NON-TECHNICAL SUMMARY

This Non-Technical Summary provides a summary of the Environmental and Social Impact Assessment (ESIA) Report prepared as part of the EISA process for phase 2 of the Upgrade of the Eastern Entrance to Douala project.

1. INTRODUCTION

The National Road 3 (NR3), running from the Autonomous Port of Douala through Douala to the interior of the country, is a vitally important road within Cameroon as it links Cameroon, and neighbouring countries, with the Port at the Atlantic Ocean. The upgrade of the NR3 has formed part of the Cameroonian Ministry of Public Works' (MINTP) planning for many decades, with a 150 to 200 m wide Right of Way (ROW) corridor declared in 1984. The ROW for the NR3 within Douala was the subject of an expropriation and compensation procedure in 1985. In 2011, a Compensation and Resettlement Plan (Plan d'Indemnisation et de Réinstallation (PIR)) was once again drawn up to manage the expropriations required to redress illegal settlements within the ROW. Implementation of the PIR included the removal of all residential and commercial infrastructure from the central portion of the ROW as required for the project design.

The NR3 road rehabilitation from the centre of Douala to the Dibamba River bridge is titled the "*Eastern Entrance of Douala*" project. The first phase of this rehabilitation project, from the centre of Douala (PK0) up to the Boko-Tradex exchange (PK9 + 925), was completed and opened during 2016 and 2017. The MINTP have now appointed Magil Construction Corporation (Magil) to construct phase 2 of the *Eastern Entrance of Douala* project from the Boko-Tradex exchange (PK9 + 925) up to the Dibamba River bridge (PK18 + 825) (see Figure 1).

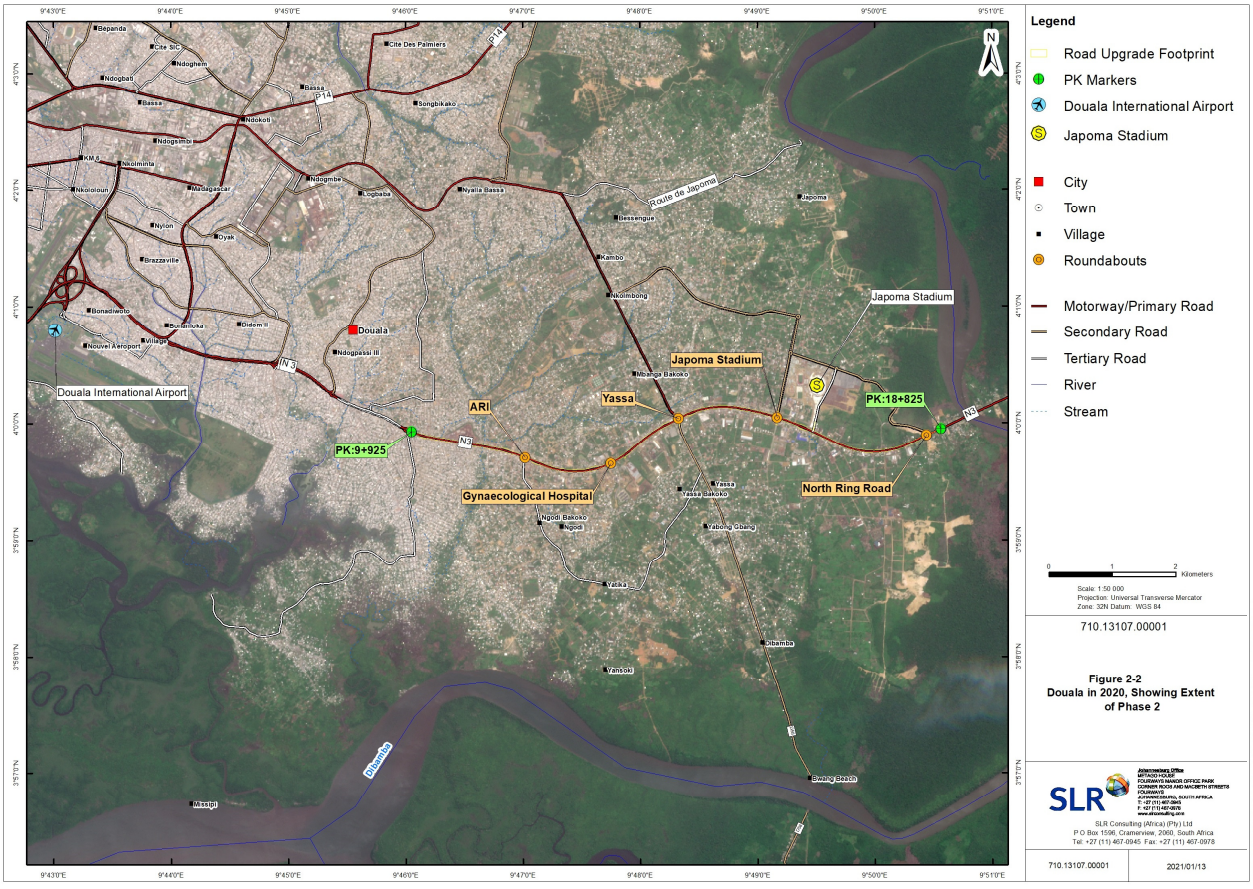

FIGURE 1: DOUALA IN 2020, SHOWING THE EXTENT OF PHASE 2

A Certificate of Environmental Compliance was issued to MINTP for construction of all phases of the *Eastern Entrance of Douala* project in 2012. As Magil is seeking finance from Standard Chartered Bank (SCB) and United Kingdom Export Finance (UKEF) for construction of phase 2, a follow-up ESIA process was undertaken in 2020 in order to address project' environmental and social risks in line with international lender requirements. Following concerns that the 2020 ESIA did not sufficiently align with international lender standards, Magil appointed SLR Consulting (Africa) (Pty) Ltd (SLR) to undertake a gap analysis of the previous assessment and, following this, to compile an updated ESIA Report to close the identified gaps and meet the International Finance Corporation (IFC) Performance Standards.

The purpose of the ESIA Report is to present the proposed project, detail the current physical, biological and social conditions of the site, and to analyse the impacts that the activities associated with the implementation and operation of the project are likely to generate on the receiving environment. The document also proposes measures that, as part of a Construction Environmental and Social Management Plan (CESMP), will aim to avoid or mitigate negative impacts or improve beneficial impacts.

2. PROJECT DESCRIPTION

2.1 BACKGROUND

Douala is one of the two most populated cities in Cameroon and is an important commercial hub, with more than half of Cameroon's economic activity and industrial production occurring here. The NR3, between Yaounde and Douala, is a critical transportation corridor for Douala, Cameroon, and the wider west African region. The volume of traffic using and crossing the NR3 has grown significantly and there is substantial unregulated use and occupation of the roadsides. Current accesses through Douala are undersized, resulting in traffic congestion, which causes regular disruption to both regional transportation and intercity traffic.

Widening of NR3 will facilitate development the of Yassa industrial area and improve access of inhabitants of the Douala 3rd district. MINTP has facilitated various studies to inform the planning and design of the NR3 from the centre of Douala to the Dibamba River bridge. The main aims of the NR3 upgrade project are to:

- decongest the NR3 road course, in order to allow the crossing of the city without traffic jams;
- considerably improve the functioning of the stormwater systems along the road;
- facilitate trade between neighbourhoods intersecting the NR3;
- encourage the safe movement of persons and goods;
- improve access to markets, ports, Yassa industrial areas, 3rd district inhabitants and to public utilities such as hospitals and schools;
- enable the populations living along the road and all the inhabitants of Douala to see their living and transport conditions change and thus improve their living environment;
- meet the needs of accessibility on days of sporting events at the Japoma stadium in Douala; and
- improve road safety by providing pedestrian crossing areas and adequate parking.

Phase 1 of the project was preceded by the PIR and included some bulk earthworks within the phase 2 footprint up to the foot of the Dibamba River bridge, leaving the roadway footprint clear of residential and commercial infrastructure before Magil took over the site.

2.2 PROJECT COMPONENTS

The main phase 2 project components include:

- 9 km of road widening,
- construction of five new roundabout interchanges, including:
    - construction of an overpass at Japoma;
    - construction of an underpass at Yassa;
- stormwater management infrastructure, including nine hydraulic structures; and
- other related road infrastructure (i.e., landscaping, lighting, bus stops, parking areas, etc.).

Depending on when the funding for the project is secured with lenders, the anticipated starting date for construction is March 2021. It is anticipated that the project would take up to 18 months to complete. The main project components are discussed in further detail below.

2.2.1 Road Widening

The primary component of the phase 2 project is the widening of the roadway from PK 9+925 to PK 18+825. The widening will extend the roadway from the current two lanes to include:

- 2 transit lanes;
- 4 side service lanes;
- 2 sidewalks; and
- 2 Emergency Stop Strips (ESS) (replaced by pedestrian crossing points at the vicinity of roundabouts) of 2 metres each.

The proposed six-lane roadway concept is illustrated in Figure 2 and a typical cross section of the roadway layout is provided in Figure 3. The width of the roadway sections vary between 41 m and 70 m and the widening will remain within a portion of the declared ROW.

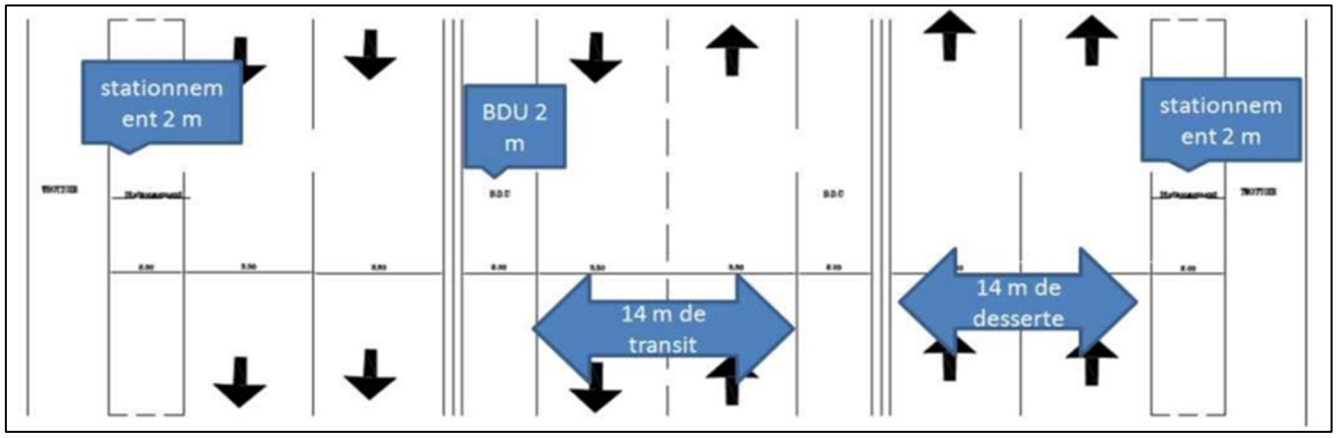

FIGURE 2: TRACK CONCEPT PLAN

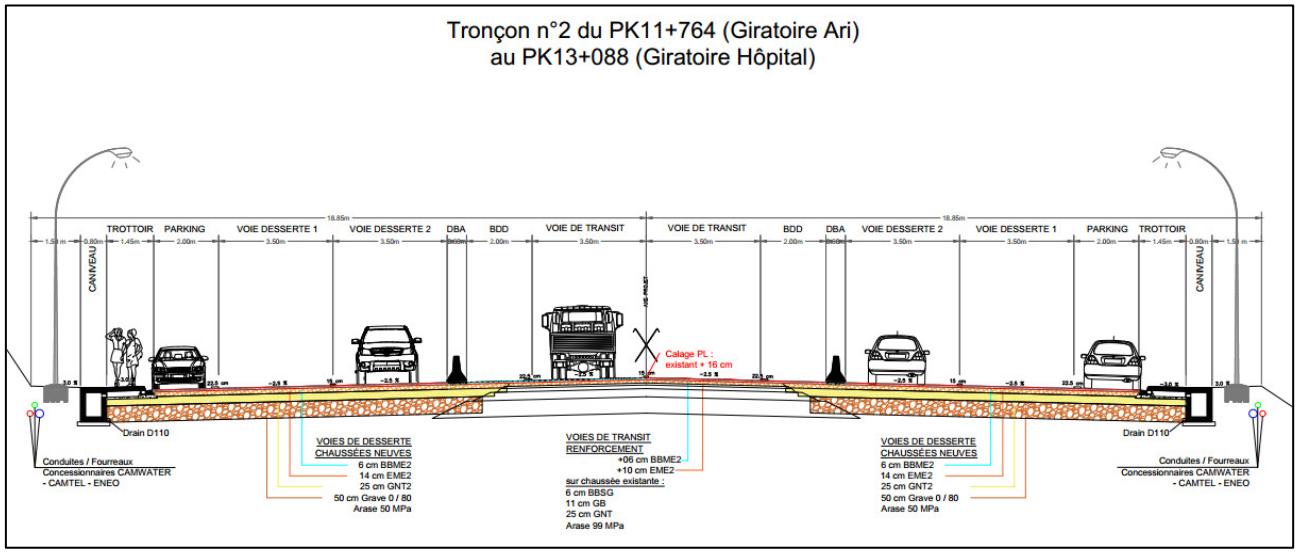

FIGURE 3: A TYPICAL CROSS SECTION OF THE ROADWAY LAYOUT

2.2.2 Roundabouts

The project includes the construction of five roundabouts. Three of the roundabouts will be developed at ground-level, with the Yassa and Japoma roundabouts being uneven crossings. At the Yassa roundabout through traffic would use an open portico type underpass, while at the Japoma roundabout, through traffic would use an overpass (bridge with abutments). The layouts and locations are illustrated in Figures 4 to 8.

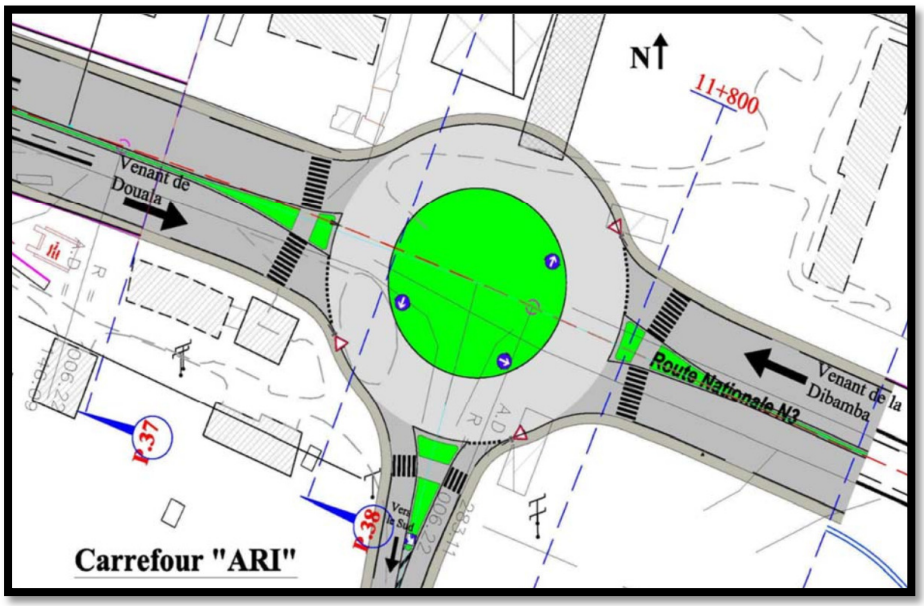

FIGURE 4: ARI ROUNDABOUT AT PK11 + 750

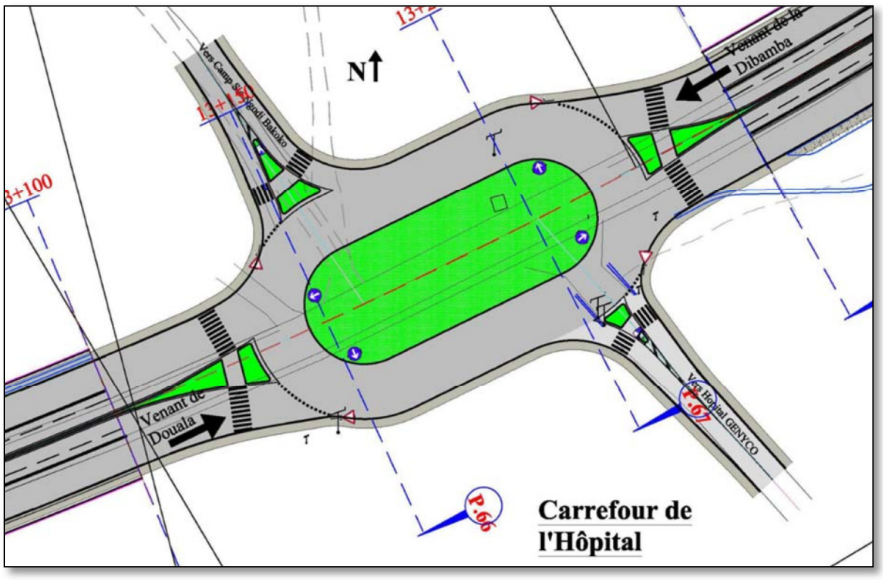

FIGURE 5: GYNAECOLOGICAL ROUNDABOUT AT PK13 + 150

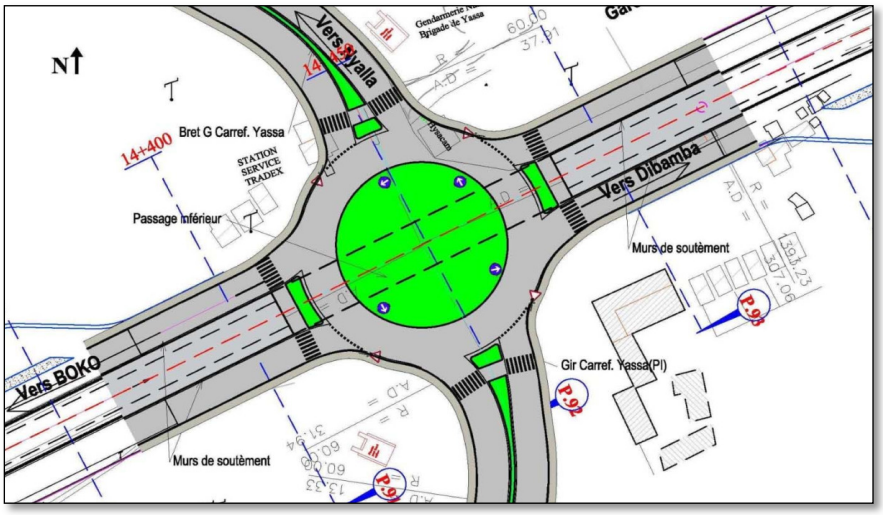

FIGURE 6: YASSA ROUNDABOUT WITH UNDERPASS AT PK14 + 450

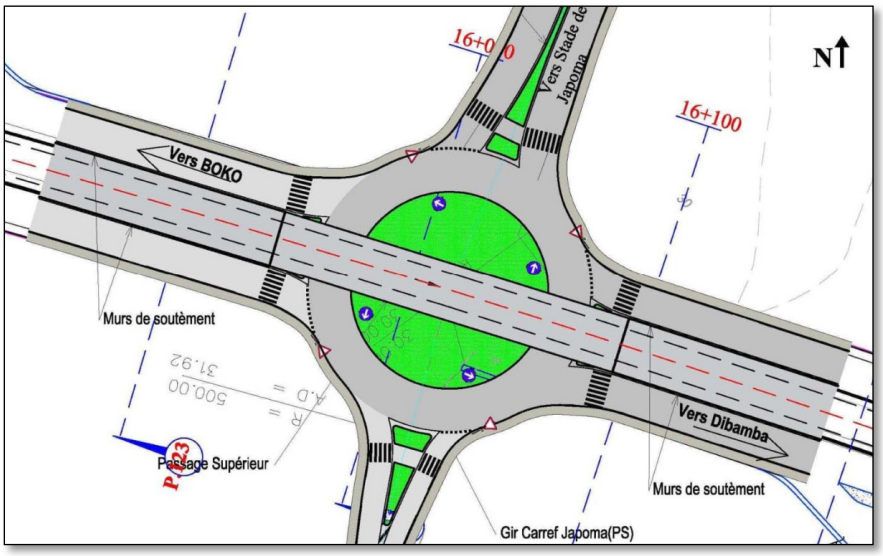

FIGURE 7: JAPOMA STADIUM ROUNDABOUT WITH OVERPASS AT PK16 + 050

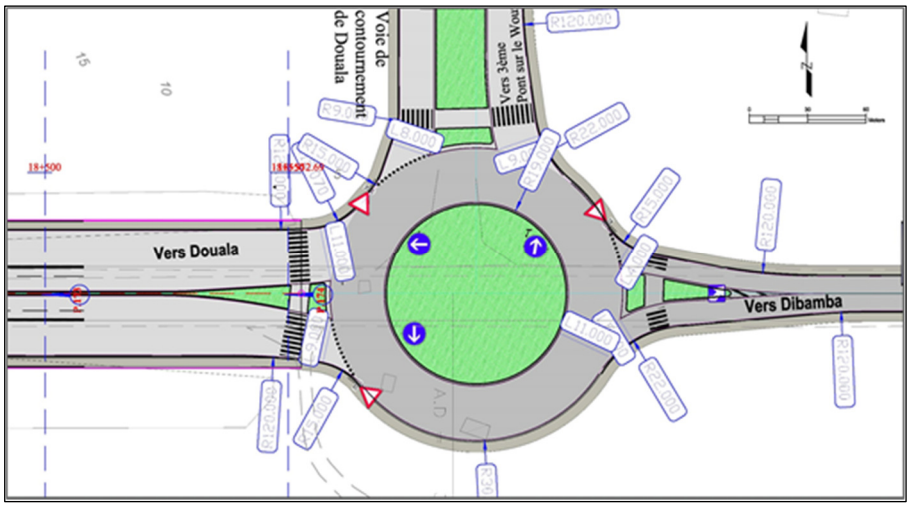

FIGURE 8: NORTH RING ROAD ROUNDABOUT AT PK16 + 050

2.2.3 Stormwater Management and other Related Road Infrastructure

The road upgrade project would include the expansion or replacement of existing stormwater drains/culverts in order to provide for improved urban drainage along the road. This would also include a stormwater collection network to collect water from the roadway and embankments and cleaning out of existing ditches to improve the flow of run-off water.

As part of urban improvements, the project includes development of:

- nine bus stops with bus shelters;
- four taxi stop areas;
- five parking areas for motorcycles;
- two parking areas for vehicles (ARI and Yassa roundabouts, 30 parking spaces at each);
- ten pedestrian crossings positioned in safe positions upstream of bus stops;
- collection areas for domestic waste, located at bus or taxi stops;
- speed bumps along the road to slow the traffic; and
- road signage and safety equipment.

Public lighting is planned along the roadway, mainly near inhabited areas. LED lighting will be provided to reduce power consumptions and increase durability and these will be powered from the existing electrical network.

Landscaping is planned along the roadway in order to improve the urban environment. This will include the planning of trees and landscaping of the central islands at roundabouts and at parking areas.

Existing services (i.e. electrical, telephone, water) within the footprint of the roadway will be relocated during construction.

2.2.4 Other Construction-related Activities

Traffic Deviations

In order to facilitate localised construction in the roadway, minor temporary traffic deviations would be required. The deviations will be open to all traffic and will have appropriate signage to ensure safe traffic flow throughout

construction activities. Where longer deviations are required, traffic will be diverted onto alternate roads. In these cases, heavy vehicles will be routed via the roadway and will not be permitted to use deviations.

Sourcing of Road Building Material

The following sources will be likely be used for material supply:

- Hard Aggregate – commercial Logbadjeck Quarry;
- Asphalt – asphalt plant at the Logbadjeck Quarry;
- Sand – Folepe Sand Mine; and
- Concrete – local, commercial ready-mix suppliers.

2.2.5 Emergency works

Several 'emergency works' activities are required prior to the construction phase of the project. In some situations, these activities have been completed prior to this ESIA, whilst others are currently underway or pending. This included the installation of hydraulic structures (pre-cast 1.5 m square culvert blocks) within the nine water flow pathways. Given the timing of these activities, the ESIA will not be able to propose mitigation measures to avoid or minimise impacts from these activities.

3. CONSIDERATION OF ALTERNATIVES

As the project relates to the upgrading of an existing road of significance economic importance, no project alternatives were considered. Not developing phase 2 of the project would result in continued road congestion and related challenges to safe access, businesses, livelihoods and stormwater quality. The long-term adverse regional socio-economic and traffic impacts would be so great, that NOT improving the NR3 is not considered a viable option and is not assessed.

Routing of the project is logically constrained by the current alignment of the NR3. Additionally, with connections to Phase 1 in the west and the Dibamba River bridge in the east, the start and end points are fixed. As the phase 2 section of the road passes through an urban area of relatively high density, no significantly different route alternatives could be considered. Environmental and social risks and impacts were considered in the road designs and in the selection of roundabout sites and road building material sources in order to limit these impacts when considering alternatives. This Project will comply with Good International Industry Practice (GIIP) as defined by the applicable World Bank EHS Guidelines.

4. PROJECT STANDARDS

As the project has a Certificate of Environmental Compliance in terms of the Cameroonian legal framework the focus of the ESIA is to address the Equator Principles 4 and the International Finance Corporation's (IFC) Performance Standards (PS). The ESIA has been undertaken in terms of PS1 and documents the applicability of the Performance Standards and World Bank Group Environmental, Health and Safety Guidelines. The EHS guidelines relevant to the project are:

- *General Environmental, Health, and Safety Guidelines, 2007; and*
- *Environmental, Health, and Safety Guidelines for Toll Roads, 2007.*

5. AFFECTED ENVIRONMENT

4.1 PHYSICAL ENVIRONMENT

Douala's climate is of the humid equatorial coastal type, with high summer temperatures, very sunny days and in excess of 3.5 m of annual rainfall. Air quality is generally average to poor with primary pollutants being marginally elevated O_3 levels, released by activities such as the combustion of fossil fuels and fine particulates (PM2.5 and PM10). Air quality has a close, inverse correlation with rainfall. Noise levels are expected to be more elevated during the day then at night, due to the higher activity levels. The project had not completed baseline sampling for noise, air quality or water quality within the project area. The altitude is low and the topography is relatively flat with few inclines of significance. Drainage from the project area is primarily to the Dibamba River. There is a single, unnamed watercourse along the length of the located at PK 11+080, which is crossed in a box culvert that will not be upgraded. Localised surface water flow occurs in nine water flow paths that cross the roadway.

4.2 BIOLOGICAL ENVIRONMENT

There are no areas of conservation concern located within 5 km of the project footprint, as the road passes through a densely developed urban area. Due to the urbanised nature of the locality no plant or animal species of conservation concern are expected to be present. The road does not cross any major rivers and there are no forested areas in close proximity to the road. The only IUCN listed species of conservation concern which have ranges that overlap the project area are aquatic species (fish). The project site is not located in or within 50 km of any sites of Global Biodiversity Significance. All habitats within the project footprint are considered to be modified with the only forested (gallery forest) area located adjacent to the Dibamba river, approximately 150 m outside of the working footprint area of the project. No critical habitats were identified within the AOI.

4.3 SOCIAL ENVIRONMENT

The Project is located within the Coastal Region of Cameroon and in the Department of Wouri, with Douala as its capital and principal city. Douala is home to 84% (3 million people in 2019) of the urban population of the Coastal Region, and experienced an increase of about a million people between 2005 and 2020. The city of Douala has not had a comprehensive urban development plan to manage it expansion. The roadway passes through the district municipalities of Douala II (headquarters in New Bell) and Douala III (headquarters in Logbaba), and comprise residential urban areas.

In terms of economic activity, the informal sector has a notable presence along the NR3, with numerous informal traders and service providers operating immediately adjacent to the phase 2 road section. These informal traders and service providers include drinking establishments, cigarette stands, call boxes, grocery stores, fish shops, hardware stores, board depots, cinder block factories, food vendors who display their goods on the floor or on shelves, etc. No formal housing or permanent structures were recorded within the ROW. Seven areas were documented where informal traders and service providers concentrate in order to access consumers. A survey of these traders undertaken in December 2020 showed that 89% of the participants in the survey were trading along the phase 2 road section on a daily basis (see Figure 9). The vast majority (92.8%) indicated that this business was their only source of household income, while 86% indicated that they would find it difficult to find an alternative trading site, should they need to leave because of the road project.

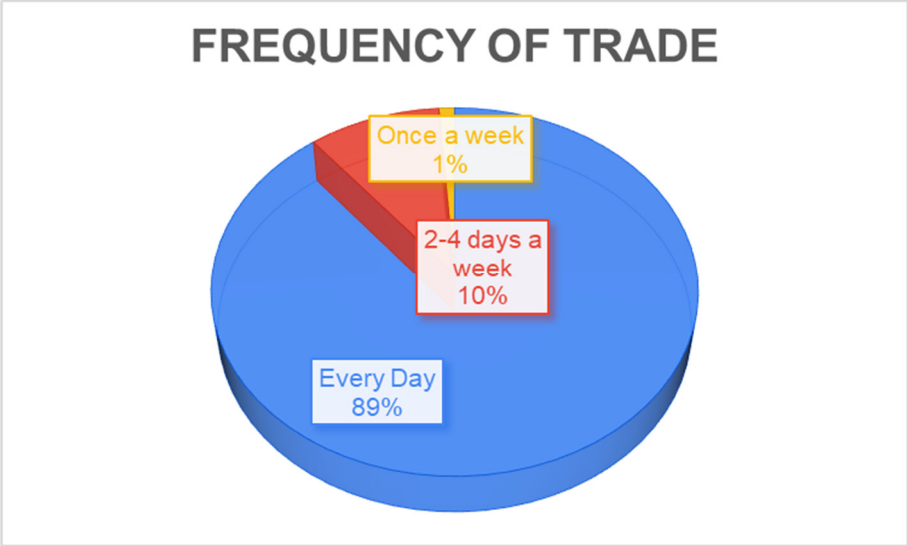

FIGURE 9: FREQUENCY OF TRADE PRESENCE WITHIN THE ROW ALONG THE PHASE 2 ROAD SECTION

Six burial sites were identified within the Yassa roundabout. The graves include the parents of the Traditional Chief of Yassa District. The grave sites were relocated as part of the TUCHAN 2020 works (CHAN emergency works). The relocation was undertaken in agreement with the population and their customs and included a traditional ceremony.

Magil conducted a survey of existing traffic composition and flow across the route (four sections monitored for one week). MINTP forecasts were used to estimate 2040 traffic levels both with and without the Project. The projections take into account the construction of the highway that will connect Yaounde to Limbe through Douala. This will reduce traffic at the Dibamba River bridge, meaning that overall traffic along the route will decrease as a result of the greater Project.

6. KEY IMPACTS ASSESSED

The process used to assess impacts is shown in Figure 10. In framing the assessment, consideration was given to the technical, temporal and physical extent of the project in relation to the biological and social environment within and surrounding the project footprint. The scope excluded assessment of how changes to the environment may affect the project (i.e. from climate change). A separate Climate Change Risk Assessment is included in Appendix 1 to the ESIA.

The project's Area of Influence (AOI), where impacts may be expected, includes the footprint of all components, the road diversion routes, key material transport routes, and a buffer to receptors of project emissions such as noise, dust, water (see Figure 11).

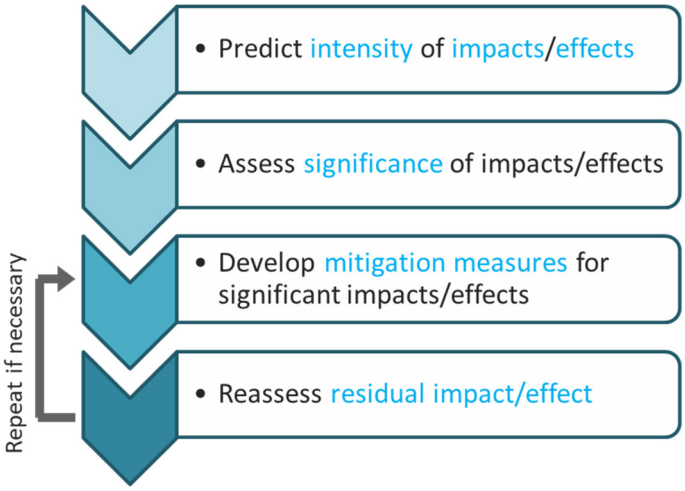

FIGURE 10: **IMPACT ASSESSMENT PROCESS**

The following key issues were investigated and assessed:

- Soil, surface and groundwater quality during the construction and operational phases of the road project;
- Air quality during the construction phase;
- Noise and vibrations during the construction and operational phases;
- Social aspects during the construction and operational phases; and
- Waste during the construction and operational phases.

The outcome of the impact assessment is summarised in Table 1. With the implementation of mitigation measures contained in the indicative for the project, the significance of the potential negative impacts can largely be reduced to of Negligible to Minor Significance.

An Environmental and Social Management Plan (ESMP) is presented in Appendix D of the ESIA, which summarises the mitigation and monitoring commitments from the ESIA, together with an initial environmental and social management overview for the Project. The ESMP is indicative, especially for Operations, and it will be the responsibility of Magil and MINTP to transpose these requirements into their Environmental and Social Management System (ESMS). The ESIA has identified specific plans / procedures for development in order to support the ESMP and guide management of the project activities.

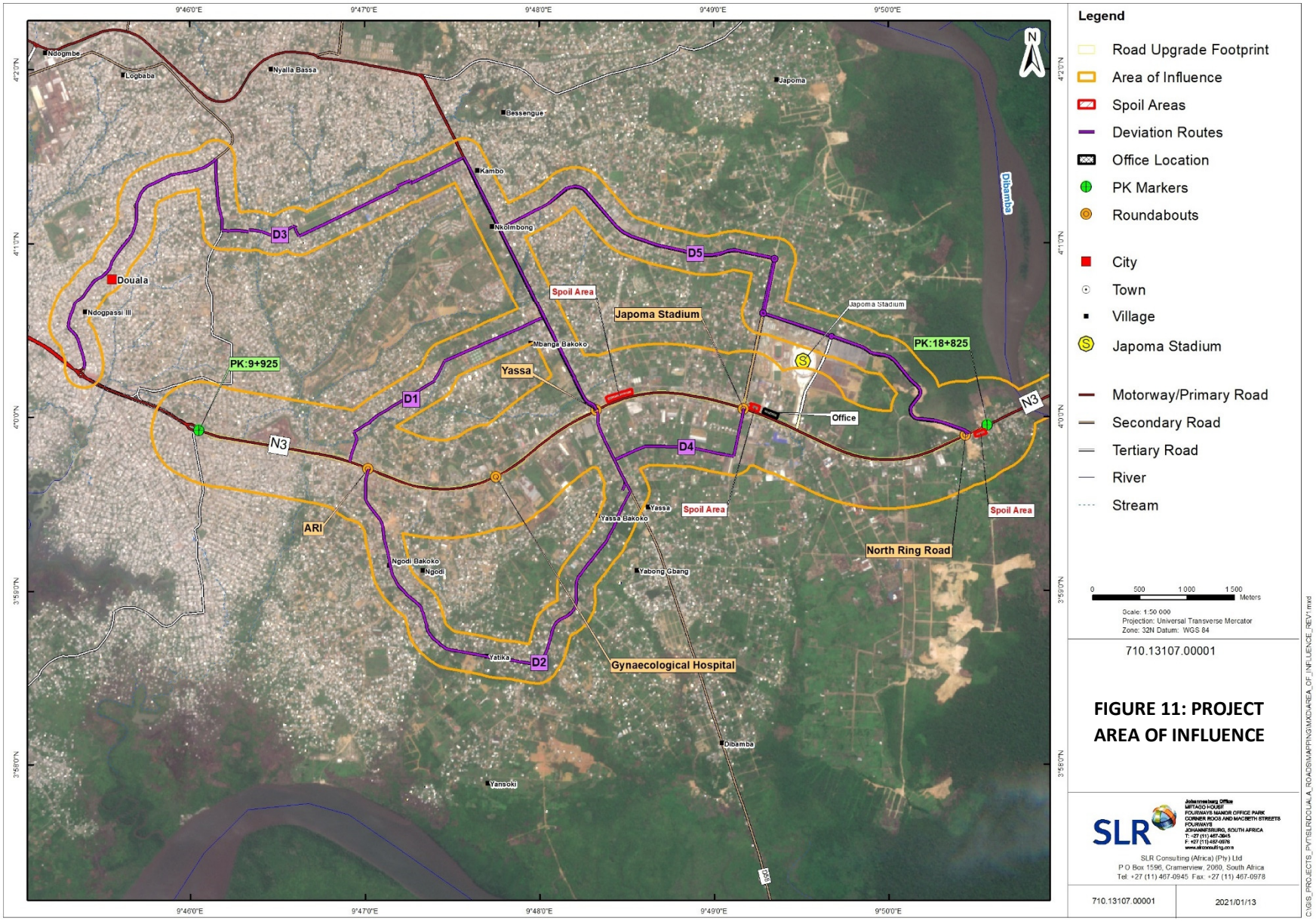
Legend
Road Upgrade Footprint
Area of Influence
Spoil Areas
Deviation Routes
Office Location
PK Markers
Roundabouts
City
Town
Village
Japoma Stadium
Motorway/Primary Road
Secondary Road
Tertiary Road
River
Stream
Douala
Ndogpassi III
Ndogmbe
Logbaba
Nyalla Bassa
Bessengue
Japoma
Kambo
Nkolmbong
Dibamba
Mbanga Bakoko
Yassa
Yassa Bakoko
Ngodi Bakoko
Ngodi
Yatika
Yabong Gbang
Yansoki
D1
D2
D3
D4
D5
N3
PK:9+925
PK:18+825
Spoil Area
Japoma Stadium
Office
ARI
North Ring Road
Gynaecological Hospital
0 500 1 000 1 500 Meters
Scale: 1:50 000
Projection: Universal Transverse Mercator
Zone: 32N Datum: WGS 84
710.13107.00001
FIGURE 11: PROJECT AREA OF influence
SLR Consulting (Africa) (Pty) Ltd
P O Box 1596, Cramerview, 2060, South Africa
Tel. +27 (11) 467-0945 Fax. +27 (11) 467-0978
710.13107.00001
2021/01/13
C:\GIS_PROJECTS_PVT\SLR\DCL\A_ROADS\MAPPING\MXD\AREA_OF_INFLUENCE_REV1.mxd

TABLE 1: SUMMARY OF KEY IMPACTS ASSESSED

Topic	Summarised Impact Description	Significance before mitigation	Significance after mitigation (Residual)
Soil, Surface Water, and Groundwater Quality	**Construction impacts could relate to the following:** - Erosion and sedimentation from road construction activities; - Contamination from construction materials; - Spills or leaks resulting in contamination; and - Spreading of pollutants from disturbance at already contaminated sites. As the road footprint and working areas are already considered to be in a disturbed state and not particularly sensitive in terms of environmental or social aspects, impacts on soil, surface and groundwater quality is considered of Minor to Medium significance.	**Minor to Medium**	**Negligible**
	Operational Impacts could result from: - Increase in impermeable/hard surfaces leading to increased water runoff The site is located in a largely urban area and the increase in hard surfaces due to the road widening is considered as a tiny part of the total water catchment area.	**Minor**	**Negligible**
Air Quality	**Construction impacts could relate to:** - Dust emissions from earthworks and other storage and construction activities; - Human health issues related to emissions from construction vehicles and operation of emergency generators; - Release of harmful fumes from volatile organic compounds uncovered during earthworks. The site is located in an urban area where dust emissions could negatively affect residents and businesses. The operation of construction vehicles and emergency generators would, however, be minimal and the extent of workers exposed to harmful released fumes would be extremely localised, these two impacts are considered to be of negligible significance.	**Medium** **Negligible**	**Negligible** **Negligible**
Noise and Vibration	**Human health impacts associated with increased noise levels from construction activities.** Construction will result in noise and vibration impacts for local residents and businesses adjacent to the ROW. Residents might not be that sensitive to noise during the day, but would be highly sensitive to noise during the nigh-time (22:00 to 07:00).	**Medium (day)** **Major (night)**	**Minor**
	Human health impacts associated with increased noise levels from traffic during operation. Noise from traffic is currently experienced by local residents and businesses. These noise levels, however, quickly drop when moving away from the road and with buildings blocking soundwaves. The traffic on the road is also expected to decrease over time.	**Minor**	**Negligible**
Social	**<u>Negative</u> Construction-related impacts relate to the following:** - Displacement of traders and loss of livelihoods when clearing the ROW; - Risk of project vehicle traffic accidents (unplanned).	**Major**	**Medium**
	- Temporary disruptions to travel times and economic efficiency and increased travel safety risk; - Health and safety risks from construction vehicles in communities - Community health and safety risks from construction work force in the area (e.g. increase in infectious diseases)	**Major**	**Minor**

Topic	Summarised Impact Description	Significance before mitigation	Significance after mitigation (Residual)
	- Temporary disruption to services (electricity, telephones, water) - Destruction of fixed property in the ROA (planned and unplanned)	**Minor**	**Negligible**
	- Infringement on worker's human rights (unplanned) - Reduced availability of water to community users - Destruction of cultural heritage finds, including graves (unplanned)	**Medium**	**Negligible**
	<u>Positive</u> Construction-related impacts relate to the following: - Direct and indirect job opportunities to Cameroon based contractors and local residents - Local content and purchase of locally supplied goods and services Up to 80% of the jobs created are subcontracted to Cameroon based contractors, with 5% local jobs and 15% expatriate jobs. Purchasing of local goods and services will lead to an increase in income levels.	**Minor Positive**	**Medium positive**
	<u>Negative</u> Operation-related impacts relate to the following: - Infringement on workers' human rights (unplanned)	**Medium**	**Negligible**
	<u>Positive</u> Operation-related impacts relate to the following: - Changes in traffic pattern at a neighbourhood level	**Negligible**	**Minor positive**
	- Changes in traffic pattern at Douala and regional level	**Major Positive**	**Major positive**
	- Reduced risk of traffic accidents (unplanned)	**Minor Positive**	**Medium positive**
Waste	**Project generated waste affecting local environment or community receptors** - During construction (general and hazardous construction waste)	**Medium**	**Negligible**
	- During operation (minimal general and hazardous waste during ongoing road maintenance activities	**Minor**	**Negligible**

7. IN CONCLUSION

It is clear from the ESIA findings, summarised in Table 1, that with the implementation of mitigation measures, most of the expected negative project impacts could be kept at a level of NEGLIGIBLE (not of concern) to MINOR significance. Construction-related social impacts from the loss of livelihoods due to displacement of traders and the unplanned risk of construction vehicle accidents, however, remain of MEDIUM significance, even after mitigation. Positive impacts relate to the creation of jobs and economic opportunities during the construction phase, while the positive operational impacts relate to the improvements in local and regional traffic flow and a reduced risk of traffic accidents.

An indicative It is thus concluded that with the implementation of the mitigation measures included in the ESMP, most of the project-related impacts could be kept at an acceptably low level and the project is thus considered to be feasible and acceptable from an environmental and social risk perspective.