

APPENDIX 15

EXPECTED ENVIRONMENTAL IMPACTS OF THE MASTER PLAN

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15.1 PHOTOGRAPHS OF THE MISSING LINKS



Missing Link No.1: At Ngara Road to Nairobi River, the road reserves are occupied by a large number of kiosks.



Missing Link No.1: At River Road, the road reserves are occupied for cars and garages.



Missing Link No.1: At mid point, it goes across heavily occupied Nairobi River side.



Missing Link No.1: At mid point, road reserve is heavily occupied.



Missing Link No.2: Gardening area of the local residence, including Bangladesh's Chancellery, occupy the road reserve.



Missing Link No.2: At the exit, local residents cultivate maize in the road reserve.



Missing Link No.3: At the bottom of the road where a few temporary garages occupy the road reserve.



Missing Link No.3: A few kiosks occupy the area near Westland.



Missing Link No.4: At the northern end of Mpaka Road, a few kiosks occupy the road reserve.



Missing Link No.4: At the southern end of Mpaka Road, a school occupy the road reserve. Outside the school kiosks also occupy the road.



Missing Link No.5: Near Juja Road, a lot of kiosks occupy the road reserve.



Mission Link No.5: From north to south, large part of the road reserve is occupied by kiosks.



Missing Link No.6: At Mandera Road, road reserve is not occupied.



Missing Link No.6: At the mid point road reserve is not occupied.



Missing Link No.7: View from Olenguruone Ave. to Gatundu Road. A few gardening areas occupy the road reserve.



Missing Link No.7: From Mwingi Road to Denis Pritt Road - More than 70 units temporary structures are in the road reserve in this section.



Missing Link No.7: A few temporary structures occupy at this section of Gatundu Road.



Missing Link No.7: A few trees have been planted within the road reserve at Lenana Road entrance.



Missing Link No.8: At Nyerere Street, road reserve is used as parking area. Slum area developed in the area is not on the road reserve.



Missing Link No.8: At the Statehouse Road, road reserve is not occupied.



Missing Link No.9: At Denis Prit Road, gardening occupy the road reserve.



Missing Link No.9: At mid point, large trees and temporary housing and kiosks occupy the road reserve.



Missing Link No.10: A few temporary structures occupy at Enterprise Road entrance.



Missing Link No.10: At mid point, a few temporary structures began occupying the road reserve.



Missing Link No.11: A large number of temporary structures occupy the road reserve.



Missing Link No.11: A large number of temporary structures occupy the road reserve.



Missing Link No.12: At the intersection of Southern Bypass, in South Lands Estate, the road reserve ends. The road goes through Kibera's Makina Estate.



Missing Link No.12: At the section near Ngong Road, a largenumber of kiosks and venders occupy the road reserve.



Missing Link No.13: Both sides of the road are occupied by kiosks and vendors.



Missing Link No.13: Northern end of the road goes through farming area but road reserve is not occupied.



Missing Link 14: No encroachment of people in the road reserve.



Missing Link 14: No encroachment of people in the road reserve (viewed from the other end).



Missing Link No.15: No occupation of the road reserve at mid point.



Missing Link No.15: Occupation of the road reserve with farming during the rainy season at mid point.



Missing Link No.15: Occupation of the road reserve with gardening and temporary housing units or kiosk.



Missing Link No.15: Occupation of the road reserve with gardening and temporary kiosk at Peponi Road entrance.



Missing Link No.15: Encroachment of the local residents into the railway reserve near Mbagathi Way.

15.2 ENVIRONMENTAL IMPACTS OF MISSING LINK CONSTRUCTION WORKS, INTERSECTION IMPROVEMENT, ROAD IMPROVEMENT AND ON-MOTORIZED TRANSPORTATION TRAFFIC CORRIDORS

TABLE 15.2-1 (1/2) ENVIRONMENTAL IMPACTS OF MISSING LINK CONSTRUCTION WORKS

Type	Code	Name of Road/Junction	Agency	Road Length (km)	Type of Cross Section	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Level of Impact	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
Missing Links (Including Public & Non-Motorized Transport Facilities)	M-1	Missing Link No.1 (River Rd. to Ngina Rd.)	MoLG /NCC	0.65	Single	Including grade separation at Kinyaga Rd. and a bridge across Nairobi River.	A	There are 250 kiosk/slum units appears to be occupying the road reserve.	D	No significant natural environment is affected other than a few acacia trees grown in the side of the road reserve.	A	Air pollution and noise will increase due to increased traffic.
	M-2	Missing Link No.2 (Ole Odame Rd.-Part) (Mungu Rd. to Agwings Kotheh Rd.)	MoLG /NCC	0.65	Single	Including box culvert at Kirichwa Kubwa River.	B	There are a few gardens constructed in front of the gate of the residential plots fronting the road reserve. There are also farming area on the road reserve.	D	There are 20 tall trees approximately 20 m high in the middle of road reserve that are no significant part of the natural environment.	A	ditto
	M-3	Missing Link No.3 (Riverside Drive to Ring Road Westland)	MoLG /NCC	1.00	Single		B	There are 18 kiosk/slum units including 2 units of temporary garages subject to removal.	D	There are 17 trees grown in the road reserve.	A	ditto
	M-4	Missing Link No.4 (Mpakaki Rd.)	MoLG /NCC	0.65	Single	Including box culvert across canalized stream.	B	There are 35 units of kiosk/slum units occupying the road reserve from the mid point to the north end. At the south end, school buildings occupy the road reserve.	D	There are 4 trees grown within the sidewalk of the road reserve. There is no other significant natural environment affected by the road construction works.	A	ditto
	M-5	Missing Link No.5 (Mwarina St)	MoLG /NCC	2.50	Single		B	There are 130 units of kiosk/slum units occupying the road reserve.	D	There is no significant natural environment affected by the road construction works.	A	ditto
	M-6	Missing Link No.6 (General Wainangi St to Juja Rd.)	MoLG /NCC	3.00	Single		B	No occupation of temporary housing unit is observed. However, a number of farming areas occupy the road reserve. At the southern end, there are several residential units and apartment buildings extend their garden onto the road reserve.	D	There are 26 tall trees, 5 – 12 m high such as Graviola robusta, Terminalia Mentalis, Acrocarpus fraxinifolius, and Acacia sp. There is no significant natural environment affected by the project.	A	ditto
	M-7	Missing Link No.7 (Argwings Kotheh Rd. to James Gichuru Rd.)	MoLG /NCC	3.50	Double	Including two bridges across Kirichwa Kubwa River & Kirichwa Dogo River.	B	There are 95 kiosk/slum units occupying the road reserve throughout the route. Some of them are simple fencing for car repairing shops. Others are kiosk and residential purposes. At the mid point to the entrance at James Gichuru Road, gardening area, farming area, and an un-occupied grassland occupy the road reserve.	D	Missing Link No.7 crosses with the Missing Link No.6 in the mid point and then goes across Kirichwa Rubwa River. There is an old tree of Schinus Molle at the intersection with No.6. There is no significant natural environment is affected.	A	ditto
	M-8	Missing Link No.8 (Processional Way) (State House Rd. to Keyatta Av.)	MoLG /NCC	1.30	Single	Including grade separated junction at Nyerere Rd. & Kenyatta Av. is a possibility	B	There are a few farming areas occupying the road reserve. Some forty five units of temporary housing appear to be occupying in the area next to road reserve.	D	There is no significant natural environment affected the project.	A	ditto
	M-9	Missing Link No.9 (Mlilani Rd.) (Ralph Bunche Rd. to Denis Part Rd.)	MoLG /NCC	0.65	Single	Including improvement of storm water drain.	B	There are 36 kiosk/slum units occupying the road reserve.	D	There are 28 fully grown trees in the road reserve. At the eastern end, which is the mid point of Mlilani Street, 30 m wide and 150 m long forest area is affected by the project.	A	ditto
	M-10	Missing Link No.10 (Likhoni Rd. Extension) (Enterprise Rd. to Mombasa Rd.)	MoLG /NCC	2.50	Double	Design completed under KUTIP Project.	B	There are 45 kiosk/slum units occupying the road reserve.	D	No significant natural environment is affected by the project.	A	ditto
	M-11	Missing Link No.11 (Paw Paw Rd. Extension) (Muhoho Av. to Langata Rd.)	MoLG /NCC	2.50	Single	Including grade separation at Langata Rd. and Mbagathi Way Jct. are the possibility.	A	Depending on the route of the road joining to Langata Road, the following is noted: * There are 3 permanent houses and a parking lot belonging to an office building occupying the road reserve if the route takes to north for joining to Langata Road; * If the road takes to west for joining to Langata Road, there are 4 large office buildings subject to relocation. * Entering from Paw Paw Road, there are 205 units of kiosk/slum units and fenced area for car repairing shops occupying the road reserve	D	There is no significant natural environment affected by the project.	A	ditto
	M-12	Missing Link No.12 (Kung'u Karumba Rd. to Ngong Rd.)	MoLG /NCC	4.20	Double	Including special junction at Ngong Rd. is a possibility. Crossing over railway & Kibera slum is a possibility.	A	There are approximately three sections of which social impacts are noted as follows: * Northern portion of the road reserve, at Ngong Road is usually occupied by street vendors. A few kiosks have been built and they will increase over years. * In the southern portion of the Southland Estate, road reserve is occupied partly by gardening of the residential buildings and apartment house fronting it. There are also a few patches of farming areas; and * It appears that there is no road reserve set out within Kibera slum. It is estimated that there are approximately 380 units of kiosk/slum units occupying would-be road area.	D	There is no significant natural environment affected by the project.	A	ditto

TABLE 15.2-1 (2/2) ENVIRONMENTAL IMPACTS OF MISSING LINK CONSTRUCTION WORKS

Type	Code	Name of Road/Junction	Agencies	Road Length (km)	Type of Cross Section	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Level of Impact	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
Missing Links (Including Public & Non-Motorized Transport Facilities)	M-13	Missing Link No.13 (Muthiora Rd. to Hinga Rd.)	MoLG /NCC	1.50	Single	Including a bridge across Nairobi River & a box culvert across a seasonal stream.	A	There are approximately three sections of which the social impacts are noted as follows: * In the southern half, there are 115 kiosks/slum units occupying the road reserve. * In the mid point, the road reserve appears to go through agricultural area although it is not explicitly demarcated; and * There are 65 permanent households subject to resettlement and 35 kiosks/slum units.	D	There is no significant natural environment is affected by the project.	A	Air pollution and noise will increase due to increased traffic
	M-14	Missing Link No.14 (Convent Drive Extension) (Convent Dr to Kabarsiran Av.)	MoLG /NCC	0.50	Single	Including a bridge across Nairobi River.	B	This is a short section of road in the middle of residential area and there is no temporary housing unit occupy the road reserve.	D	This is a short section of road in the middle of residential area and there is no temporary housing unit occupy the road reserve.	A	ditto
	M-15a	Missing Link No.15a (Ring Rd. Parkland) (Ring Rd. Parkland to Limuru Rd.)	MoLG /NCC	2.30	Double	Planned in 1960/Cadastral Plan. Including special junction at Limuru Rd. Widening of present Ring Road Parklands & Sixth Parklands Av.	A	There are 11 kiosks occupy the road reserve.	D	It passes through Muthare River's right bank, which is forested for the entire section.	A	ditto
	M-15b	Missing Link No.15b (Ring Rd. Parkland) (Limuru Rd. to Thika Rd.)	MoLG /NCC	1.60	Double	It appears planned in 1960 Cadastral Plan including special junction at Thika Rd.	B	The households holding farming areas on the road reserve loose means of food supply to some extent. There are also 16 kiosks/slum units subject to removal.	D	It passes through the existing Ring Roads Parklands and some gardening and fully grown trees are subject to removal. A part of it also passes through road reserve being used for farming and gardening of the residential buildings fronting the road reserve.	A	ditto
	M-15c	Missing Link No.15c (Ring Rd. Parkland) (Ring Rd. Parkland to Limuru Rd. thru Karura Forest)	MoLG /NCC	1.60	Double	Proposed by Muthaiga Residents Association including two bridges across small streams.	A	There is no significant social impact on the Missing Link No.15c.	A	It passes through Karura Forest, which is a gazetted forest of Kenya. Length of the road inside the gazetted Karura Forest is approximately 750m and 400m in the degazetted forest.	A	ditto
	M-15d	Missing Link No.15d (Ring Rd. Parkland) (Ring Rd. Parkland to Peponi Rd.)	MoLG /NCC	1.30	Single	Proposed by Nairobi City Convention in 1993 including a bridge or a box culvert across Muthare River.	B	There is 1 temporary housing unit occupying road reserve. Further to the east of Peponi Garden Street, there are gardening areas of the residential buildings fronting the road reserve subject to demolition. Depending on the design as to which side of the existing road reserve should be incorporated into new road design, there are several permanent households subject to demolition.	B	It passes through a portion of forest area, used to be a part of Karura Forest but degazetted area at present, joining from Peponi Gardens to Ring Road Parkland is forest area. Approximately 30 m wide of road goes through 580 m of forest area.	A	ditto
	M-16	Missing Link No.16 (Quarry Rd. Extension) (Landhies Rd. to Quarry Rd.)	MoLG /NCC	0.85	Double	Proposed by Nairobi City Convention in 1993, including a bridge across Nairobi River & widening of a section of present	A	The portion joining from Landhies Rd. to Quarry Rd. involves more than 280 kiosks/slum units and 3 large permanent shelters of local market selling hand crafted households goods.	D	The portion joining from Landhies Rd. to Quarry Rd. is on the river bank area, which is now occupied by street vendors and heavily littered.	A	ditto

Note A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

TABLE 15.2-2 ENVIRONMENTAL IMPACTS OF INTERSECTION IMPROVEMENT

Type	Code	Name of Road/Junction	Agencies	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Level of Impact	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
	JC-1	Waiyaki Way Junction (Uhuru Highway Corridor-1)	MRPW /NCC	Grade Separation	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	No significant natural environment is affected.	A	Air pollution and noise will increase due to increased traffic.
	JC-2	Museum Hill Junction (Uhuru Highway Corridor-2)	MRPW /NCC	Grade Separation	C	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	Trees in a limited area on both sides of the road would have to be cut down.	A	ditto
	JC-3	University Way Junction (Uhuru Highway Corridor-3)	MRPW /NCC	Grade Separation	C	ditto	D	No significant natural environment is affected.	A	ditto
	JC-4	Kenyatta Avenue Junction (Uhuru Highway Corridor-4)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-5	Haile Selassie Avenue Junction (Uhuru Highway Corridor-5)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-6	Bunyala Road Junction (Uhuru Highway Corridor-6)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-7	Langata/Lusaka Road Junction (Uhuru Highway Corridor-7)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-8	Likoni Road Extension Junction (Uhuru Highway Corridor-8)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-9	Enterprise Road Junction (Uhuru Highway Corridor-9)	MRPW /NCC		C	ditto	D	ditto	A	ditto
	JC-10	Airport North Road Junction (Uhuru Highway Corridor-10)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-11	Elgeyo Marakwet Junction (Ngong Road Corridor-1)	MRPW /NCC		C	ditto	D	ditto	A	ditto
	JC-12	Ring Road Kilimani Junction (Ngong Road Corridor-2)	MRPW /NCC		C	ditto	D	ditto	A	ditto
	JC-13	Valley Road Junction (Ngong Road Corridor-3)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-14	Kenyatta Avenue Junction (Ngong Road Corridor-4)	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-15	Ring Rd Kilimani / Argwings Kondek Rd Junction	MoLG /NCC		C	Traffic congestion during the construction period should increase. In reference to Missing Link No.12, encroachment to the road reserve has to be dealt with stakeholders meeting. Smooth flow of traffic is realized upon completion.	D	ditto	A	ditto
	JC-16	James Gichuru Rd / Gitanga Rd Junction	MoLG /NCC		C	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	To a limited extent, road side trees would have to be felled.	A	ditto
	JC-17	Riverside Drive / Ring Rd Kileleshwa Junction	MoLG /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-18	Limuru Rd / Forest Rd Junction	MRPW /NCC	Grade Separation	C	ditto	D	No significant natural environment is affected.	A	ditto
	JC-19	Muranga Rd / Forest Rd Junction	MRPW /NCC		C	ditto	D	ditto	A	ditto
	JC-20	Thika Rd / Muranga Rd Junction	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-21	Thika Rd / Outer Ring Rd Junction	MRPW /NCC	Grade Separation	C	ditto	D	ditto	A	ditto
	JC-22	Outer Ring Rd / Juja Rd Junction	MRPW /NCC		C	ditto	D	ditto	A	ditto

Note: A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

Major Junctions that Require Attention

TABLE 15.2-3 (1/3) ENVIRONMENTAL IMPACTS OF ROAD IMPROVEMENT

Type	Code	Name of Road/Junction	Agencies	Road Length [km]	Type of Cross Section	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Level of Impact	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
a. Radial Arterials	R-1	Mombasa Rd (Fly-Over at JKIA to Lusaka Rd)	MRPW / NCC	10.70	Triple	Includes grade separation at specific junctions, and separation of transit and local traffic	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	No significant natural environment is affected.	A	Air pollution and noise will increase due to increased traffic.
	R-2a	Langata Rd (KWS HQ to Bomas of Kenya)	MRPW / NCC	2.00	Double		B	ditto	D	ditto	A	ditto
	R-2b	Langata Rd (Bomas of Kenya to Ngong Rd)	MRPW / NCC	7.40	Single		B	ditto	D	ditto	A	ditto
	R-3a	Ngong Rd (Kenyatta Av to Naivasha Rd)	MRPW / NCC	6.60	Double	Includes dualing, mass transit route, and separation of transit and local traffic	B	ditto	D	ditto	A	ditto
	R-3b	Ngong Rd (Naivasha Rd to Karen Rd)	MRPW / NCC	6.70	Double		B	ditto	D	ditto	A	ditto
	R-4	Uhuru Highway / Chirromo Rd (Lusaka Rd to Waiyaki Way)	MRPW / NCC	5.35	Quadruple	Includes grade separated junctions, and separation of transit and local traffic	B	ditto	D	ditto	A	ditto
	R-5a	Forest Rd (Museum Hill Rd to Limuru Rd)	MRPW / NCC	0.90	Double	Includes grade separation at Limuru Rd junctions.	B	ditto	D	ditto	A	ditto
	R-5b	Limuru Rd (Muranga Rd to City Boundary)	MRPW / NCC	10.00	Double		A	ditto	D	ditto	A	ditto
	R-5c	Limuru Rd (City Boundary to Kikuyu Rd)	MRPW / NCC	1.00	Double		A	A number of estates along the road are affected. Smooth flow of traffic is realized upon completion.	D	ditto	A	ditto
	R-6a	Muranga Rd Slip Rd (Moi Av to Muranga Rd)	MRPW / NCC	0.30	Single		B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	ditto	A	ditto
R-6b	Muranga Rd (Limuru Rd to Thika Rd)	MRPW / NCC	2.70	Double	Includes 4 No. Bridges (across Canalized Stream, Muthare River, Gituhumu River, and Karura)	B	ditto	D	ditto	A	ditto	
R-6d	Thika Rd (Muranga Rd to Kenyatta University)	MRPW / NCC	14.50	Triple		B	ditto	D	ditto	A	ditto	
R-7a	Park Rd (Ngara Rd to Muranga Rd)	MRPW / NCC	1.00	Double		B	ditto	D	ditto	A	ditto	
R-7b	Juja Rd (Muranga Rd to Outer Ring Rd)	MRPW / NCC	5.40	Double		B	ditto	D	ditto	A	ditto	
R-7c	Juja Rd Extension (Outer Ring Rd to Komanock Rd)	MRPW / NCC	4.20	Double		B	ditto	D	ditto	A	ditto	
R-8b	Jogoo Rd Extension (Outer Ring Rd to Komanock Rd)	MRPW / NCC	6.60	Double		B	ditto	D	ditto	A	ditto	
R-10	Ring Road Njira (Racecourse Rd to Thika Road)	MRPW / NCC	-	-	Widening / Public and NMT	B	ditto	D	ditto	A	ditto	

Note: A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

TABLE 15.2-3 (2/3) ENVIRONMENTAL IMPACTS OF ROAD IMPROVEMENT

Type	Code	Name of Road/Junction	Agencies	Road Length [km]	Type of Cross Section	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Level of Impact	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
Circumferential Arterials	C-2a	Museum Hill Rd (Uhuru Highway to Forest Rd)	MRPW /NCC	0.40	Double		B	Traffic congestion during the construction period should increase. Smooth flow of traffic is	B	No significant natural environment is affected.	A	Air pollution and noise will increase due to increased traffic.
	C-2b	Ngara Rd (Forest Rd to Park Rd)	MRPW /NCC	1.90	Double		B	ditto	D	ditto	A	ditto
	C-2c	Quarry Rd (Park Rd to Punwani Rd)	MRPW /NCC	1.20	Double		B	ditto	D	ditto	A	ditto
	C-2d	Quarry Rd Extension (Punwani Rd to Landies Rd)	MRPW /NCC	0.80	Double		B	ditto	D	ditto	A	ditto
	C-2e	Lusaka Rd (Enterprise Rd to Mombasa Rd)	MRPW /NCC	1.30	Double		B	ditto	D	ditto	A	ditto
	C-2f	Woodlands Rd Extension (Mbagathi Rd to Arungwa Kodhek Rd)	MRPW /NCC	0.70	Double		B	ditto	D	ditto	A	ditto
	C-2g	Woodlands Rd (Arungwa Kodhek Rd to Denis Pitt Rd)	MRPW /NCC	1.00	Double		B	ditto	D	ditto	A	ditto
	C-2h	Woodlands Rd / Museum Hill Rd Link (Denis Pitt Rd to Uhuru Highway)	MRPW /NCC	2.20	Double		B	ditto	D	ditto	A	ditto
	C-3a	Ring Road Parkland Extension (Thika Rd to First Av Eastleigh)	MRPW /NCC	1.15	Double		B	ditto	D	ditto	A	ditto
	C-3b	First Av Eastleigh & Likoni Rd Link (First Av Eastleigh to Likoni Rd)	MRPW /NCC	0.80	Double		B	ditto	D	ditto	A	ditto
	C-4a	Outer Ring Rd (Airport South Rd to Airport North Rd)	MRPW /NCC	2.20	Double		B	ditto	D	ditto	A	ditto
	C-4b	Outer Ring Rd (Airport North Rd to Thika Rd)	MRPW /NCC	10.20	Double	Includes grade separation at Jagon Rd junctions, and separation of	B	ditto	D	ditto	A	ditto
	C-4c	Outer Ring Rd Extension (Thika Rd to Kiambu Rd)	MRPW /NCC	3.35	Double		B	ditto	D	ditto	A	ditto
	C-4d	Ruaia Rd (Kiambu Rd to Limuru Rd)	MRPW /NCC	5.00	Double		B	ditto	D	ditto	A	ditto
	C-4e	Ruaia Rd Extension (Limuru Rd to Red Hill Rd)	MRPW /NCC	1.70	Double		B	ditto	D	ditto	A	ditto
	C-4f	Bypass Link Rd (Red Hill Rd to Wiyaki Way)	MRPW /NCC	4.30	Double		B	ditto	D	ditto	A	ditto
	C-4g	James Gichuru Rd (Wiyaki Way to Gitanga Rd)	MRPW /NCC	4.20	Double		B	ditto	D	ditto	A	ditto
	C-4h	Kingara Rd (Gitanga Rd to Ngong Rd)	MRPW /NCC	1.00	Double		B	ditto	D	ditto	A	ditto
	C-5	Kamiti Rd (Thika Rd to Koma Rock Rd)	MRPW /NCC	8.00	Single		B	ditto	D	ditto	A	ditto
	Roads that Require Improvements											
Roads that Require Improvements												

Note: A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

TABLE 15.2-3 (3/3) ENVIRONMENTAL IMPACTS OF ROAD IMPROVEMENT

Type	Code	Name of Road/Junction	Agencies	Road Length [km]	Type of Cross Section	Type of Work	Level of Impact	Anticipated Impacts - Social Environment	Anticipated Impacts - Natural Environment	Level of Impact	Anticipated Impacts - Pollution
c. Minor Arterials	S-1a	Enterprise Rd (Commercial St to Lusaka Rd)	MRPW / NCC	0.60	Double		B	Traffic congestion during the construction period should increase. Smooth flow of traffic is ditto	No significant natural environment is affected.	A	Air pollution and noise will increase due to increased traffic.
	S-1b	Enterprise Rd (Isiolo Rd to Mombasa Rd)	MRPW / NCC	4.50	Double		B	ditto	ditto	A	ditto
	S-2	Magadi Rd (Bomas of Kenya to Ngong Circular Rd East)	MRPW	16.70	Single		B	ditto	ditto	A	ditto
	S-3	Narivasha Rd (Ngong Rd to Waiyaki Way)	MRPW / NCC	6.90	Double		B	ditto	ditto	A	ditto
	S-4	Lower Kabete Rd (Ring Rd Westlands to Kikuyu Rd)	MRPW / NCC	12.20	Single		B	ditto	ditto	A	ditto
	S-5a	Kiambu Rd (Thika Rd to City Boundary)	MRPW / NCC	5.60	Single		B	ditto	ditto	A	ditto
	S-5b	Kiambu Rd (City Boundary to Kiambu Town)	MRPW	5.00	Single		B	ditto	ditto	A	ditto
	S-6a	Kamiti Rd (Thika Rd to City Boundary)	MRPW / NCC	5.30	Single		B	ditto	ditto	A	ditto
	S-6b	Kamiti Rd (City Boundary to Kin Valley Rd)	MRPW	2.60	Single		B	ditto	ditto	A	ditto
	S-7	Racecourse Rd / Gen Wainangi St (Ring Rd Ngrani to Eastleigh Second Av)	MRPW / NCC	2.20	Double		B	ditto	ditto	A	ditto
	S-8a	Nairobi River Rd (Dandora Rd Extension) (Racecourse Rd to Outer Ring Rd)	MRPW / NCC	5.70	Double		B	ditto	ditto	A	ditto
	S-8b	Dandora Rd (Outer Ring Rd to Kona Rock Rd)	MRPW / NCC	5.20	Double		B	ditto	ditto	A	ditto

Note: A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

15.3 IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

TABLE 15.3 (1/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description/Road / Junction Name and Section)	Rd Length (km)	Type of Cross Section	Type of Work	Level of Impact	Social Environment Description	Natural Environment Description	Level of Impact	Pollution Description
1. Bypass and Link Roads										
1.1 Bypass Roads (B)										
	B-1	Southern Bypass (on-going)	30.0	2-lane	4-lane Construction with NMT	A	The detailed design works are on-going including EIA study, implementation within the package of contact.	The detailed design works are on-going including EIA study. Fauna and Flora may be impacted by projects.	A	The detailed design works are on-going including EIA study. Air pollution and noise will increase due to increased traffic.
	B-2	Northern Bypass	25.0	2-lane	4-lane Construction with NMT	A	It goes through tea and other types of agricultural estates that would involve a number of resettlement.	The detailed design works are on-going including EIA study. Fauna and Flora may be impacted by projects.	A	ditto
	B-3	Eastern Bypass	30.0	2-lane	4-lane Construction with NMT	B	Most of road reserve, which goes through cattle rearing area, has been largely obtained.	Specific natural impacts are subject to further study. Natural forests remaining among agricultural estates are affected.	C	Specific natural impacts are subject to further study.
1.2 Link Roads (LR)										
	L-1a	Bypass Link Road (Northern Bypass to Vihavaki Way)	5.1	4-lane	4-lane Construction with NMT	A	Portions of the road are subject to land acquisition and the local farming areas are affected.	Specific natural impacts are subject to further study.	C	Air pollution and noise will increase due to increased traffic.
	L-1b	Bypass Link Road (Jirani Gichuru-Vihavaki Way to Ngong Rd)	6.3	2-lane	Widening with NMT (2 to 4 lanes)	B	Several portions of the road required land acquisition as the road widening works are carried out.	ditto	B	ditto
	L-2a	Outer Ring Road (Airport Road to Airport North Rd)	2.8	2-lane	Widening with NMT (2 to 4 lanes)	B	Work on during the construction period should increase. Smooth flow of traffic is expected.	ditto	A	ditto
	L-2b	Outer Ring Road (Airport North Rd to Thika Rd)	10.2	2-lane	Widening with NMT (2 to 4 lanes)	A	A number of factory and office buildings as well as local houses would become subject to resettlement.	ditto	C	ditto
1.3 Link Road Extensions (LE)										
	L-1c	Bypass Link Road Extension-1 (Ngong Rd to Jirani Gichuru)	4.6	4-lane	4-lane Construction with NMT	A	Land acquisition on various portions of the road would involve resettlement.	ditto	A	ditto
	L-2c	Bypass Link Road Extension-2 (Outer Ring Rd to Northern Bypass)	4.8	4-lane	A Bridge Construction	A	Land acquisition on various portions of the road would involve resettlement.	ditto	A	ditto
2. Missing Links (Including Public & Non-Motorized Transport Facilities)										
2.1 Arterial Roads (AR)										
	M-1	Missing Link No.1 (River Rd to Ngara Rd)	0.7	2-lane	2-lane Construction with NMT	A	There are 250 kiosk/slum units to be occupying the road reserve.	No significant natural environment is affected.	D	ditto
	M-3	Missing Link No.3 (Mbaraka St to River Rd Westlands)	1.0	2-lane	2-lane Construction with NMT	B	There are 18 kiosk/slum units including 2 units of temporary garages subject to removal.	ditto	D	ditto
	M-6	Missing Link No.6 (Choiyok Rd to Ring Rd (Kileleshwa))	3.0	2-lane	4-lane Construction with NMT	B	There are 6 number of farming and gardening areas subject to removal.	ditto	A	ditto
	M-7	Missing Link No.7 (Aungmye Kochik Rd to Jirani Gichuru Rd)	3.5	2-lane	4-lane Construction with NMT	B	There are 85 kiosk/slum units occupying the road reserve. There are also a number of gardens and farming areas.	ditto	A	ditto
	M-10	Missing Link No.10 (Etiopia Rd to Mombasa Rd)	2.5	4-lane	4-lane Construction with NMT	B	There are 45 kiosk/slum units occupying the road reserve.	ditto	A	ditto
	M-12	Missing Link No.12 (Kumukui Kenyatta Rd to Ngong Rd)	4.2	2-lane	4-lane Construction with NMT	A	There are 380 kiosk/slum units occupying the planned alignment of the road.	ditto	D	ditto
	M-15a	Missing Link No.15a (Ring Rd Parkland)	2.3	4-lane	4-lane Construction with NMT	A	There are 11 kiosk occupy the road reserve.	ditto	A	ditto
	M-15b	Missing Link No.15b (Ring Rd Parkland Ext.)	1.6	4-lane	4-lane Construction with NMT	B	There are 16 kiosk/slum units and farming areas subject to removal.	ditto	D	ditto
	M-16	Missing Link No.16 (Quarry Rd Extension (Landith Rd to Quarry Rd))	0.9	4-lane	4-lane Construction with NMT	A	There are more than 280 kiosk/slum units and 3 large permanent stalls of local market subject to resettlement.	ditto	D	ditto
2.2 Collector Roads (CR)										
	M-5	Missing Link No.5 (Munira St (Gisungu Way to Shauri Moyo Rd))	2.5	2-lane	2-lane Construction with NMT	B	There are 130 units of kiosk/slum units occupying the road reserve.	ditto	A	ditto
	M-11	Missing Link No.11 (Paw Paw Rd Extension (Munira St to Jirani Gichuru Rd))	2.5	2-lane	2-lane Construction with NMT	A	There are 205 kiosk/slum units, 2 permanent houses, and 3 office blocks subject to resettlement.	ditto	D	ditto
	M-13	Missing Link No.13 (Munira St to Jirani Gichuru Rd)	1.5	2-lane	2-lane Construction with NMT	A	There are 150 kiosk/slum units and 65 permanent houses subject to resettlement.	ditto	D	ditto
	M-15c	Missing Link No.15c (Ring Rd Parkland Ext.) (Ring Rd Parkland to Limuru Rd thru Karura Forest)	1.6	4-lane	2-lane Construction with NMT	B	There is no significant social impact on the Missing Link No.15c while stakeholder meeting should be held.	1 assess through Karura Forest, which is a gazetted forest of Kenya.	A	ditto
2.3 Local Roads (ML)										
	M-2	Missing Link No.2 (Olu Okumu Rd/Pan (Munira St to Aungmye Kochik Rd))	0.7	2-lane	2-lane Construction with NMT	A	There are a few gardens constructed in front of the gate of the residential plots fronting the road reserve.	No significant natural environment is affected.	D	ditto
	M-4	Missing Link No.4 (Munira St to Jirani Gichuru Rd)	0.7	2-lane	2-lane Construction with NMT	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	ditto	A	ditto
	M-8	Missing Link No.8 (Professional Way (State House Rd to Kenyatta Av))	1.3	2-lane	2-lane Construction with NMT	B	ditto	ditto	D	ditto
	M-9	Missing Link No.9 (Munira St to Jirani Gichuru Rd)	0.7	2-lane	2-lane Construction with NMT	B	ditto	ditto	D	ditto
	M-14	Missing Link No.14 (Ring Rd Parkland to Jirani Gichuru Rd)	0.5	2-lane	2-lane Construction with NMT	B	ditto	ditto	D	ditto
	M-15d	Missing Link No.15d (Ring Rd Parkland Ext.) (Ring Rd Parkland to Papan Rd)	1.3	2-lane	2-lane Construction with NMT	B	Approximately 30 m wide of road goes through 380 m of forest area.	ditto	A	ditto
3. Roads that Require Improvements (Widening and/or Grade Separation incorporating Public & Non-Motorized Transport Facilities)										
3.1 Radial Arterials										
	R-1	Radial Arterial inside CR (CR)								
	R-1a	Uhuru Highway	1.5	6-lane	Widening with NMT (6 to 8 lanes) included in Uhuru Highway Widening	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	No significant natural environment is affected.	D	Air pollution and noise will increase due to increased traffic.
	R-1b	(Halle Schesse Av to Luaka / Langata Rd)	3.3	6-lane	Widening with NMT (4 to 6 lanes)	B	ditto	ditto	A	ditto
	R-2a	Langata Rd (Luaka / Langata Rd to Icon Rd Ext.C3)	4.6	4-lane	Widening with NMT (1 to 6 lanes)	B	ditto	ditto	A	ditto
	R-3a	Ngong Rd (Mbaraki Rd to C3)	3.6	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	ditto	A	ditto

TABLE 15.3 (2/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description/Road / Junction Name and Section)	Rd Length (km)	Type of Cross Section	Type of Work	Social Environment		Natural Environment		Pollution		
						Level of Impact	Description	Level of Impact	Description	Level of Impact	Description	
	R-4a	Uhuru Highway (C1 to Museum Hill Rd/C2)	0.8	8-lane	Widening with NMT (6 to 8 lanes)	B	ditto	D	ditto	A	ditto	
	R-4b	Uhuru Highway (Museum Hill Rd/C2 to Ring Rd/Vestlands C3)	1.7	8-lane	Widening with NMT (6 to 8 lanes)	B	ditto	D	ditto	A	ditto	
	R-6a	Muranga Rd w/ Slip Rd (Museum Hill Rd/C2 to Ring Rd/Vestlands C3)	0.7	2-lane	2-lane Widening (6 to 8 lanes)	B	ditto	D	ditto	A	ditto	
	R-6b	Muranga Rd (M5 Av/C1 to Ngara Rd/C2)	1.8	4-lane	2-lane Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-6c	Muranga Rd (Forest Rd to Forest Rd)	1.1	4-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	R-7a	Park Rd (Forest Rd to Muthaiga Rd)	1.3	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-7b	Ngara Rd (Ngara Rd to Muranga Rd)	0.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-7c	Ngara Rd (Ngara Rd to West Empress)	0.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-7d	Ngara Rd (Enterprise Rd to Lusaka Rd)	0.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	2) Radial Arterials Outside C3-South & West (RS)											
	R-1c	Mombasa Rd (Lion Rd Est. C3 to Fix-Over at JICA)	7.5	6-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	R-2b	Lingata Rd (C3 to Magadi Rd)	2.0	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-2c	Ngara Rd (Magadi Rd to Ngara Rd)	7.4	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-2d	Dagorette Rd (Ngara Rd to Kileleshwa Rd)	6.5	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-3b	Ngara Rd (C3 to Naivasha Rd)	3.0	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-3c	Ngara Rd (Naivasha Rd to Langata / Dagorette Rd)	6.7	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-3d	Ngara Rd (Langata / Dagorette Rd to Ngara Town)	8.1	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-4b	Ngara Rd (Ring Rd/Vestlands C3 to James Sichuru Rd/L1)	3.1	8-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	R-4c	Ngara Rd (James Sichuru Rd/L1 to Naivasha Rd)	6.8	8-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	3) Radial Arterials Outside C3 - North & East (RN)											
	R-5a	Forest Rd (Museum Hill Rd to Limuru Rd)	0.9	6-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	R-5b	Limuru Rd (Museum Hill Rd to City Boundary)	10.0	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	A	A portion of Kenura Forest is affected.	A	ditto	
	R-5c	Limuru Rd (Muirira Rd to City Boundary)	5.7	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	No significant natural environment is affected.	A	ditto	
	R-6c	Thika Rd (Muirira Rd to Kiambu Rd/C3)	14.5	6-lane	Widening with NMT (4 to 6 lanes)	B	ditto	D	ditto	A	ditto	
	R-7c	Thika Rd (Muirira Rd to Kenyatta University)	4.1	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-7d	Komarak Rd (Muirira Rd/C3 to Outer Ring Rd)	3.5	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-7e	Komarak Rd (Outer Ring Rd to Dandora Estate)	0.7	4-lane	New Construction (4-lane)	B	ditto	D	ditto	A	ditto	
	R-7f	Komarak Rd (Dandora Estate to Dandora Rd)	8.2	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	R-8b	Jogoo Rd Extension (Jogoo Rd to Jogoo Estate)	2.7	4-lane	New Construction (4-lane)	B	ditto	D	ditto	A	ditto	
	R-8c	Jogoo Rd Extension (Jogoo Rd to Komarak Rd)	3.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	4) Proposed New Radial Roads (RP)											
	S-8a	Nairobi River Road (Museum Hill Rd to Muranga Rd)	1.2	4-lane	New Construction (4-lane)	A	A large number of kiosk/gum units are subject to relocation.	D	No significant natural environment is affected.	A	Air pollution and noise will increase due to increased traffic.	
	S-8b	Nairobi River Road (Muranga Rd to Ring Rd/Pumwani Rd)	1.3	4-lane	New Construction (4-lane)	A	ditto	D	ditto	A	ditto	
	S-8c	Ring Rd (Ring Rd to Park Rd)	7.2	4-lane	New Construction (4-lane)	A	Sufficient in number of kiosk/gum units are subject to relocation or relocation.	D	ditto	A	ditto	
	S-1a	Enterprise Rd Extension (Enterprise Rd to Commercial St)	0.6	Brook	New Construction (2-lane) Railway Over Bridge (2-lanes)	B	Flow of traffic is realized upon completion.	D	ditto	A	ditto	
	3.2 Circumferential Arterials											
	1) Circumferential Arterials C1 & C2 (C2)											
	C-1a	Uhuru Highway (University Way to Hiale Swaisse Av)	1.4	8-lane	Widening with NMT (6 to 8 lanes)	B	ditto	D	ditto	A	ditto	
	C-2a	Museum Hill Rd (Uhuru Highway to Forest Rd)	0.4	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-2b	Ngara Rd (Forest Rd to Park Rd)	1.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-2c	Quarry Rd (Park Rd to Pumwani Rd)	1.2	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-2e	Lusaka Rd (Enterprise Rd to Mombasa Rd)	1.3	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	

TABLE 15.3 (3/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description (Road/Junction Name and Section)	Rd Length (km)	Type of Cross Section	Type of Work	Social Environment		Natural Environment		Pollution		
						Level Impact	Description	Level Impact	Description	Level Impact	Description	
2) Commercial Arterial Roads (C)	C-2f	Woodlands Rd Extension (Mogaga Rd to Akwans Kofhak Rd)	0.7	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-2g	Woodlands Rd (Akwans Kofhak Rd to Denis Pitt Rd)	1.0	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-2h	Woodlands Rd / Museum Hill Rd Link (Denis Pitt Rd to Uhuru Highway)	1.4	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-3a	Ring Road Westlands (Ring Rd to Ring Rd Pavements)	1.5	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-3b	Ring Road Parkland Extension (Thika Rd to Juba Rd)	0.8	4-lane	4-lane Construction with NMT A Bridge Construction	B	ditto	D	ditto	A	ditto	
	C-3c	Muratina Street (Juba Rd to General Wanjau St)	1.4	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
	C-3d	Funam Street & Extension (Funam St to Wariangi St to Lalen Rd)	2.3	4-lane	4-lane Construction with NMT A Bridge Construction	B	ditto	D	ditto	A	ditto	
	3.2 Secondary Arterial Roads											
	1) South-West (S-S)											
	S-10	Enterprise Rd (Commercial St to Lusaka Rd)	0.6	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto	
S-1c	Enterprise Rd (Isiolo Rd to Mombasa Rd)	4.5	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto		
S-2	Migosi Rd (Langata Rd to Ngong Circular Rd East)	16.7	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto		
S-3	Ngong Rd to Vilevaki Way (Lower Kabane Rd)	6.9	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto		
S-4	Lower Kabane Rd (Ring Rd Westlands to Kikuu Rd)	12.2	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	D	ditto	A	ditto		
2) North-East (S-N)												
S-5a	Kiambu Rd (Thika Rd to City Boundary)	5.6	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	Specific natural impacts are subject to further study.	A	ditto		
S-5b	Kiambu Rd (City Boundary to Kiambu Town)	5.0	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	ditto	A	ditto		
S-6a	Kemili Rd (Thika Rd to City Boundary)	5.3	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	ditto	A	ditto		
S-6b	Kemili Rd (City Boundary to Kuu Valley Rd)	2.6	2-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	ditto	A	ditto		
S-7	Raocourse Rd / Gen Wanjau St (Ring Road Westlands to Eastleigh Second Av)	2.2	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	ditto	A	ditto		
S-8d	Quier Rd to Kona Rock Rd (Quier Rd to Kona Rock Rd)	3.7	4-lane	Widening with NMT (2 to 4 lanes)	B	ditto	C	ditto	A	ditto		
4. Signalisation for Intersection Improvement (SG)												
4.1 A102/A104												
SG-1	Urban Road Extension (Southern Bypass) (Uhuru Highway Corridor-8)	(0.5)			Grade Separation (On-going) Northern Corridor Transport Project	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	No significant natural environment is affected.	C	Air pollution and noise discharge are subject to further study.	
SG-2	Enterprise Road Junction (Uhuru Highway Corridor-9)	(0.25)			Improvement (On-going) Northern Corridor Transport Project	B	ditto	D	ditto	C	ditto	
SG-3	Airport North Road (Eastern Bypass) Junction (Uhuru Highway Corridor-10)	(0.5)			Grade Separation (On-going) Northern Corridor Transport Project	B	ditto	D	ditto	C	ditto	
SG-4	Uhuru Highway Corridor-11 (Uhuru Highway Corridor-11)	(0.25)			Improvement	B	ditto	D	ditto	C	ditto	
4.2 Forest Road/Thika Road												
SG-5	Forest Rd / Ngara Rd Junction (Thika Road Corridor-1)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-6	Forest Rd / Limuru Rd Junction (Thika Road Corridor-2)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-7	Forest Rd / Ngara Rd Junction (Thika Road Corridor-3)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-8	Muranga Rd / Thika Rd Junction (Thika Road Corridor-4)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-8	Thika Rd / Outer Ring Rd Junction (Thika Road Corridor-5)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
4.3 Ngong Road/Valley Road												
SG-10	Kenya Avenue Junction (Ngong Rd / Valley Rd Corridor-1)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-11	Thika Road Junction (Ngong Rd / Valley Rd Corridor-2)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-12	Valley Road Junction (Ngong Rd / Valley Rd Corridor-3)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-13	Ring Road / Kileleshwa Junction (Ngong Rd / Valley Rd Corridor-4)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-14	Egerton Road / Valley Rd Junction (Ngong Rd / Valley Rd Corridor-5)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-15	Dagwette Corner Junction (Ngong Rd / Valley Rd Corridor-6)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	
SG-16	Valley Rd / Awings Kofhak Rd Junction (Ngong Rd / Valley Rd Corridor-7)	(0.1)			Improvement	B	ditto	D	ditto	C	ditto	

TABLE 15.3 (4/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description/Road / Junction Name and Section	Rd Length (m)	Type of Cross Section	Type of Work	Social Environment		Natural Environment		Pollution		
						Level of Impact	Description	Level of Impact	Description	Level of Impact	Description	
4.4. Muringa Road/Juaja Road	SG-17	Agwanga Kothek Rd / Woodlands Rd Junction (Juaja Rd / Valley Rd Corridor-3)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-18	Gobaa Cinema Junction (Muringa Rd / Juaja Rd Corridor-1)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-19	Muranga Rd / Juaja Rd Junction (Muranga Rd / Juaja Rd Corridor-2)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-20	Muranga Rd / Park Rd Junction (Muranga Rd / Juaja Rd Corridor-3)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-21	Ring Rd Ngara / Juja Rd Junction (Muranga Rd / Juaja Rd Corridor-4)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-22	Outer Ring Rd / Juaja Rd Junction (Muranga Rd / Juaja Rd Corridor-5)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	4.5. Lusaka Road/Juaja Road/Outer Ring Road	SG-23	Lusaka Rd / Outer Ring Rd Junction (Lusaka Rd / Juaja Rd Corridor-1)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
		SG-24	Lusaka Rd / Enterprise Rd Junction (Lusaka Rd / Juaja Rd Corridor-2)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
		SG-25	Lusaka Rd / Jogojo Rd Junction (Lusaka Rd / Juaja Rd Corridor-3)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
		SG-26	Jogoo Rd / First Av Eastleigh Junction (Lusaka Rd / Juaja Rd Corridor-4)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
		SG-27	Jogoo Rd / Likoni Rd Junction (Lusaka Rd / Juaja Rd Corridor-5)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
		SG-28	Jogoo Rd / Outer Ring Rd Junction (Lusaka Rd / Juaja Rd Corridor-6)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto
SG-29		Outer Ring Rd / Airport North Rd Junction (Lusaka Rd / Juaja Rd Corridor-7)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
4.6. River Rd/Racecourse Rd	SG-30	Hiale Sebasse Av / Racecourse Rd Junction (River Rd / Racecourse Road Corridor-1)	(0.1)		Improvement	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	No significant natural environment is affected.	C	Air pollution and noise discharge are subject to further study.	
	SG-31	Hiale Sebasse Av / Lakeside Rd Junction (River Rd / Racecourse Road Corridor-2)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-32	Racecourse Rd / Ring Rd Pumwani Junction (River Rd / Racecourse Road Corridor-3)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-33	River Rd / Tom Mboya St Junction (River Rd / Racecourse Road Corridor-4)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-34	Kenya Av / Koinange St Junction (CBD-1)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
4.7. Kenyatta Avenue/Moi Avenue/University Way	SG-35	Hiale Av / Muriuki Mungu St Junction (CBD-2)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-36	Kenyatta Av / Wabera St Junction (CBD-3)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-37	Kenyatta Av / Kimathi St Junction (CBD-4)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-38	Kenyatta Av / Moi Av Junction (CBD-5)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-39	Kenyatta Av / Tom Mboya St Junction (CBD-6)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-40	Moi Av / Acara Rd Junction (CBD-7)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-41	Moi Av / Ronald Ngala St Junction (CBD-8)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-42	Moi Av / Harambee Av Junction (CBD-9)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-43	Moi Av / Hiale Sebasse Av Junction (CBD-10)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-44	University Way / Koinange St Junction (CBD-11)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	SG-45	University Way / Muriuki Mungu St Junction (CBD-12)	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
	4.8. Others	SG-46	Riverside Dr / Ring Rd Kileleshwa Junction	0.1		Improvement	B	ditto	D	ditto	C	ditto
SG-47		Lower Kabete Rd / Ring Rd Westlands Junction	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
SG-48		Limau Rd / Muhaga Rd Junction	(0.1)		Improvement	B	ditto	D	ditto	C	ditto	
5. Major Non-Motorized Transport Corridors (Foot Path and Bicycle Lanes)												
5.1 NMT - South & West (NMT-5)	NMT-1	Ngong Rd (Lenana School to Navasha Rd)	0.0		5m Footpath and Bicycle Lane, Drainage	B	Traffic congestion during the construction period should increase. Smooth flow of traffic is realized upon completion.	D	No significant natural environment is affected.	D	Air pollution and noise will be no change	
	NMT-2	Rokuyu Rd (Viduaaka Shopping Centre to Navasha Rd)	3.0		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto	
	NMT-3	(Kwanausare to Ngara Rd)	3.1		5m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto	

TABLE 15.3 (5/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description/Road / Junction Name and Section	Rd.Length (m)	Type of Cross Section	Type of Work	Social Environment		Natural Environment		Pollution			
						Level of Impact	Description	Level of Impact	Description	Level of Impact	Description		
5.2 NMT - North & East (NMT-14)	NMT-4	Kinyara Rd (Nairobi Rd to Changa Rd)	1.0		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-5	Jones Gichuru Rd (Nairobi Rd to Vazaki Way)	0.0		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-6	Sunge Rd (Kwana to Ole Oluome Rd)	2.7		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-7a	Argwings Kothek Rd (Kinyara Rd to Valley Rd)	3.6		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-7b	Argwings Kothek Rd Extension (Valley Rd to Balo Buziye Rd)	0.5		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-8	Chabak Rd to Kenyatta Av (Chabak Rd to Kenyatta Av)	4.3		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-9	Mbagathi Way Corridor (Nairobi Rd to Langata Rd)	3.0		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-10	Valley Rd (Nairobi Rd to Uhuru Highway)	2.3		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	NMT-11	Wajak Way Corridor (Uhuru to Amuru Rd)	12.5		5-m Footpath and Bicycle Lane, Drainage	B	ditto	D	ditto	D	ditto		
	6. Uhuru Highway Improvement	NMT-12	Kenya Rd to City Boundary (First Avenue East/West Corridor)	0.0		5-m Footpath and Bicycle Lane, Drainage	B	Although traffic congestion during the construction period should increase substantially, NMT is raised upon completion.	C	Specific natural impacts are subject to further study.	A	Air pollution and noise will increase due to increased traffic.	
		NMT-13	First Avenue East/West Corridor (Ajuba Rd to Industrial Area)	3.2		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		NMT-14	Heshime Avenue Corridor (Outer Ring Rd to First Avenue East/West)	4.2		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		NMT-15	Mumias Road Corridor (Kileleshwa to Industrial Area)	5.9		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		NMT-16	Recreation Road Corridor (Mumias Rd Corridor to Industrial Area)	1.8		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		NMT-17	Jooon Rd (Outer Ring Rd to Lusaka Rd)	5.2		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		NMT-18	Lusaka Road Corridor (Country Bus Station to Industrial Area)	3.5		5-m Footpath and Bicycle Lane, Drainage	B	ditto	C	ditto	A	ditto	
		6. Uhuru Highway Improvement (L-1)	L-1	Uhuru Highway Improvement (Mumias Hill Rd to Lusaka Rd)	3.7	B-lane	Widening with NMT (8 to 12 lanes) Bridge/intersection improvement (8 to 12 lanes)	B	ditto	C	ditto	A	ditto
			6.2 Grade Separation / Improvement (UGS)	GIS-1	Ring Road/Westlands Junction (Uhuru Highway Corridor-1)	(0.5)		Grade Separation	B	ditto	C	ditto	A
GIS-2				Uhuru Highway Junction (Uhuru Highway Corridor-2)	(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto
GIS-3	University Way Junction (Uhuru Highway Corridor-3)			(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto	
GIS-4	Kenyatta Avenue Junction (Uhuru Highway Corridor-4)			(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto	
GIS-5	Paul Shisler Avenue Junction (Uhuru Highway Corridor-5)			(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto	
GIS-6	Sungata Road Junction (Uhuru Highway Corridor-6)			(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto	
GIS-7	Langata / Lusaka Road Junction (Uhuru Highway Corridor-7)			(0.5)		Grade Separation	B	ditto	C	ditto	A	ditto	
7. Public Transport	BI		1. Bus Incentive Policy	-	-	-	C	Specific social impacts are subject to further study.	D	No significant natural environment is affected.	D	Significant pollutants are not discharged.	
	BP		2. Bus Priority	-	-	-	C	ditto	D	ditto	D	ditto	
	BL		2.1 Bus Lane	-	-	1) Bus Lane	C	ditto	D	ditto	D	ditto	
	BW		2.2 Bus Way	-	-	2) Bus Way	C	ditto	D	ditto	D	ditto	
	PU-4		3. Upgrading of Existing Rail	-	-	-	A	Relocation of a large number of houses/sum units are currently undertaken by Kenya Railways.	D	ditto	D	ditto	
	PU-5		4. LRT	-	-	-	C	Specific social impacts are subject to further study.	D	ditto	D	ditto	
	8. Traffic Management	TC	1. Traffic Circulation in City Centre	-	-	-	C	ditto	D	ditto	D	ditto	
OP		2. Street Parking	-	-	-	C	ditto	D	ditto	D	ditto		
EN		3. Enforcement	-	-	-	C	ditto	D	ditto	D	ditto		
PE		4. Public Education	-	-	-	D	No significant social impact is expected.	D	ditto	D	ditto		
9. Traffic Institutions		TI-1	1. Human Resource Capacity Building	-	-	-	D	ditto	D	ditto	D	ditto	
	TI-2	2. Institute Development	-	-	-	D	ditto	D	ditto	D	ditto		

TABLE 15.3 (6/6) IEE FOR THE PROPOSED PROJECTS OF ALTERNATIVE 3

Type	Code	Description (Road / Junction Name and Section)	Rd Length (km)	Type of Cross Section	Type of Work	Social Environment		Natural Environment		Pollution	
						Level of Impact	Description	Level of Impact	Description	Level of Impact	Description
10. Expressway											
	E-1	Uhuru Highway (Stage 1)	5	4-lane	4-lane flyover	C	Specific social impacts are subject to further study.	C	Specific natural impacts are subject to further study.	A	Air pollution and noise will increase due to increased traffic.
			1.2	4-lane	4-lane Construction						
	E-2	C-2 route (Stage 2)	12	4-lane	4-lane flyover	C	ditto	C	ditto	A	ditto
			5.2	4-lane	4-lane Construction						
	E-3	C-3 route (Stage 3)	25	4-lane	4-lane flyover	C	ditto	C	ditto	A	ditto
			20.6	4-lane	4-lane Construction						

Legend: A - Significant impact expected; B - Some impact expected; C - Impact unknown; D - Little or no impact (not subject to IEE or EIA)

15.4 MAJOR ENVIRONMENTAL IMPACTS OF HIGH PRIORITY PROJECTS

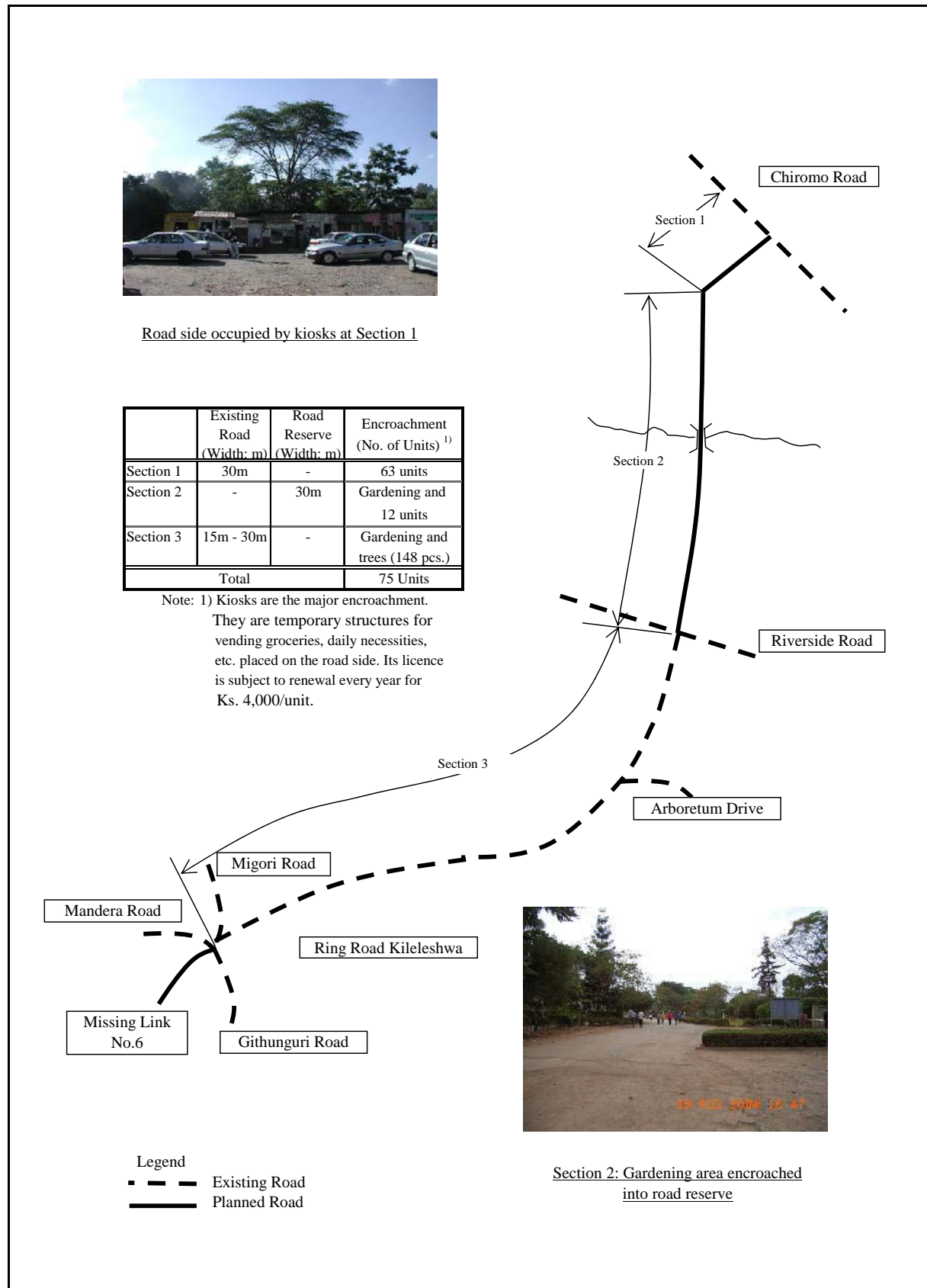


FIGURE 15.4-1a MAJOR ENVIRONMENTAL IMPACTS OF MISSING LINK NO.3

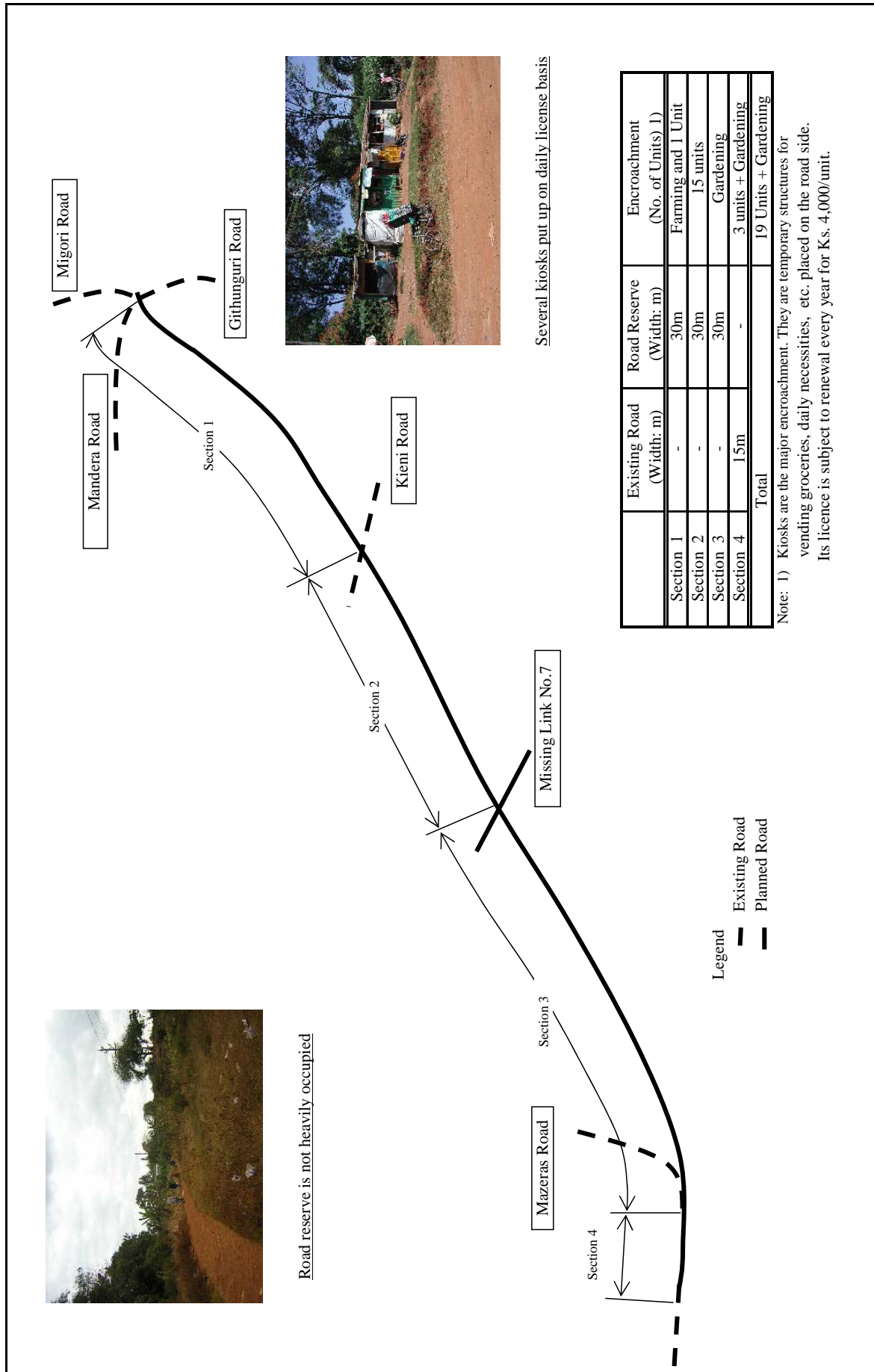


FIGURE 15.4-1b MAJOR ENVIRONMENTAL IMPACTS OF MISSING LINK NO.6

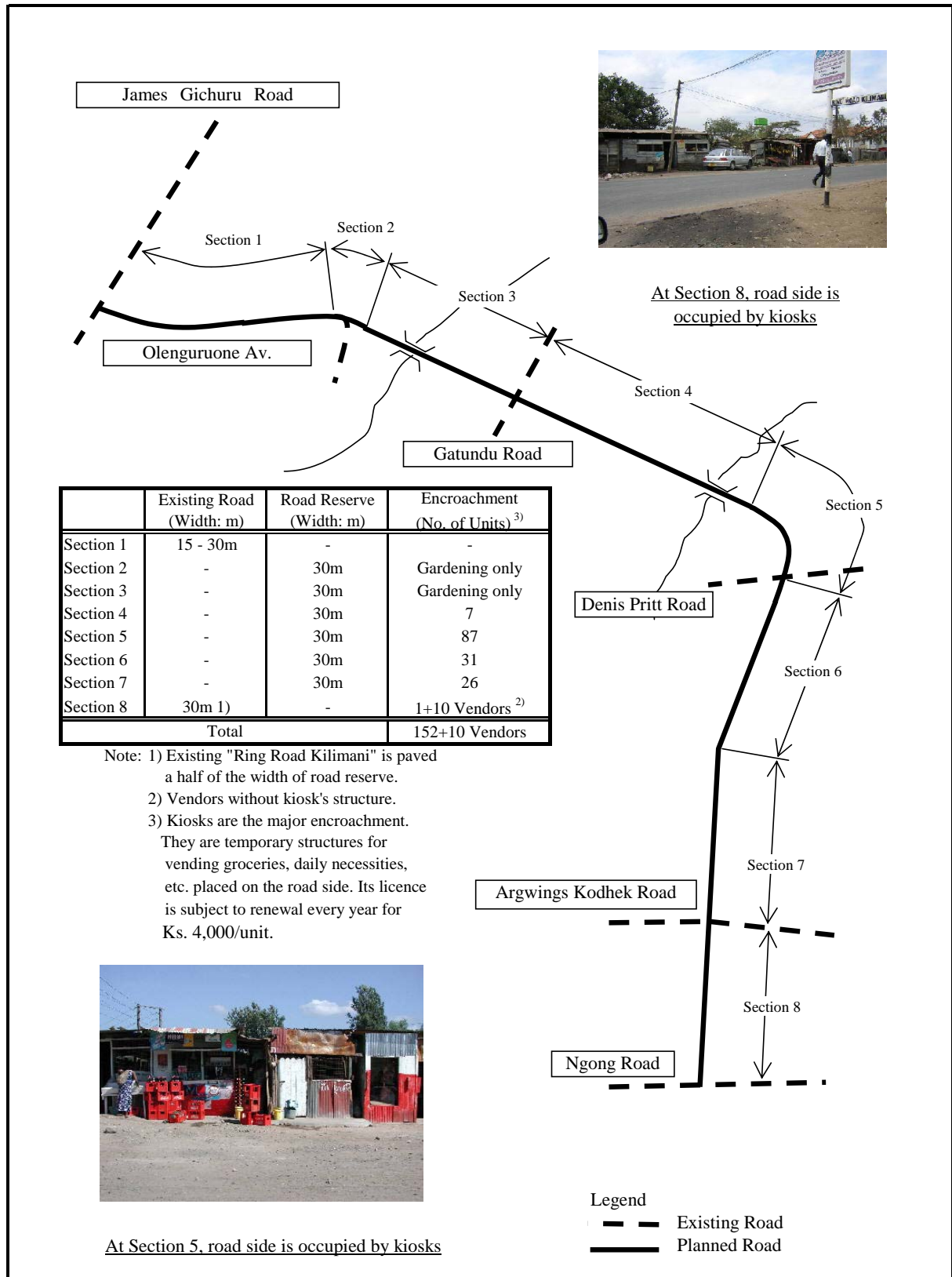


FIGURE 15.4-1c MAJOR ENVIRONMENTAL IMPACTS OF MISSING LINK NO.7

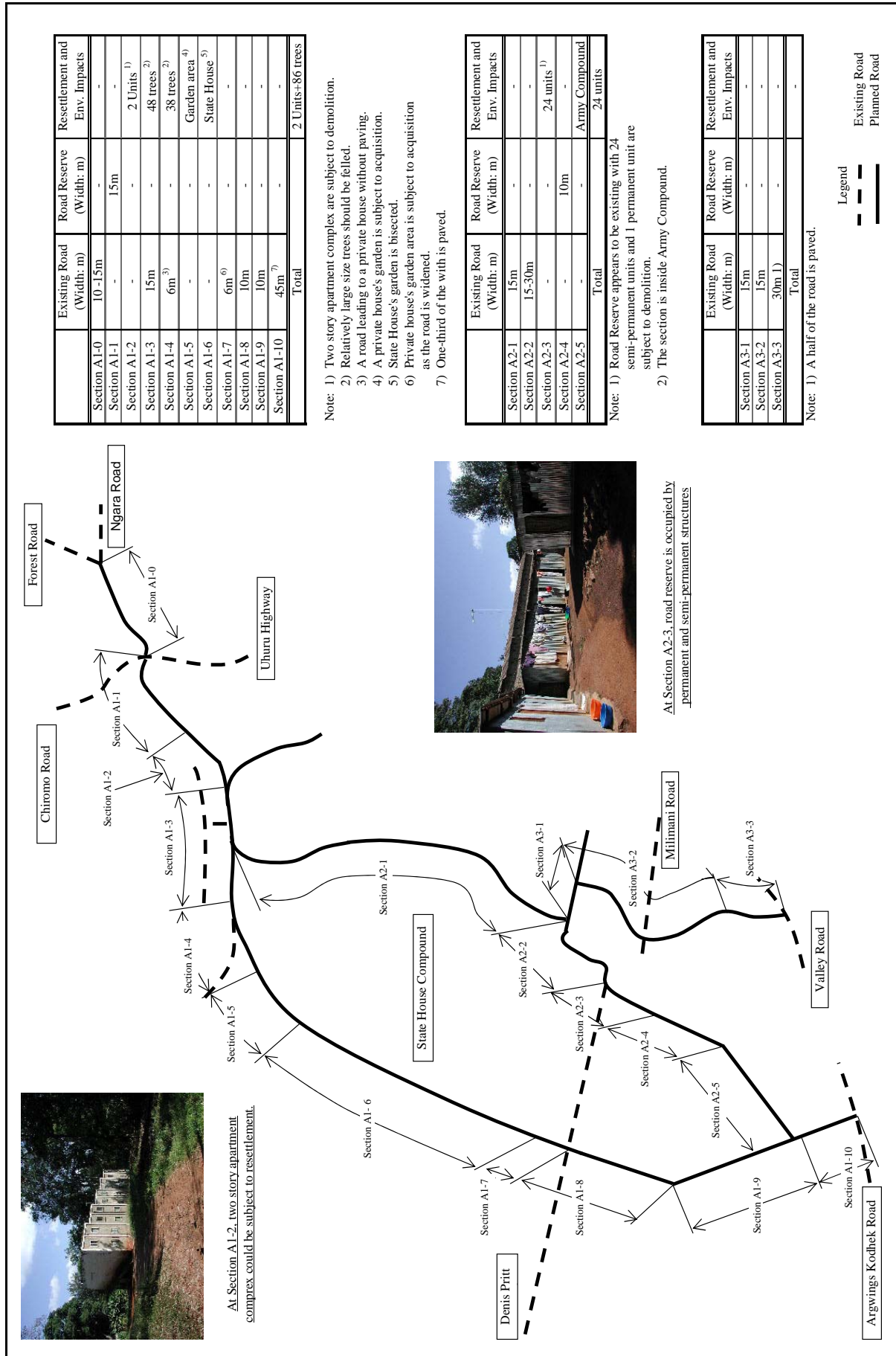


FIGURE 15.4-2a MAJOR ENVIRONMENTAL IMPACTS OF C-2 RING ROAD (STATE HOUSE AREA)

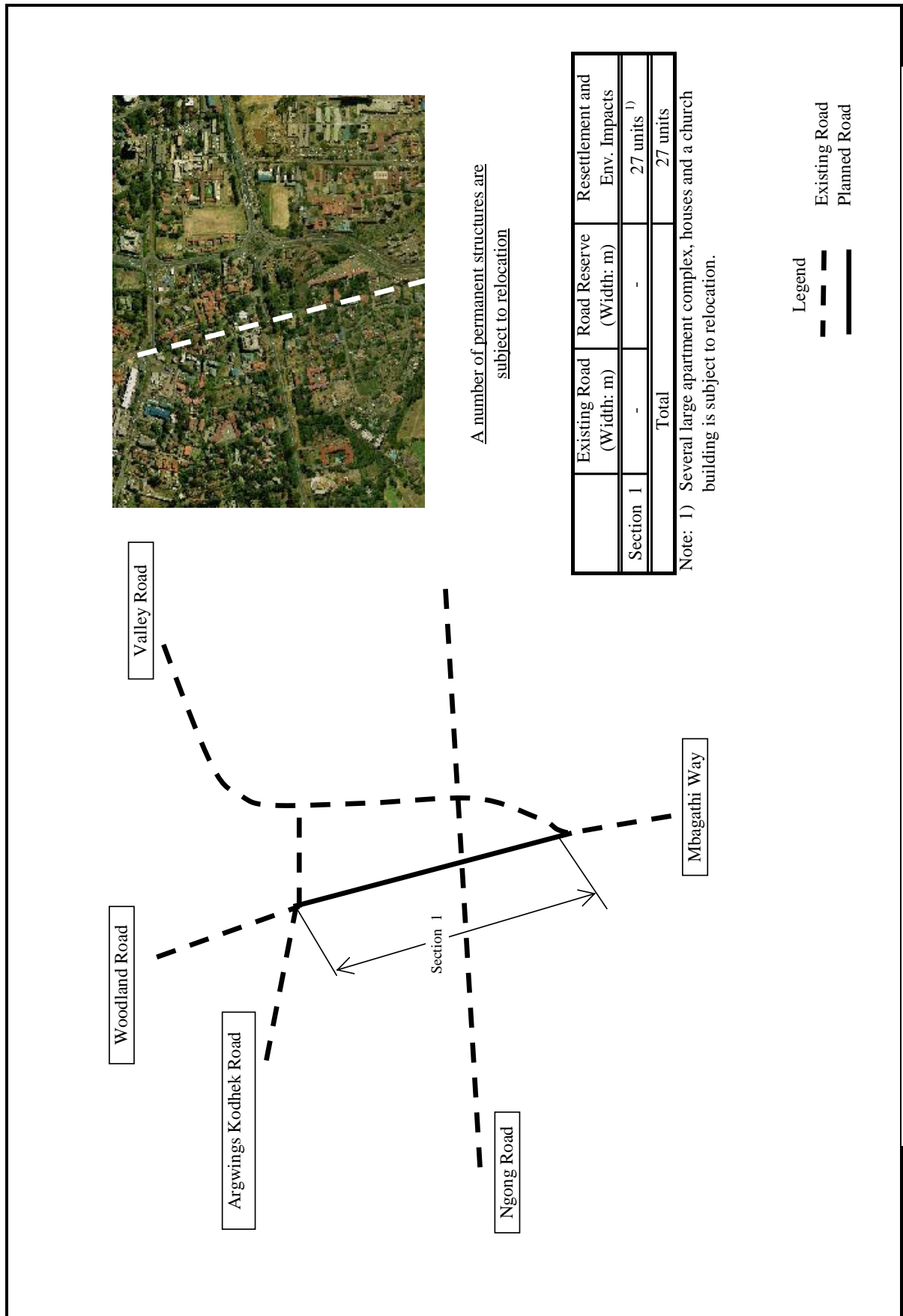
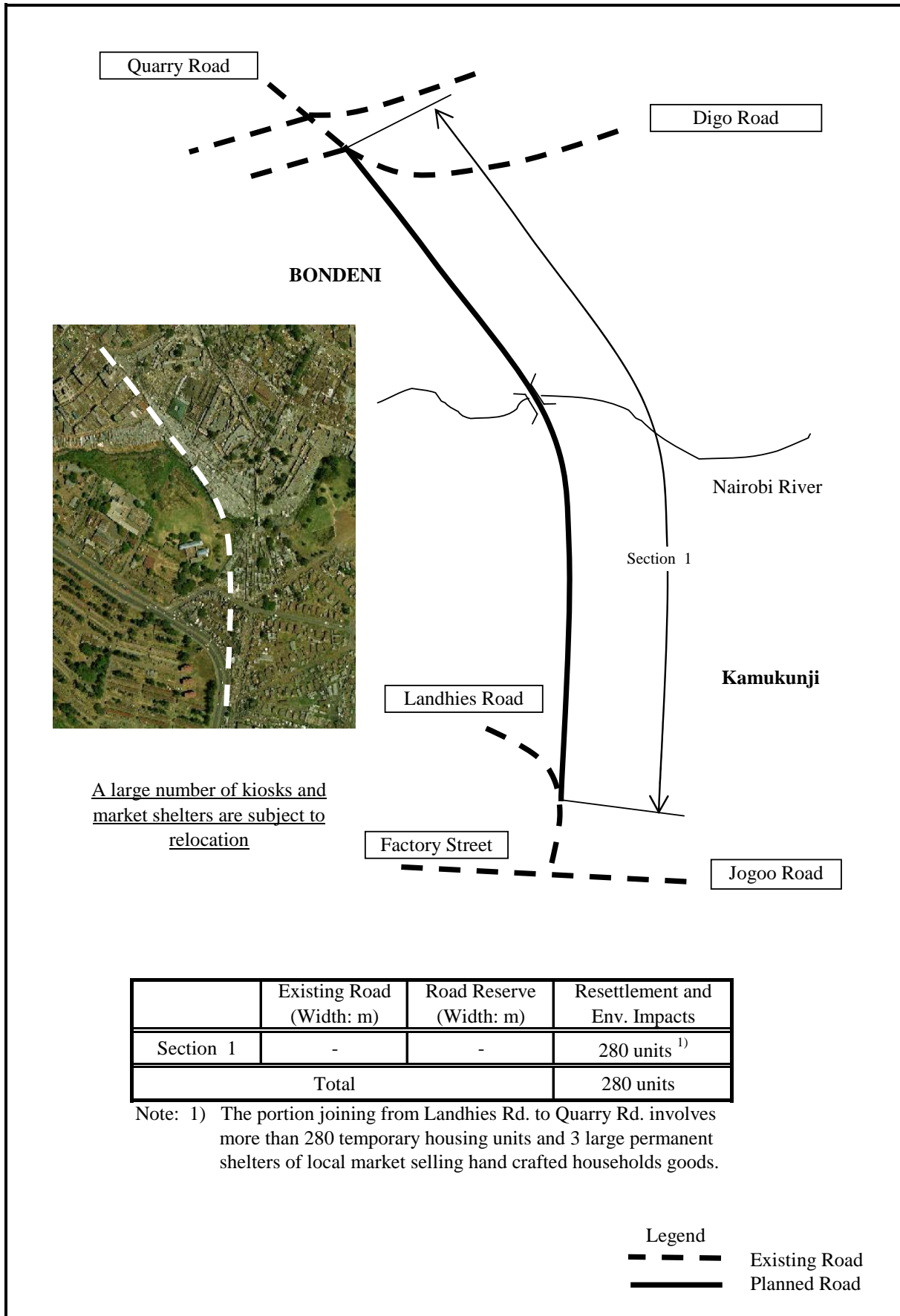


FIGURE 15.4-2b MAJOR ENVIRONMENTAL IMPACTS OF C-2 RING ROAD (NGONG ROAD AREA)



APPENDIX 15.4-2c MAJOR ENVIRONMENTAL IMPACTS OF C-2 RING ROAD (KAMUKUNJI-BONDENI AREA)

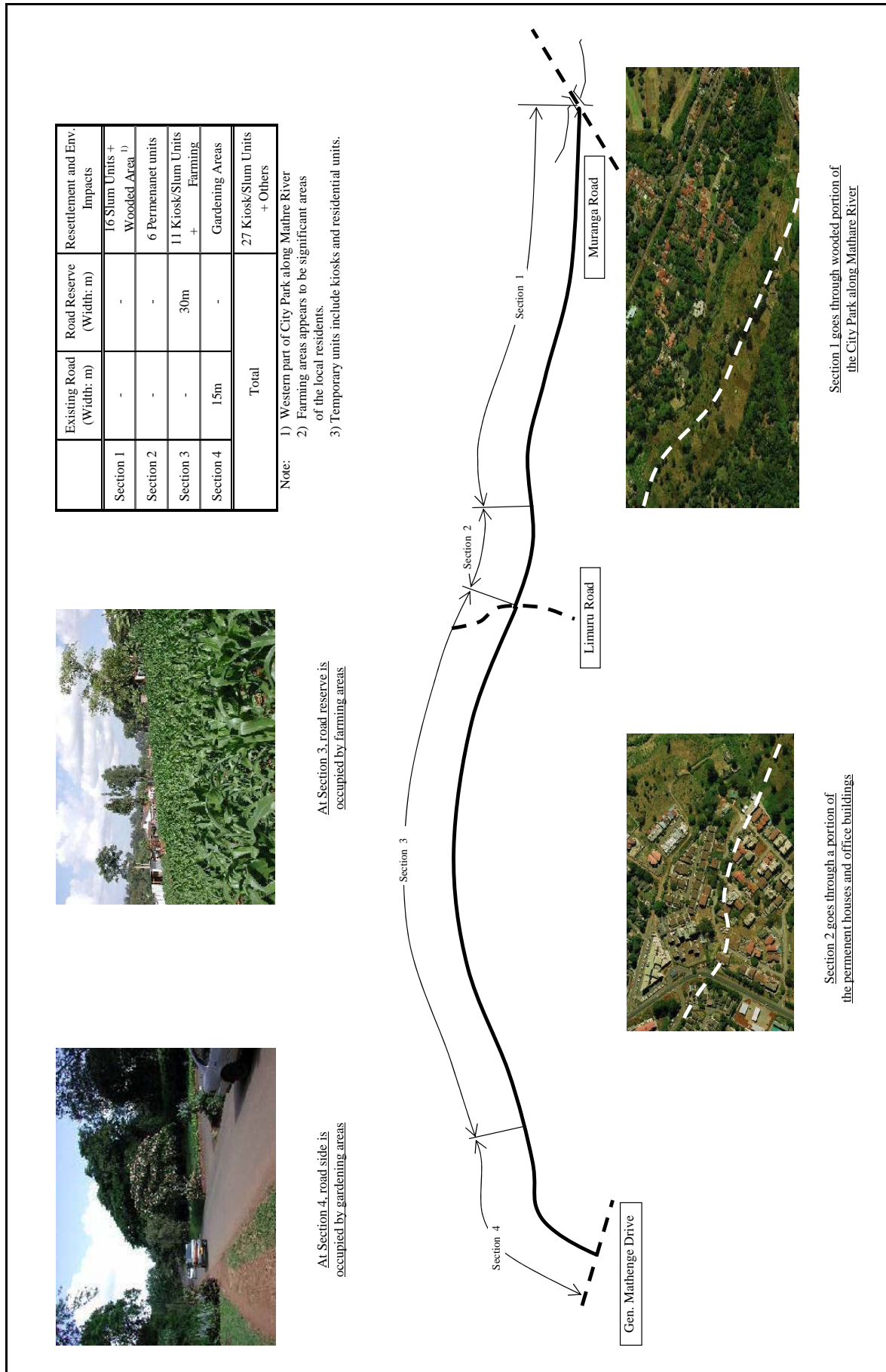


FIGURE 15.4-3a MAJOR ENVIRONMENTAL IMPACTS OF C-3 RING ROAD (CITY PARK AREA)

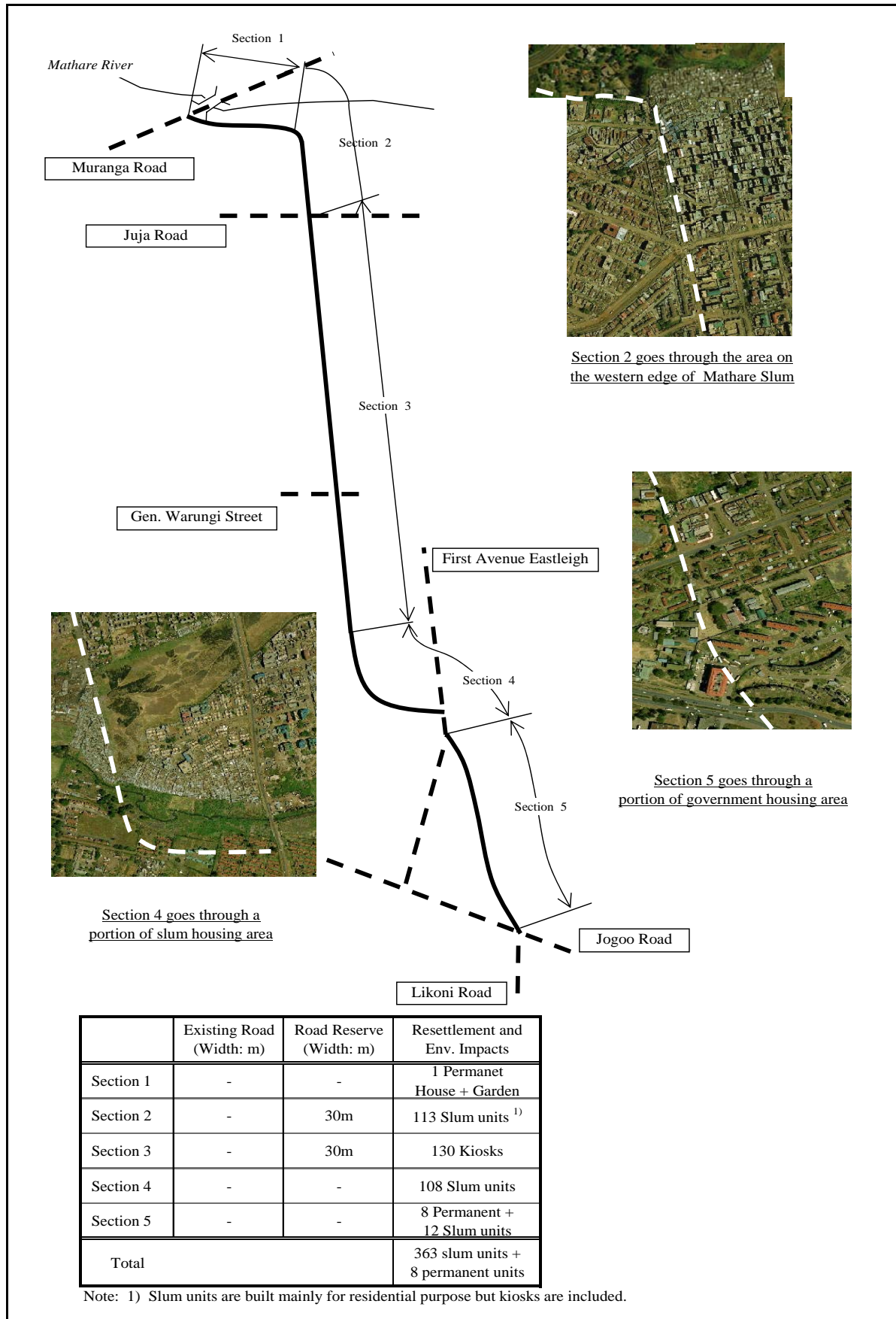


FIGURE 15.4-3b MAJOR ENVIRONMENTAL IMPACTS OF C-3 RING ROAD (PANGANI-SHAURI MOYO AREA)

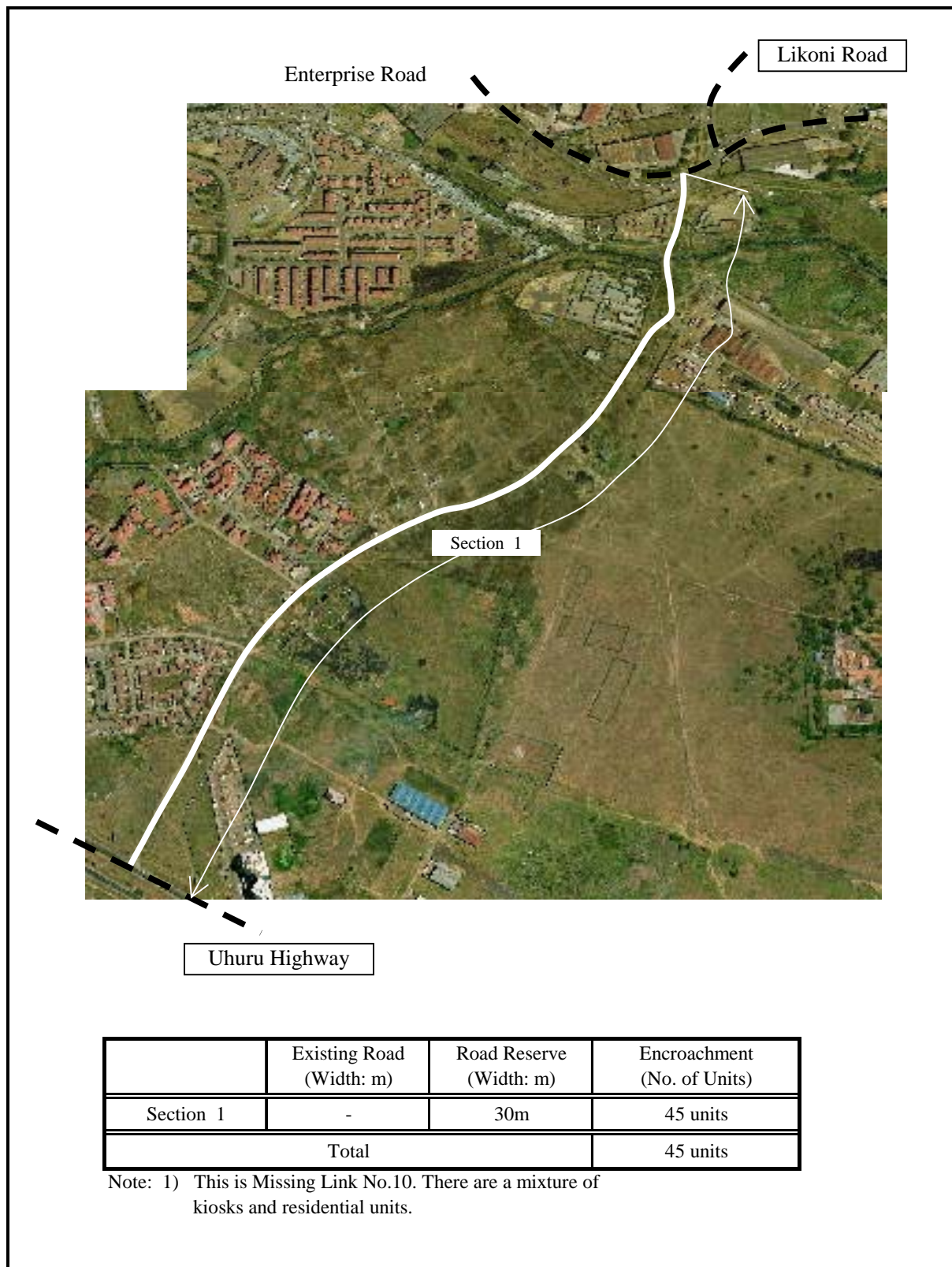


FIGURE 15.4-3c MAJOR ENVIRONMENTAL IMPACTS OF C-3 RING ROAD (NAIROBI SOUTH AREA)

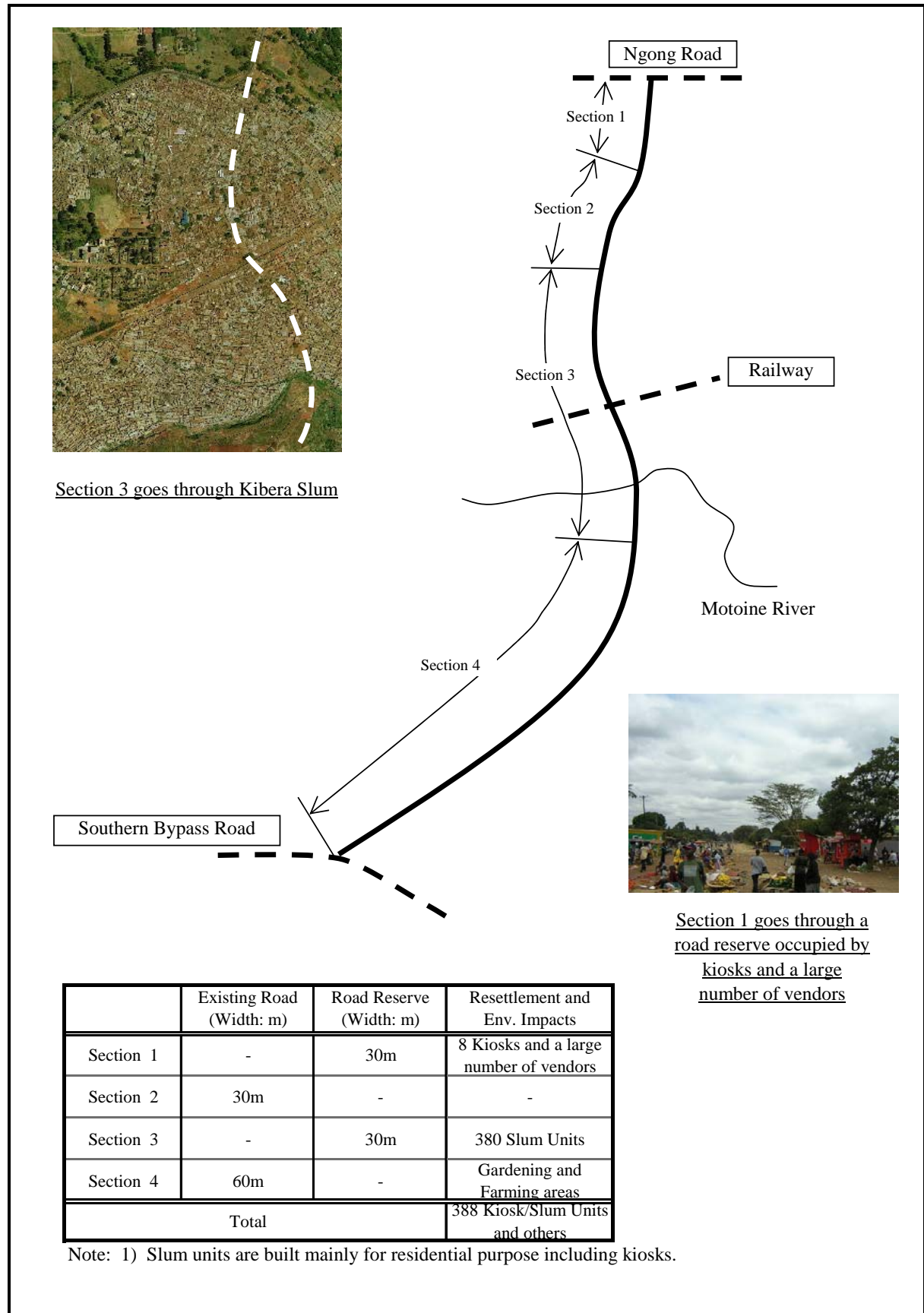


FIGURE 15.4-3d MAJOR ENVIRONMENTAL IMPACTS OF C-3 RING ROAD (KIBERA AREA)

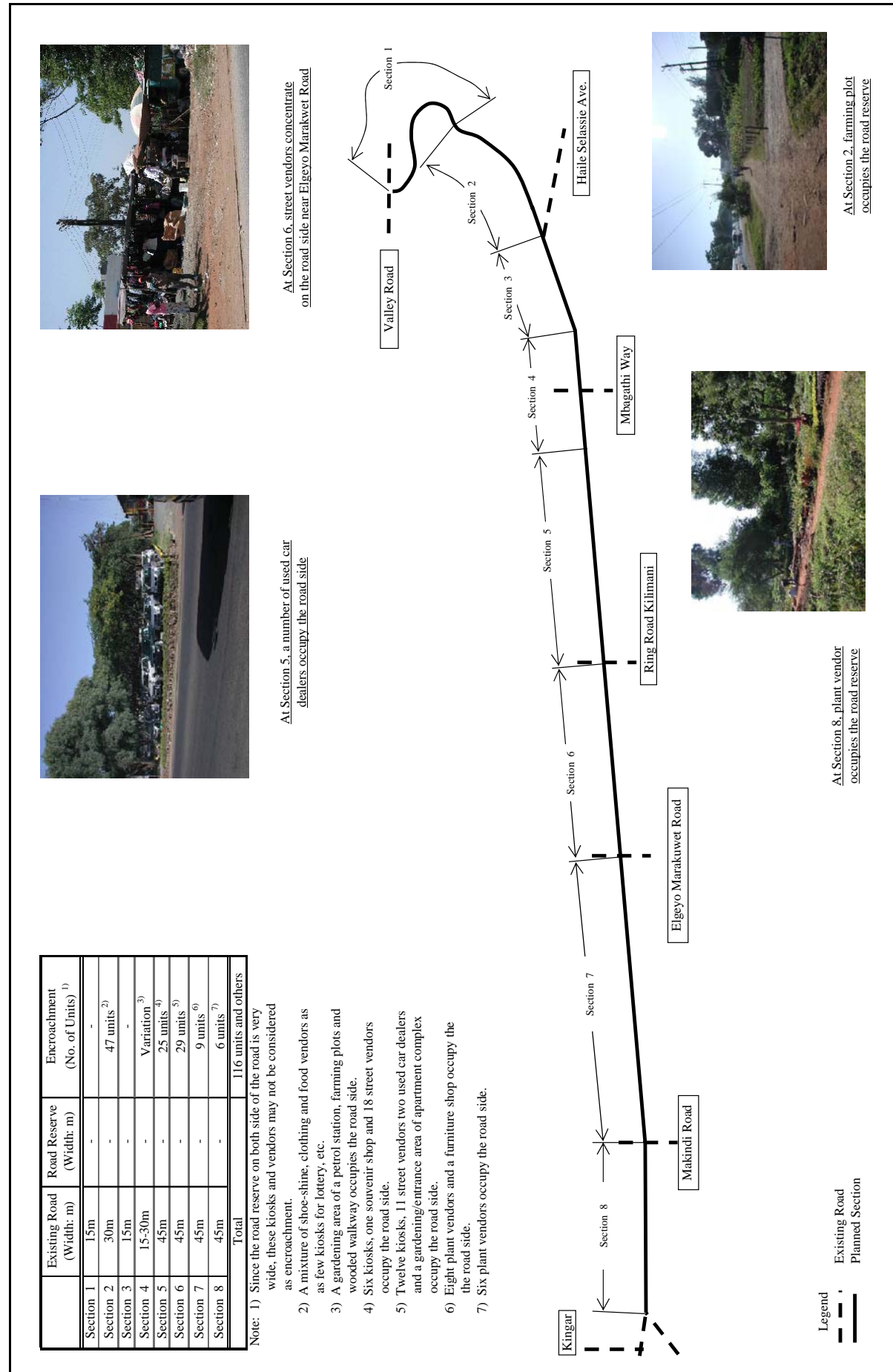


FIGURE 15.4-4 MAJOR ENVIRONMENTAL IMPACTS OF NGONG ROAD IMPROVEMENT PROJECT

15.5 CONTENTS OF RESETTLEMENT ACTION PLAN

Contents of Resettlement Action Plan (RAP)

1. Background of the Project
2. Impacts of the Project
3. Objectives of the Resettlement Action Plan
4. Measures to Minimize Land Acquisition and Losses
5. Socio-economic Profile of the Project-affected Persons (PAPs)
6. Resettlement Policy and Entitlement
7. Resettlement Site
8. Income Restoration Program
9. Implementation Arrangement
10. Implementation Schedule
11. Participation and Public Consultation
12. Monitoring and Evaluation
13. Grievance Redress
14. Cost Estimate

Definition of Terms

Resettlement Action Plan (RAP) is a time-bound action plan with resettlement strategy, objectives, impact, entitlement, socio-economic survey, policy framework, legal framework, measures to minimize impacts, resettlement site, compensation, income restoration, resettlement implementation arrangement including assistance, resettlement schedule, participation and consultation, grievance redresses, and monitoring and evaluation for those subject to resettlement.

Project Affected Persons (PAPs) indicates any juridical person being as it may an individual, a household, a firm or a private or public who, on account of the execution of the project, or any of its components or sub-projects or parts thereof would have their:

- (i) Right, title or interest in any structure, land or any other asset acquired or possessed, in full or in part; and/or
- (ii) Business, occupation, work, place of residence or habitat adversely affected; and/or
- (iii) Standard of living adversely affected.

Compensation means payment in cash or in kind to replace losses of land, housing, income, and other assets affected by the project.

Entitlement defines a right to receive mitigation measures such as compensation, income restoration, relocation assistance, and other support.

Income restoration/Livelihood restoration/Rehabilitation means the process to restore income earning capacity, production levels and living standards in a longer term.

Replacement cost is the method of valuation of assets that helps determine the amount sufficient to replace lost assets and cover transaction costs as follows:

- (i) For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use of located in the vicinity of the affected land, plus the cost of preparation of the land to the level similar to those of the affected land, plus the cost of any registration and transfer taxes;
- (ii) For land in urban areas, it is the pre-displacement market value of land of equal size and use of with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes; and
- (iii) For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the

construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes.

In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset.

Census is a data collection technique of completing enumeration of all PAPs and their assets through household questionnaire. Census's objectives are as follows:

- (i) To prepare a complete inventory of PAPs and their assets as a basis for compensation;
- (ii) To identify entitled and non-entitled persons; and
- (iii) To minimize impact of later influx of "outsiders" to project area.

Socio-economic survey is carried out in order to prepare profile of PAPs and to prepare for Resettlement Action Plan. About 10-20 percent sample of PAPs population is surveyed through household questionnaire at the time of feasibility study while 100 % of them should be surveyed at the time of project implementation. The survey result is used:

- (i) To assess incomes, identify productive activities, and plan for income restoration;
- (ii) To develop relocation options; and
- (iii) To develop social preparation phase for vulnerable groups.

Cut-off date determine eligibility for entitlement. It is normally the date census begins. The cut-off date could also be the date the project area was delineated, prior to the census, provided that there has been an effective public dissemination of information on the area delineated, and systematic and continuous dissemination subsequent to the delineation to prevent further population influx.

Vulnerable group is defined as the indigenous people, ethnic minorities, the poorest of poor population, women, children, the aged, the disabled, and other socially/economically vulnerable groups who would be adversely affected from the project.

Grievance Redress procedures set out the time frame and mechanisms for resolutions of complaints about resettlement from PAPs. Grievance redress can be provided through informally-constituted local committees with representation from key stakeholder groups. Grievances can also be addressed through formal channels, with unresolved grievances being dealt with at progressively higher levels.

Permanent Structure is defined as the structure built with resilient materials such as steel reinforced concrete, stones, bricks with resilient beams and pillars with roofing of tiles resilient beams and tiles or any other permanent nature of materials built all in accordance with the building code of the country and classified as permanent structure.

Temporary structure is defined as the structure built not in accordance with the building code of the country and classified as temporary use for business, occupation and/or resting or residing.

Kiosk is defined as the structure built and placed on the road, walkway or road reserve for the purpose of selling consumables or services to the general public under the jurisdiction of the licensing system of Nairobi City Council.

Street Vendor is defined as a person or a group of persons selling consumables or services to the general public on the road, walkway or road reserve without temporary nature of structure such as kiosk and that they are without license of Nairobi City Council.

1. Background of the Project
Objectives, scope and location of the project
2. Impacts of the Project
Major impacts caused by the Project including land acquisition and resettlement principles and objectives
3. Objective of the Resettlement Action Plan
Primary objectives of RAP are described in order to minimize the impacts imposed upon PAPs subject to resettlement. Land acquisition and resettlement principles and objectives are also described as follows:
 - a. Land acquisition
 - Map of the area affected by land acquisition
 - Total land area acquired for the project
 - b. Population/households affected from land acquisition and resettlement
 - Total number of PAPs
 - Size of relocation (number of population/households to be relocated)
 - Size of those who lose their assets
 - Size of those whose business, occupation, work are adversely affected
4. Measures to Minimize Land Acquisition and Losses
 - a. Actions and measures to be conducted for minimizing impact
 - b. Consideration of alternatives with special attention to avoid and minimize involuntary resettlement
5. Socio-economic Profile of the Project-affected Persons (PAPs)
Primary information on the PAPs subject to involuntary resettlement is described. In the case of road improvement project in Nairobi, there would be possibility that there area a number of permanent structures, kiosks including temporary shelters for various businesses such as garages, and street vendors involved in it. Using questionnaires, at least 10 % of them should be sampled and analyzed in order to illustrate the conditions of the PAPs at the time of project implementation. The following is generally studied:
 - a. Census and Inventory of Losses
 - Demographic, education, income and occupational profiles of PAPs

- Land type and land use (agricultural, residential, commercial land)
 - Type of crops and trees
 - Buildings type (size, materials used)
 - Inventory of common property resources
 - Inventory of assets to be acquired
 - Existing civic facilities and infrastructure, etc.
- b. Socio-economic profiles of PAPs
- Size, gender, age, number of school children of each household
 - Occupation and means of livelihood
 - Income level and economic activities of PAPs, including vulnerable groups
 - Race, language, religion
 - Social support system, infrastructure of the community
 - Needs of PAPs regarding the income restoration program and relocation
 - Perception towards the project and resettlement, etc.
- c. Information on those without legal title to land or assets
6. Resettlement Policy and Entitlement
- Laws and regulations of the Government of Kenya in terms of resettlement policy and entitlement is described as follows:
- a. Compensation policy of the Government of Kenya on the private households, business establishment, kiosks and street vendors who are with legal title that are affected by the Project
 - b. Eligibility for compensation/assistance/rehabilitation
 - c. Entitlement matrix
 - d. Assistance, support, compensation options
 - e. Cut-off date
 - f. Compensation/assistance policy towards those who without legal title
7. Resettlement Site
- a. Method of site selection and site alternatives
 - b. Location, layout, and design of resettlement site
 - c. Resettlement site development (infrastructure, social service, etc.)
8. Income Restoration Program
- a. Background of Income Restoration
 - b. Objective and policy of income restoration
 - c. Income Restoration Program

- Constraints and opportunities for income generation
- Analysis of needs, capacity, and existing skills of PAPs
- Analysis of economic activities of PAPs and communities
- Consultation and participation process
- On-going income-generating or livelihood development programs (e.g., poverty alleviation) in the project area
- Provisions for group-specific, targeted income restoration plans (e.g., microcredit or small development)
- Income restoration options
- Financial source of income restoration plans
- Implementing arrangement of the program (e.g., assistance from government agencies, community organizations, NGO, or CBO)
- Consideration of vulnerable people
- Program implementing schedule
- Monitoring

9. Implementation Arrangement

- a. Responsibilities and roles of related organizations in charge of resettlement action plan, resettlement execution, land acquisition, consultation, resettlement site preparation, income restoration, monitoring and evaluation, etc.
- b. Description of cooperation between related organizations such as the coordination between an executing agency of the Project, NGOs, and resident organizations concerned with the Project and welfare of PAPs.

10. Implementation Schedule

Schedule of resettlement-related activities

11. Participation and Public Consultation

- a. Policy of participation and consultation with PAPs
- b. Place, timing, method, topics, meeting memorandum of public consultation and/or stakeholder meetings held in the past including PAPs' opinion regarding the project and resettlement
- c. Plan of participation and consultation
- d. Leaflet of resettlement distributed to PAPs, including followings:
 - Objectives of the Project
 - Service area of the Project and Project site
 - Cost estimation and sources of capital

- Project Implementation Planning (i.e., F/S, EIA, and Basic Resettlement Plan preparation)
- Project Impact
- Definition of Eligibility
- Resettlement and compensation principles
- Compensation policy
- Subsidize allowances
- Settling complain (Grievance Redress procedure)

12. Monitoring and Evaluation

Monitoring and evaluation of the PAPs on the following aspects are carried out:

- a. Performance monitoring on the physical progress against milestones established in the resettlement action plan;
- b. Impact monitoring for the assessment of effects on resettlement in terms of the effectiveness of resettlement action plan and its implementation in meeting the needs of the PAPs;
- c. Internal performance monitoring process in terms of the method, indicators, period, frequency, implementation arrangement of the monitoring;
- d. Methodology of the external monitoring;
- e. Frequency of reporting and content for internal and external monitoring;
- f. Evaluation method of monitoring result;
- g. Process for integrating feedback from internal monitoring into implementation

13. Grievance Redress

- a. Step-by-step process for registering and addressing grievances and specific details regarding a cost-free process for registering complaints, response time, and communication modes;
- b. Mechanism for appeal;
- c. Provisions for approaching civil courts if other options fail

14. Cost Estimate

- a. Statement of financial responsibility and authority
- b. Source of funds and the flow of funds
- c. Estimated budget, by cost and by item, for all resettlement costs including planning and implementation, management and administration, monitoring and evaluation and contingencies
- d. Provisions to account for physical and price contingencies