Overall Flow

(1) Overall flow of the seven measure packages

The overall flow of the seven measure packages is shown in Figure 5.1. After the responsible body for mainstreaming is established, the implementation environment is also developed by creating plan, monitoring and evaluation mechanism and guidelines, and conducting awareness and advocacy activities. After these basic conditions are enhanced, the actual implementation of mainstreaming measures is to be performed to enhance service level, facility and vehicle quality, and work and labour conditions.



Figure 5.1 Overall Flow of Seven Measure Packages

(2) Outline of the 3 terms

The overall flow of the implementation of the seven packages is shown above, and in each Term indicated in Chapter 3, the activity outline is as follows.

Term 1 (2025-2026):

- The implementation environment is to be well developed.
- Establish a responsible body and evaluate the overall plan, guidelines, monitoring system, and implementation plan for the measures, as well as establish institutional, staffing, and budgetary structures.
- The responsible body will assume the lead in contacting relevant ministries and agencies to secure personnel and budgets for gender and vulnerable group mainstreaming measures.
 The evaluation and monitoring system will be devised with the establishment of Key Performance Indicators (KPIs), and an overall plan will be developed with the agreement of relevant institutions and stakeholders.
- Under the guidance of the responsible body, execute low-budget, feasible, and high-priority initiatives, including advocacy and awareness activities, and the establishment of monitoring systems.

Term 2 (2027-2030):

- The mechanisms and guidelines are to be utilised in actual implementation of the mainstreaming measures, and by succeeding the improvement practices, the mainstreaming initiative is to be reinforced.
- The responsible body, in collaboration with relevant agencies and operators, plans and implements measures such as improving the working environment, upgrading vehicles, upgrading facilities, and providing training.
- Budgets are also secured for measures in each agency, and guidelines are established and implemented for the development of new infrastructure.
- Trained crews provide new services, and pilot facility and vehicle enhancements are implemented.

Term 3 (2031-2035):

- The system for promoting gender and vulnerable group mainstreaming measures, including the responsible body, is stabilised.
- The infrastructure standards continue to improve, and the foundations for promoting facility and vehicle improvement are steadily established. Bus operators are also beginning to implement measures to enhance the working environment.
- The integration of gender and vulnerable group mainstreaming into both services and systems is beginning to take hold, and key performance indicators (KPIs) at the service level are beginning to rise.

Section 2: Packages 1 to 4

In this section, the components of Packages 1 to 4, for responsible body establishment and implementation environment development, are to be explained.

(1) Package 1: Institution

Initially, it is imperative that the responsible body for mainstreaming be evaluated and agreed upon by the appropriate institutions in terms of its responsibilities, duties, and activities. The proposed responsible body and the implementation structure are expressed in Figure 5.2. Gender and Social Inclusion Mainstreaming (GSIM) — Roadmap Implementation Team (hereinafter referred to as the 'Responsible Body (RB)') will be established and coordinated by NaMATA. NGEC is expected to provide technical advice to the Responsible Body.

One of the important roles of the Responsible Body are to take the lead for the measure packages and provide the appropriate advice, coordination, and advocacy to transport-related authorities to implement this Roadmap. The Responsible Body can also provide coordination, guidance, recommendations, and actions in various measure packages, such as awareness and training, to transportation-related agencies, operators, crew, passengers, and the general public. In addition, the Responsible Body will monitor and assess the overall gender and vulnerable group mainstreaming efforts.

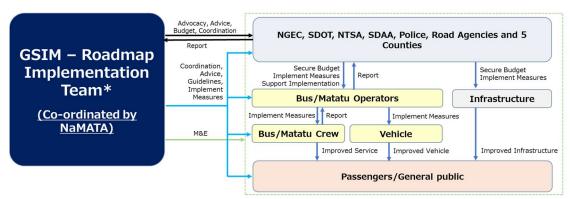


Figure 5.2 Proposed Implementation Structure

To establish the Responsible Body, it requires a basis in the policy framework. One potential step to justify the establishment of the Responsible Body is that the gender and vulnerable group mainstreaming, or inclusion initiative is to be clearly incorporated in high-level policy documents such as the public transportation strategy, or the NaMATA corporate strategy. Another step is to review administrative orders and examine the legal status of the Responsible Body, and its relationship with the relevant authorities so that the possible influence of the Responsible Body over the policies and projects in the transport-related agencies is justified. Simultaneously, the Responsible Body will secure the necessary financial and human resources to implement the mainstreaming plan by obtaining approval from the responsible parties for the formulated overall plan for gender and vulnerable groups.

Additionally, the Responsible Body conducts daily technical advice sessions for all transport-related agencies and convenes regular meetings with stakeholders to deliberate on mainstreaming measures and their implementation.

Table 5.1 Actions for Institution Package

Antino	Decreasible Institution			Tern	n (T)		
Actions	Responsible Institution	Т	1	Т	2	Т	3
Institution							
Examine responsibility and activities of the responsible body (RB)	NaMATA*, NGEC*, the Transport-related Agencies (TAs)	*	*				
Verify consistency with policy framework	NaMATA*	*	*				
Examine legal status of the RB	NaMATA*, NGEC, TAs	*	*				
Obtain official approval on the RB	NaMATA*	*	*				
Secure budget and human resource from relevant institutions	NaMATA*	*	*				
Create ministerial order on the legal basis of the responsible body	NaMATA*, TAs	*	*				
Examine activities and plan on budget and human resource	Responsible Body (RB)*	*	*				
Secure budget and human resource for measures	Responsible Body (RB)*, TAs		*	*	*	*	*
Examine relevant documents	RB*		*	*	*	*	*
Hold meetings for discussing measure implementation structure	RB*, TAs			*	*	*	*
Hold meetings for gender mainstreaming measures	RB*, TAs			*	*	*	*
Provide relevant advice for gender mainstreaming measures	RB*			*	*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (2) Definition iii) Transport-related agencies

(2) Package 2: Plan, Monitoring and Evaluation

The overall plan itself is recommended to be developed based on this Roadmap. And the overall plan must be in line with the policy framework, including the NaMATA corporate strategy. And the initial step in the development of a feasible and effective mainstreaming plan is to evaluate the current situation and collect baseline data. For this purpose, the recommended guideline is summarised as 'Gender Indicator' by the International Transport Forum¹. The plan should also include specific and measurable indicators to monitor the implementation of the mainstreaming activities and be discussed among the stakeholders. The objective of setting indicators is to establish methods of evaluating the mainstreaming implementation in the relevant government institutions. And in the process of developing the overall plan, the opinions and expectations of the relevant stakeholders should be incorporated as much as possible, and the series of meetings to develop the plan are anticipated. After these democratic processes, the plan shall be reviewed by the responsible government agencies, and be officially approved as a policy document.

Additionally, in this package, by setting the Key Performance Indicators (KPIs) and utilising the indicators, a surveillance and evaluation system is necessary to ensure that the mainstreaming plan is implemented in an effective and efficient manner. The auditing system is also expected to operate and conduct periodical monitoring, evaluation, and audits to ensure the consistent implementation of the plan.

Table 5.2 Actions for Plan, Monitoring and Evaluation Package

	·	•	_			
۸۵	tions	Decreasible Institution			Term (T)	
AC	LIOIIS	Responsible Institution		1	T2	T3
Pla	n, Monitoring and Evaluation					
	Examine and collect transportation related data and statistics	Responsible Body (RB)*	*	*		
	Analyse current state and create baseline data	RB*	*	*		
	Create an overall plan with measurable target indicators	RB*, Transport-related Agencies (TAs)	*	*		

¹ https://www.itf-oecd.org/gender-indicators

-

Hold meetings for discussing an overall plan for mainstreaming	RB*, TAs, Operators	*	*				
Obtain official approval of the overall plan	RB*		*				
Set specific indicators and measures	RB*		*				
Establish monitoring and evaluation system	RB*		*				
Establish auditing system	RB*		*				
Perform monitoring and evaluation and audit	RB*			*	*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

(3) Package 3: Guideline

In order to ensure that the mainstreaming process is conducted with a reasonable quality standard and to provide technical advice to the transport-related agencies, it is necessary to establish guidelines for relevant technical support.

The guidelines to be created are as follows:

- Service level standard
- Crew training
- Fare
- Facility and vehicle
- Work environment

Additionally, in order to ensure that the guidelines are consistent with the operational reality, it is necessary to conduct meetings with stakeholders to gather their feedback and requirements. Furthermore, it is recommended that a compliance mechanism be examined to ensure that the guidelines are implemented in a reliable and effective manner during the implementation of the mainstreaming measures. Any authorised institutions must officially approve and establish the guidelines. The guidelines are to be implemented in the public transportation services and system after the requisite public notification. The responsibility of the Responsible Body is to effectively promote and notify of the guidelines, convey them to the public transportation system, and supervise their application and implementation.

Table 5.3 Actions for Guideline Package

	U						
Actions	Dosnonsible Institution	Term (T)					
ACTIONS	Responsible Institution	T1		T2		T.	3
Guideline							
Analyse current state from 5 perspectives*		*	*				
Examine standards for 5 perspectives*		*	*				
Hold stakeholder meetings about the standards	Responsible Body (RB)*, NGEC*, Transport-related		*				
Examine compliance mechanism	Agencies (TAs)		*				
Set standards	· Beneres (·· ····)		*	*			
Notice the standards to the relevant stakeholders				*	*		
Promote utilisation of the standards	RB*			*	*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

(4) Package 4: Awareness and Advocacy

The effective and efficient implementation of mainstreaming measures is contingent upon awareness and advocacy. The first step of this package can be to have an influence over the existing policy framework of public transportation policy and to incorporate gender and vulnerable group mainstreaming or inclusiveness initiative into the policy documents such as the NaMATA corporate strategy so that this mainstreaming initiative has a reasonable basis in the official policy framework.

After the initiative above, other awareness and advocacy activities can be implemented with

setting the potential subjects as citizens and passengers, operators' employees, management positions of operators, specific interest groups of gender and vulnerable groups, government bodies, and relevant political groups. The communication and its objective per se vary depending on the subject. The primary objective of raising awareness among citizens, passengers, operators' employees, and management positions is to encourage the appropriate use of public transportation services in public spaces, free from harassment and violence, and understanding of female workforce in the sector. Additionally, it is important to recognise the unique needs and considerations of female and vulnerable passengers and workers in public transportation services and workplaces.

Moreover, the sustainable implementation of mainstreaming is contingent upon the political support of citizens, specific interest groups, relevant stakeholders, particularly government bodies, and political support. Therefore, the advocacy and awareness on the importance of mainstreaming initiatives are also anticipated.

Lastly, to capture the voices of the important stakeholders, females and persons with disabilities, and also to sustain consistent support of these social groups, the formulation of platforms or associations is also expected. The function of these platforms and associations is not limited to the awareness and advocacy activities, but also includes any advice to measures in the other packages.

Table 5.4 Actions for Awareness and Advocacy Package

		,-					
Actions	Responsible Institution			Tern	n (T)		
Actions	responsible institution	T1		Т	2	Т	3
Awareness and Advocacy							
Advocacy to incorporate mainstreaming initiative into the existing policy documents	Responsible Body (RB)*, NaMATA*, NGEC*	*					
Plan awareness and advocacy activities	Responsible Body (RB)*, NaMATA*, NGEC*, Transport-related Agencies (TAs)	*	*				
Advocate gender mainstreaming and inclusive transport to government body	RB*, NaMATA*, NGEC	*	*	*	*	*	*
Secure budget in relevant institutions for awareness activities	RB*, TAs	*	*				
Conduct awareness activities to citizens and passengers	RB*, NaMATA*, NGEC*		*	*	*	*	*
Conduct awareness activities to operators' employees	RB*, NaMATA*		*	*	*	*	*
Conduct awareness activities to management positions of operators	RB*, NaMATA*		*	*	*	*	*
Form platform or association of female and PWD employees	RB*, NaMATA*, NGEC*			*			
Conduct awareness activities with the members of the platform or association of female and PWD employees	RB*, NaMATA*, NGEC*				*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

Section 3: Packages 5 and 6

(1) Package 5: Service improvement

The service improvement package comprises four measures: crew service and driving improvement, communication, fare, and operation. The development of this measure package is to be consistent with the development of the guidelines in Measure Package 3: Guideline.

First, in order to enhance crew service and driving performance, the training for conductors and drivers is to be implemented in accordance with the service level guideline and crew training manual. The establishment of a platform for the discussion of the training plan and implementation is essential, as collaboration and cooperation with the operators are essential throughout the process. The incentive and implementation mechanism must be meticulously crafted in accordance with the previous training initiative as practiced for developing a training manual in the Route 111 Pilot Project of the JICA Capacity Building Project. (ref.



Figure 5.3 Training Manual for Bus Crew

Figure 5.3).

Second, communication involves the provision of adequate information about public transportation services, including their fares and operating hours. The first step of information provision can be the information board at bus stops installed in the Route 111 Pilot Project of the JICA Capacity Building Project. (ref. Figure 5.4) Since the wheelchair users have a lower visual perspective, therefore, the location or the height of the board should be carefully examined. A content menu can be used to guide individuals with visual and hearing impairments. Moreover, tactile paving protects for visually-impaired people and recorded audio guidance at bus stops for hearing-impaired people are examples of mainstreaming measures. The signage designs also promote inclusiveness.



Figure 5.4 Information Board at Bus Stops

Third, the primary action related to the fare is to investigate the unique fare structure for minors and persons with disabilities. The fare scheme must be meticulously devised, as it is directly related to the business of operators. In some nations, disabled and elderly people receive discounted fares, the government subsidises operators for the discounted fares, and the government provides free bus tickets.

Finally, the accessibility of women and vulnerable groups might be enhanced through operational improvements. Punctuality and reliability are vital in operations. Women in the Nairobi Metropolitan Area have highlighted their concerns regarding timeliness. Doubts concerning safety are also prevalent. These risks can be addressed by scheduling operations and conducting frequent vehicle inspections. However, this measure is not a gender and vulnerable group mainstreaming-specific perspective, but rather the perspective of the public transportation system as a whole, and as far as we know, there is little mention of it in mainstreaming measures.

Table 5.5 Actions for Service Improvement Package

Crew Service and Driving Improvement Set service standard and crew and drivers training guideline Establish a platform with bus operators Plan and examine training activities Create training manuals with reference to the service standard guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement Communication	onsible Institution onsible Body (RB)*, ATA*, NTSA*, NGEC ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, ATA*, NTSA*, ators, RB NaMATA, NTSA, C, Operators	* *	* * * * * * *	T	2	Т	3
Set service standard and crew and drivers training guideline Responsion NaMA Establish a platform with bus operators Plan and examine training activities Create training manuals with reference to the service standard guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement Responsion NaMA Opera Responsion NaMA Ope	ATA*, NTSA*, NGEC ATA*, NTSA*, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*,	*	* * *				
Establish a platform with bus operators Plan and examine training activities Create training manuals with reference to the service standard guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement MaMA Opera RB*, N NGEC,	ATA*, NTSA*, NGEC ATA*, NTSA*, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*,	*	* * *				
Plan and examine training activities Create training manuals with reference to the service standard guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement NaMA Opera RB*, N NGEC,	ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, ators, RB ATA*, NTSA*, ators, RB ators, RB ators*, RB	*	*				
Create training manuals with reference to the service standard guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement Opera RB*, N NGEC,	ators, RB ATA*, NTSA*, NGEC, ators, RB ATA*, NTSA*, ators, RB ATA*, NTSA*, ators, RB ators, RB ators, RB		*				
guideline Secure budget and coordinate with relevant organizations Implement training activities Provide new service Monitor service improvement Communication Opera	ators, RB ATA*, NTSA*, ators, RB ATA*, NTSA*, ators, RB ators*, RB NaMATA, NTSA,						
Secure budget and coordinate with relevant organizations Opera Implement training activities Provide new service Monitor service improvement Opera RB*, N NGEC,	ators, RB ATA*, NTSA*, ators, RB ators*, RB NaMATA, NTSA,		*				
Provide new service Opera Monitor service improvement RB*, N Ommunication	ators, RB ators*, RB NaMATA, NTSA,		*				
Monitor service improvement RB*, N NGEC,	NaMATA, NTSA,			×			
Monitor service improvement NGEC,	· · · · · ·			*	*	*	4
1	, 0 pc. aco. s			*	*	*	¥
Cat coming standard and facility and abids at 11 to 12 to 15							
	onsible Body (RB)*, ATA*, NTSA*, NGEC	*	*				
Plan information provision measures Count Agence	ATA*, NTSA*, ties*, Road cies*, Responsible (RB), NGEC, RB	*	*				
count	ATA*, NTSA*, ties*, Road cies*, RB	*					
Design subsidy system and enforcement mechanism Count	ATA*, NTSA*, ties*, Road cies*, RB	*		*	*		
Secure budget and coordinate with relevant organizations Count	ATA*, NTSA*, ties*, Road cies*, RB		*	*			
Implement measures Count	ATA*, NTSA*, ties*, Road cies*, RB			*	*	*	¥
Provide improved information system by operators Opera	ators*, RB			*	*	*	7
Monitor communication improvement Count	NaMATA, NTSA, ties, Road Agencies, c, Operators			*	*	*	¥
are							
	onsible Body (RB)*, ATA, NTSA, Counties	*	*				
Examine and set fare level	ATA*, NTSA*, ties, Operators, RB	*	*	*			
Enforce standard fare system	ATA*, NTSA*, ties, RB			*	*	*	7
Plan a new tare collection system (cashless nayment system)	ATA*, NTSA*, ties, Operators, RB	* *		*			
Secure budget and coordinate with relevant organizations	ATA*, NTSA*, ties, RB	* *					
Establish new fare collection system (including crew frainings)	ATA*, NTSA*, ties, RB				*	*	7
Implement new fare collection system Opera	ators*, RB				*	*	7
Monitor fare improvement	NaMATA, NTSA, ties, Operators	•				*	¥
peration							

Ī	and monitoring system					
	Secure budget and coordinate with relevant organizations	NaMATA*, NTSA*	*	*	*	*
Ī	Enforce standards and activate monitoring system	NaMATA*, NTSA*		*	*	*
Ī	Implement new operation system	Operators*		*	*	*
	Monitor operation	NaMATA*, NTSA*		*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

(2) Package 6: Infrastructure and vehicle improvement

Infrastructure and vehicle enhancements are rather hardware enhancements. Infrastructure encompasses walkways, bus stops, and other related facilities.

The steps must be removed around the bus stops and terminus and on the walkways. And as mentioned in Service Improvement Package, the tactile paving can be installed. However, considering the current road conditions in the Nairobi Metropolitan Area, the overall improvement of the sidewalks is required as a prerequisite for mainstreaming measures.

Inside the bus, the first steps would be to secure the priority seats inside the bus so that passengers in need can secure their seats. And in the long run, after the bus designs per se are drastically changed, there can be a method to secure a space for wheelchair users as shown in Figure 5.5. And non-step slopes can be a method for smoother boarding and alighting, however, considering the conditions and designs of existing vehicles, this method can be implemented in new design or new standard vehicles.





Source: Ministry of Land, Infrastructure, Transport and Tourism, Japan, Guideline for Barrier-free Vehicles, 2024

Figure 5.5 Space for Wheelchair Users inside Vehicle

It is difficult to enhance infrastructure and vehicles within a decade. The infrastructure and service standard should be established, and the newly constructed infrastructure and vehicles are required to adhere to the standard. Consequently, a gradual transition is anticipated.

In Japan, the introduction of accessible facilities at railway stations is monitored by identifying the number of stations that must be improved on a priority basis, depending on the number of passengers and tracking the state of the implementation of measures. Furthermore, modifications to bus stops and train stations do not improve accessibility, particularly for physically challenged people. Accessibility upgrades are required on adjacent roadways and throughout the region. There is a requirement for consistency in these situations.

Table 5.6 Actions for Infrastructure and Vehicle Improvement Package

	ctions Responsible Institution				Terr	n (T)		
Act	aons	Responsible Institution	1	1	Т	2	Т	3
Infi	rastructure (Walkway Improvement)							
	Set facility guideline	Responsible Body (RB)*, NaMATA, Road Agencies, Counties, NGEC, RB	*	*				
	Plan and design upgrading sidewalks and road crossing facilities with reference to the facility guideline	NaMATA*, Road Agencies*, Counties*, RB	*	*				
	Secure budget and coordinate with other relevant organisations	NaMATA*, Road Agencies*, Counties*, RB		*	*	*	*	*
	Implement planned upgrade of sidewalks	NaMATA*, Road Agencies*, Counties*, RB			*	*	*	*
	Monitor walkway improvement	RB*, NaMATA*, Road Agencies*, Counties*			*	*	*	*
Infi	rastructure (Bus Stop Improvement)							
	Examine/plan reorganising locations of bus stops	Responsible Body (RB)*, NaMATA*, Road Agencies*, Counties*, NGEC	*	*				
	Secure budget and coordinate with other relevant organisations Agencies*, Counties*			*	*	*	*	*
	Implement planned reorganisation of bus stops	tion of bus stops NaMATA*, Road Agencies*, Counties*			*	*	*	*
	Monitor bus stop improvement RB*, NaMATA*, Road Agencies*, Counties*				*	*	*	*
Infi	rastructure (Bus Facility Improvement)							
	Set facility guideline	Responsible Body (RB)*, NaMATA*, Road Agencies*, Counties*, NGEC	*	*				
	Plan and design facilities at bus stops with reference to the guideline	NaMATA*, Road Agencies*, Counties*, RB	*	*				
	Secure budget and coordinate with other relevant organisations	NaMATA*, Road Agencies*, Counties*, RB		*	*	*	*	*
	Implement upgrade of facilities at bus stops	NaMATA*, Road Agencies*, Counties*, RB			*	*	*	*
	Monitor bus facility improvement	RB*, NaMATA*, Road Agencies*, Counties*			*	*	*	*
Vel	nicle Improvement							
	Set vehicle guideline	Responsible Body (RB)*, NaMATA*, NTSA*, NGEC	*	*				
	Examine vehicle improvement measures for operators NaMATA*, NTSA*, RB		*	*				
	Formulate a platform for vehicle improvement with bus operators NaMATA*, NTSA*, RE		*	*				
	Design vehicle improvement subsidy system and enforcement mechanism	NaMATA*, NTSA*, RB		*	*			
	Secure budget and coordinate with other relevant organisations	NaMATA*, NTSA*, BR			*	*	*	*
	Facilitate operators to introduce the new-standard vehicles	NaMATA*, NTSA*				*	*	*
		NaMATA*, NTSA* Operators* RB*, NaMATA*, NTSA*				*	*	*

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

Section 4: Package 7

(1) Package 7: Work and labour improvement

Package 7 comprises seven measures of leadership and empowerment, employment and working condition improvement, physical environment improvement, training and development, business development, awareness and advocacy, and measurement and report. The decision-making role and leadership of women and vulnerable groups in the transport sector are strengthened by leadership and empowerment. Additionally, the procurement process and incentives are used to promote transport-related businesses led by women and vulnerable groups.

The enhancement of employment and working conditions promotes the participation of female and vulnerable group workers in the labour force. The introduction of quotas and the enhancement of outreach to social groups are methods to promote labour market participation. The installation of sanitation rooms and mother rooms is a component of the physical environment enhancement for female employees, making the work environment friendly to all employees.

Training and capacity development are essential for the advancement of human resources, and all social groups are guaranteed equal access to these opportunities. There may be disparities in employment status based on gender and disability status, which means that the disparity in training and development opportunities should be diminished or reduced.

Business development aims to integrate the perspectives of a variety of social groups in order to enhance the inclusivity of public transit services. This principle is applicable to all stages of service development, including fare setting.

The reduction of social stigma on the participation of female and vulnerable groups in the labour force is also facilitated by awareness and advocacy, which fosters the understanding and support of stakeholders for work and labour reform.

Finally, measurement and reporting is a mechanism that is designed to monitor and assess the aforementioned measures and their effects on the bus operators and transport-related government institutions. It also includes the responsibility to submit the status to the appropriate entity.

Table 5.7 Actions for Work and Labour Improvement Package

0		Danamaikla lastitutian			Tern	า (T)			
ACT	ons	Responsible Institution	Т	1	T	2	Т	3	
Lea	Leadership and Empowerment								
	Examine measures for female-led businesses	Responsible Body (RB)*, NaMATA*, NGEC, Transport-related Agencies (TAs)	*	*	*				
	Examine support measures for female leaders in transport industry	NaMATA*, TAs, RB				*	*	*	
	Secure budget and coordinate with other relevant organizations NaMATA*, TAs, RB			*	*	*	*	*	
	Conduct promotion measures	NaMATA*, TAs, Operators, RB			*	*	*	*	
	Implement support measures for female leaders	NaMATA*, TAs, Operators, RB					*	*	
	Monitor leadership and empowerment	RB*, NaMATA*, TAs					*	*	
Em	ployment and Working Condition Improvement								
	Set guidelines and plans for employment and working condition improvement	Responsible Body (RB)*, NaMATA*, NTSA*, Counties*, NGEC	*	*					
	Secure budget and coordinate with other relevant organizations	NaMATA*, NTSA*, Counties*		*	*	*	*	*	
	Encourage an improved recruitment process of crew	NaMATA*, NTSA*,			*	*			

		Ca*						
		Counties* NaMATA*, NTSA*,						
	Encourage recruitment quotas recommendation for female	Counties*			*	*		
	Enforce operators to conclude employment contracts with crew	NaMATA*, NTSA*, Counties*				*	*	*
	Encourage operators to set code of conduct, policy and consultation/complaint system against harassment.	NaMATA*, NTSA*, Counties*			* *			*
	Implement working condition improvement measures	Operators				*	*	*
	Monitor condition improvement	RB*, NaMATA*, NTSA*, Counties*				*	*	
Phy	vsical Environment Improvement							
,	Examine measures to improve safety and health	Responsible Body (RB)*, NaMATA*, NTSA*, NGEC	*	*				
	Secure budget and coordinate with other relevant organizations	NaMATA*, NTSA*, Transport-related Agencies (TAs)		*	*	*	*	*
	Facilitate operators to improve physical improvement	NaMATA*, NTSA*				*	*	*
	Improve physical environment	Operators*, TAs*				*	*	*
	Monitor physical environment improvement	RB*, NaMATA*, NTSA*				*	*	*
Trai	ning and Development							
	Examine measures for operators to implement in-service trainings	Responsible Body (RB)*, NaMATA*, NTSA*, Counties*, NGEC	*	*				
	Secure budget and coordinate with other relevant organizations	NaMATA*, NTSA*, Counties*, RB		*	*			
	Facilitate operators to implement in-service trainings	NaMATA*, NTSA*, Counties*, RB			*	*	*	*
	Conduct trainings	Operators*, NaMATA, NTSA, Counties, RB			*	*	*	
	Monitor physical environment improvement	RB*, NaMATA*, NTSA*, Counties*			*	*	*	*
Bus	siness Development							
	Examine participation of females in business development	Responsible Body (RB)*, NaMATA*, NGEC	*	*	*			
	Promote participation of females in business development	NaMATA*, NGEC, RB			*	*	*	*
	Implement enterprise development participation measures	Operators*			*	*	*	*
	Monitor Business Development	RB*, NaMATA*, NGEC						
Aw	areness and Advocacy							
	Examine awareness activities on female work, workforce and harassment	Responsible Body (RB)*, NaMATA*, NTSA*, Counties*, NGEC	*	*				
	Secure budget for the awareness activities	NaMATA*, NTSA*, Counties*, RB	*	*	*	*	*	*
	Conduct awareness activities on females characteristics to senior executives of operators, relevant decision makers	NaMATA*, NTSA*, Counties*, RB			*	*	*	*
	Monitor awareness and advocacy	RB, NaMATA, NTSA, Counties, NGEC						
Me	asurement and report							
	Design reporting mechanism on operators' initiatives and measures	Responsible Body (RB)*, NaMATA, NTSA, Counties, NGEC	*	*				
	Set indicators and measurement for gender mainstreaming policies	RB*, NaMATA*, NGEC, Transport-related Agencies (TAs), operators		*	*			
	Set legal basis for reporting mechanism	NaMATA*, RB*, NGEC, TAs			*	*		
	Activate reporting mechanism	NaMATA*, RB*, NGEC				*	*	*
	Follow reporting mechanism	Operators*, TAs*						

NaMATA*, RB*, NGEC ★ ★ ★

*: Main Responsible Institution, T1: 2025-2026, T2: 2027-2030, T3: 2031-2035 Confer: Chapter 1 Section 3 (3) Definition iii) Transport-related agencies

Chapter 6 Short-term Actions

Section 1: JICA Capacity Building Project Activities

In the JICA Capacity Building Project, JICA Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area (2022-2025), several activities were implemented as the short-term actions of this Roadmap. For each measure package, the activities and achievements are summarised as follows:

(1) Package 1: Institution

WG5, the parent organisation of the Responsible Body (RB), established a group to advance activities related to gender and inclusive transport mainstreaming. WG 5, which includes NaMATA, NGEC, and other organisations, is responsible for the promotion of planning, training manuals, and awareness activities. In addition, WG5 will evaluate budgets, personnel, and institutions.

(2) Package 2: Plan, Monitoring and Evaluation

In order to discern the current baseline, WG5 implemented a current situation survey. A Roadmap will be established as the foundation for the comprehensive plan in conjunction with a variety of other surveys and literature. Simultaneously, the establishment of a monitoring and evaluation system was achieved through the examination of evaluation indicators and monitoring systems.

(3) Package 3: Guideline

WG5 conducted a survey of the current conditions and organised the points of consideration for the preparation of the corresponding guidelines for service levels, training, facilities, vehicles, and tariffs.

(4) Package 4: Awareness and Advocacy

WG5 implemented awareness-raising initiatives for passengers and citizens regarding the importance of respecting vulnerable road users and preventing harassment. Simultaneously, the campaign was executed in conjunction with pertinent organisations such as UNFPA, boda-boda associations, and bus operators to increase awareness of gender and vulnerable groups mainstreaming.

(5) Package 5: Service Improvement

WG5 conducted a survey to assess the current state of affairs, identify service issues, and, in the Route 111 Pilot Project, provide personnel training on enhancing hospitality for women and vulnerable group passengers, as well as drivers' training for safer operation. Additionally, measures to enhance information provision were implemented.

(6) Package 6: Infrastructure and Vehicle Improvement

In the Route 111 Pilot Project activities, WG5 implemented measures such as bus stop maintenance and information provision, identified issues with facilities and vehicles, and conducted a survey of current conditions.

(7) Package 7: Work and Labour Improvement

The work shift model was designed and implemented in the Route 111 Pilot Project to make the working environment friendly to everyone.

Section 2: Route 111 Pilot Project Activities

It is worth noting that the JICA Capacity Building Project Team implemented the most critical and effective measures for enhancing satisfaction and eliminating inequality in the Route 111 Pilot Project on Ngong Road, as determined by the current state analysis from the passengers' perspective.

(1) Outline of Route 111 Pilot Project

Between April 3 and May 2, 2025, the Route 111 Pilot Project was implemented on Ngong Road Route 111 for a period of one month. On weekdays, the bus services were jointly operated by 10 operators from 4:00 am to 10:00 pm, and on weekends from 6:00 am to 8:00 pm. The total length of the pilot project operation was 22.2 km from Central Business District to Ngong Terminus. The Route 111 Pilot Project involved a total of 80 drivers, 80 conductors, and 40 stage supervisors, with 40 vehicles being utilised.

(2) Mainstreaming Features of Route 111 Pilot Project

According to the surveys, the mainstreaming perspective of gender and vulnerable groups was integrated into the areas of fare, safety, harassment, facility, and communication. The Route 111 Pilot Project's identified issues and the solutions employed are illustrated in Figure 6.1.

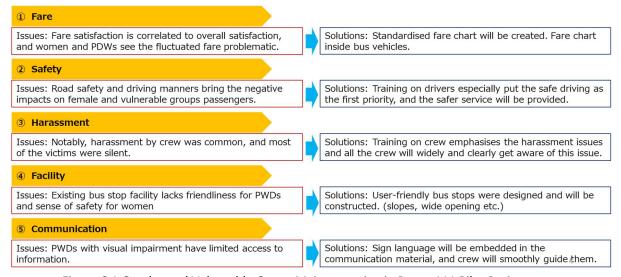


Figure 6.1 Gender and Vulnerable Group Mainstreaming in Route 111 Pilot Project

(3) Results of Route 111 Pilot Project

i) Implementation result

The designs and plans of the Route 111 Pilot Project are shown in Figure 6.1, and the actual implementation was as follows:

Fare: The fixed fare was nearly implemented. The conductors collected the fare below the fixed tariff in certain sections, despite the fact that the fare did not exceed the fixed fare. In general, the issue of fluctuating fares was resolved, and it can be concluded that the Route 111 Pilot Project users did not encounter inflated fares.

Table 6.1 Fare Chart

Station	Ngong Terminus	Karen	Lenana	Junction Mall	Prestige	KNH	CBD
Ngong Terminus	0	50	60	60	90	90	100
Karen	50	0	30	50	70	80	80
Lenana	60	30	0	30	70	70	80
Junction Mall	60	50	30	0	50	50	70
Prestige	90	70	70	50	0	50	50
KNH	90	80	80	50	50	0	50
CBD	100	80	80	70	50	50	0

Safety: The drivers were instructed in safe driving practices, and the feedback survey administered to the drivers and conductors revealed that 80% of the respondents (16 out of 20) reported that they were safer than they had been previously.



Figure 6.2 Training for Conductors, Drivers and Stage Managers

Harassment: The conductors and drivers were instructed on how to provide improved customer service. The posters for awareness were also affixed in each vehicle.



Figure 6.3 Harassment Awareness Poster

Facility: Bus stops with ramps and fewer steps were installed. Materials of the bus shelters gave a sense of security to the passengers.



Figure 6.4 Newly Installed Bus Shelter

Communication: The PIS board, which displayed the fare, timetable, and destination, was installed at the primary bus locations. Additionally, a content menu was developed and implemented to assist individuals with visual and auditory impairments.



Figure 6.5 Content Menu

ii) Survey result

Based on the passenger satisfaction survey, above-mentioned five perspectives were assessed. The passenger satisfaction survey was conducted from May 2 to 8, 2025, at the Prestige terminus and Ngong terminus on Route 111, Ngong Road, with a total sample of 2,442. The statistical analysis is not feasible due to the scarcity of individuals with visual and auditory impairments. Consequently, the following findings pertain mostly to the gender perspective.

In the Route 111 Pilot Project, the satisfaction level with overall quality reached 92.04% (95% Confidence Interval, 90.23% to 93.86%), whereas it was 65.78% (95% CI, 63.45% to 68.12%) among the ordinal bus service users.

When it comes to gender differences, no statistical difference was found between females and males. Among satisfaction with specific service features, female passengers observed an improvement in Route 111 Pilot Project information distribution, facility cleanliness, driving manners, and outside vehicle security. In the last study, the degree of satisfaction with punctuality and road safety varied by gender; however, no differences were found. Meanwhile, women's contentment with safety is statistically substantially related to their overall quality satisfaction.

However, the female response rate has consistently been lower, and it is expected that the proportion of female passengers is lower than that of male passengers.

iii) Evaluation

The evaluation of the Route 111 Pilot Project in terms of gender and vulnerable group mainstreaming can be summarised as below based on the five main features:

Fares: the introduction of fixed fares was viewed positively by the results of various feedback. However, under a variable pricing system, fares may be lower during off-peak hours than the current fixed fares, which would be unfavourable for users. In particular, with regard to women, it is known that off-peak hours are relatively more frequent than for men, and the design places a greater burden on women. In addition, for the physically challenged, it is generally the case that the fare of the accompanying person is not charged or is discounted, especially for the use of the physically challenged, and the introduction of discriminatory pricing is desirable.

Safety: regarding the handling of vulnerable road users, information boards for the visually impaired were prepared. Written communication and other forms of communication are considered to require a certain degree of skill, and the creation of information boards is considered to be a practical and effective measure to deal with this issue. Although this is a qualitative observation, it seems that regardless of the training, the overall trend is that crew members seem to share an awareness of supporting the physically challenged in some way. Although there may be many patterns of disability among the differently-abled, it would be desirable to have practical training on typical situations, such as wheelchair users, for example. In addition, more specific training on harassment of crew members and the establishment of a harassment response system are also required to deal with harassment, in addition to appropriate selection of people when hiring crew members, improved treatment of crew members and the creation of a quiet working environment.

Harassment: priority seating was displayed on posters, but was not clearly and effectively operational. Although social consensus on priority seating needs to be developed, pilot introduction of seat colouring and ongoing awareness-raising measures could be implemented. In addition, the improvement of convenience for women and the elderly through regular operation is considered to have had a certain degree of effect, in view of the higher satisfaction level of Availability in the passenger satisfaction results and the state of implementation.

Facility: during the bus stop design process, a design proposal was presented to enclose the waiting area in a semi-transparent material, but the policy of mainstreaming measures ensured an open design. Although the design is determined by a number of factors such as materials and cost, it can be seen as an example of a thorough implementation of a gender perspective. However, the installation of lighting and CCTV cameras was not included, and budget constraints limited the components that could be realised. Benchmarking of case studies and collection of good practices should be carried out, and guidelines should be developed for technical advice, such as design proposals according to the budget and the preparation of checklists when designing facilities.

Communication: a handful of disabled-friendly guidance methods were explored, such as the Kenyan side's ingenuity in realising information boards for the visually impaired. In addition, fares and timetables were clearly indicated, and the service was certainly user-friendly. However, as the information needs of the physically challenged have not been analysed in detail, feedback should be obtained through FGDs and other means, such as through the NGEC, to further improve the service.

Section 3: Identified Issues and Challenges through the JICA Capacity Building Project

The most important challenges overlap with those that drove the Roadmap's development: budget and personnel. In the JICA Capacity Building Project, awareness-raising activities were financed for mainstreaming, but no funding was set aside for mainstreaming-specific activities such as facility improvement. In facility improvement, the JICA Capacity Building Project was just advisory in character, and it was not necessarily financially handled; however, the budgetary treatment of mainstreaming in infrastructure and vehicle improvement should be clearly stated for the future execution of the Service Improvement measure package.

Furthermore, the decision-making process and decision-positioning were unclear in the JICA Capacity Building Project as a whole, and arrangements for approval and decision-making processes in the relevant authorities were not sufficiently developed. As a result, it was not able to undertake systematic and timely efforts in gender and vulnerable group mainstreaming; however, as far as possible, gender and vulnerable group mainstreaming perspectives were offered during the Route 111 Pilot Project preparation.

In addition, overall service and labour standards apply across the business, regardless of gender or disability. It would be ideal, in terms of effectiveness and efficiency, the gender and vulnerable group mainstreaming was implemented after industry targets and guidelines were established. It is not appropriate to discuss service levels and labour standards exclusively through the lens of gender and vulnerable group mainstreaming. However, from a mainstreaming standpoint, detailed findings on service and labour norms have been collected, and the Responsible Body for mainstreaming is expected to issue good suggestions.

The services given in the Route 111 Pilot Project are predicted to be somewhat effective in terms of increasing passenger satisfaction. On the other hand, these services have huge potentials of improvement from the passenger satisfaction survey and the current situation survey, and it is critical to determine how to make them feasible from a corporate and institutional perspective.

Lastly, there is certainly an opportunity for improvement in establishing relevant indicators. Currently, there is qualitative analysis and analysis of gender disparities in passenger satisfaction, but the initiative has yet to collect sufficient data on work and labour in particular. Based on basic data, the industry as a whole must gather basic data in order to conduct gender and vulnerable group mainstreaming assessments. Furthermore, while some findings in the qualitative survey appear to indicate disparities in passenger satisfaction, the passenger satisfaction survey has not yet sufficiently reached the point where statistically significant differences may be identified. Questionnaire items in passenger satisfaction surveys, as well as other surveys, should be enhanced to address the gender and vulnerable groups mainstreaming.

Chapter 7 Conclusion

As the term 'public' suggests, public transportation must be accessible to all. In particular, Kenya as a whole shares values of gender equality and inclusiveness, and additional efforts are necessary in public transportation. This roadmap was developed in the absence of any actors or intentions to promote gender and inclusive public transportation mainstreaming in this context.

The current state was analysed by the report, which examined the issues from the perspectives of the three actors that support the public transportation system: passengers, operators, and government, as well as the institutional situation, through existing research and new surveys. From the passengers' perspective, safety is a substantial issue, and it is evident that the attitude of crew, including harassment, is a high priority. It was demonstrated that effective measures are required, as the operators face numerous challenges, including a working environment that is far from satisfactory, a low ratio of female employees, and societal stigma against women employed in the bus sector. It has been demonstrated that measures are required to fully realise the efforts of government agencies, including the appointment of women to technical positions, the establishment of regulations regarding the proportion of women in decision-making, and the establishment of mechanisms to address harassment. Additionally, it was demonstrated that the mainstreaming of persons with disabilities has not made significant progress. To deal with these issues, this Roadmap was drafted in three policy areas to resolve these issues: systems, services, and labour.

In light of the aforementioned situation, the time axis for promoting mainstreaming was established as 2035, and policy goals were established for each policy area. The engagement of all stakeholders will ensure the effective and efficient implementation of gender and vulnerable group mainstreaming measures in systems. The passenger satisfaction level will be satisfactory for all social categories in the services. The labour market will be devoid of impediments to the participation of targeted social groups, and the satisfaction level of workers will be satisfactory across all social groups.

Seven policy bundles were proposed to accomplish the aforementioned objectives. Package 1: Institution, Package 2: Monitoring, Evaluation, and Planning, Package 3: Guideline, Package 4: Awareness and Advocacy, Package 5: Service Improvement, Package 6: Facility and Vehicle Improvement, and Package 7: Work and Labour Improvement. Specific activities were delineated for each bundle, and a responsible agency and implementation timeline were suggested.

While summarising the initiatives of each package, we assessed the efficacy of the Route 111 Pilot Project for the JICA Capacity Building Project, which is the initial action of the Roadmap. The results per se were almost as the anticipated results from the passenger satisfaction survey and current situation survey, however, the most important thing is how to implement the measures in a sustainable manner.

The Roadmap, as previously indicated, illustrates the general objectives and implementation image of mainstreaming inclusive buses and matatus services in public transportation, as a consensus of the relevant organisations, following discussions with the relevant organisations. This Roadmap is solely a plan and lacks legal, financial, or personnel support. Thus, for its implementation, following steps in NaMATA are required:

- The objectives, policies, and goals for inclusive public transportation outlined in this Roadmap will be incorporated into NaMATA's strategy documents.
- A Responsible Body will be established, with the required staff and budgets assigned for its tasks.
- Policy documents for inclusive public transportation based on this Roadmap will be developed in consultation with relevant institutions.

Following that, it is envisaged that this Roadmap will serve as an invaluable resource for future policy development and implementation.

References

- World Economic Forum, 2024, Global Gender Gap 2024 Insight Report June 2024. Geneva, Switzerland.
- JICA 2023, Reference Material for Gender Mainstreaming in Private Sector Development
- ECOSOC (1997/2), Coordination of the Policies and Activities of the Specialized Agencies and Other Bodies of the United Nations System
- World Bank 2020, Gender in Urban Transport in Nairobi, Kenya: Volume 1. Mobility.

II . Handover Equipment and Goods List

CERTIFICATE OF HANDOVER

To: JICA Kenya Office

Re: The Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area

This certificate of handover is to certify that the equipment in the attached list, which had been utilized for the The Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area in Kenya, have been handed over properly to the Nairobi Metropolitan Area Transport Authority (NaMATA), as of 31st July 2025.

Attached: List of Equipment

31st July 2025

(Signature)

Eng. Francis Gitau Director General

Nairobi Metropolitan Area Transport

Authority (NaMATA)

For witness

(Signature) Mr. Michimasa Takagi

Chief Advisor, JICA Expert Team

(Attachment)

List of Equipment

#	Item	Quantity	Place of Handover
1	Laptop (HP Laptop Model 14- cf2224nia with Microsoft Office Pro 2021)	1	Prism Tower 31st Floor
2	Printing Machine (Canon ImageRUNNER C3226i)	1	JET Project Office, NaMATA

CERTIFICATE OF HANDOVER

To: JICA Kenya Office

Re: The Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area

This certificate of handover is to certify that the software in the attached list, which had been utilized for the Project for Capacity Building for Bus Operation Policy and Management in Nairobi Metropolitan Area in Kenya, have been handed over properly to the Nairobi Metropolitan Area Transport Authority (NaMATA), as of August 13, 2025.

Attached: List of Software

August 13, 2025

(Signature)

CS Connie Ngachu

Corporation Secretary and Director,

Legal services

Nairobi Metropolitan Area Transport

Authority (NaMATA)

For witness

(Signature)

Mr. Ken Nishino Deputy Team Leader,

JICA Expert Team

(Attachment)

List of Equipment

#	Item	Quantity	Place of Handover
1	STRADA Ver4.0	3	Prism Tower 31st Floor, NaMATA office

Goods List

Item	Purchase Date	Quantity	Unit Price	Handover / Disposal	Need for Handover Confirmation
Laptop	2022-Q4	1	150,000 yen or more but less than 200,000 yen	Handover to NaMATA	Necessary
Printing Machine	2022-Q4	1	200,000 yen or more	Handover to NaMATA	Necessary
STRADA Ver. 4.0	2023-Q4	3	200,000 yen or more	Handover to NaMATA	Necessary
Smart TV (including stand)	2022-Q4	1	50,000 yen or more but less than 100,000 yen	Handover to NaMATA	Unnecessary
Projector	2022-Q4	1	50,000 yen or more but less than 100,000 yen	Handover to NaMATA	Unnecessary
Desk	2022-Q4	12	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Meeting desk	2022-Q4	1	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Chair	2022-Q4	19	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Lockers	2022-Q4	2	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Shelves	2022-Q4	2	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Hallstand	2022-Q4	1	Less than 10,000 yen	Handover to NaMATA	Unnecessary
WiFi rooters	2022-Q4	2	Less than 10,000 yen	Handover to NaMATA	Unnecessary
Web camera	2022-Q4	1	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Speaker	2022-Q4	1	10,000 yen or more but less than 50,000 yen	Handover to NaMATA	Unnecessary
Phone microphone for camera	2022-Q4	1	Less than 10,000 yen	Handover to NaMATA	Unnecessary
White board	2022-Q4	1	Less than 10,000 yen	Handover to NaMATA	Unnecessary
Banners	2023-Q4	2	10,000 yen or more but less than 50,000 yen	Disposed	Unnecessary