

BASELINE AND END OF PROJECTS SURVEYS FOR MOMBASA WEST ROADS IMPROVEMENT PROGRAMME AND MOMBASA COUNTY PORT ACCESS ROADS

Executive Summary

This report presents the summary findings from bicycle use study within selected roads within Mombasa West and County Port Access Road in Mbaraki. The study was conducted to address the objectives that formed the scope of the study that focused on traffic volumes along the select roads, user satisfaction survey, GHG Emission Inventory and Socioeconomic Surveys. The key findings from the study and recommendations are summarised as follows. **Key Findings: Traffic Volume Surveys:** A total of eleven (11) stations, were chosen for traffic surveys at various key intersections where traffic was expected to enter or exit the project roads. These were located along Mbaraki Road (2 Stations), Kipevu Road (1), Magongo Road (4), Airport Road (3) and Mkupe Jetty (1). Surveyors were located at the stations and manually counted the vehicles for their assigned direction. Magongo Road (traffic heading to Changamwe from Kona Magongo) (19,335), and Airport Road (traffic heading to Port Reitz Road) (17,513) had the highest Average Daily Traffic (ADT). Magongo Road provided an alternative route to A109 which due to ongoing road construction is not preferred by the road users because of the associated congestion. The highest volume of pedestrian traffic was witnessed along Mbaraki Road at the Intersection to Mbaraki Police (7732 pedestrians daily). This area is closest to the Likoni Ferry crossing and offers an alternative route to the ferry crossing for the residents from Likoni who work within the Island in areas such as Ganjoni, Shimanzi, etc. There has also been a lot of reorganization of traffic movement due to diversion of traffic that was necessitated by the ongoing road construction works along Magongo Road (A109L). This thus led to a reduction in the traffic observed along the road compared to previous surveys along the same corridor from an ADT of 28,959 vehicles in 2015 to 24,050 vehicles which indicates a 20% decrease. However, there was a greater reduction by up to 128% in inbound traffic. The greatest increase in traffic was observed along Port Reitz Road with inbound traffic increasing by 73% and outbound traffic by 62%. This can be attributed to the improvement of road capacity and also being the preferred alternative route by vehicles avoiding the ongoing road works on A109 (Mombasa – Nairobi Road) which currently has roadworks going on. During the survey period, double parking, using the wrong side of the road, roadside carwashes, illegal bus stops and parking of trucks along the project roads were observed to be the major cause of congestion along the project roads. **Cargo Volumes:** The total volume of cargo moved during the 14-day survey period was 61,904,749.70 ton. 84,950.70 tons of cargo was destined to the CFS stations within Mombasa. **Truck Turnaround and User Satisfaction Surveys:** The average daily traffic in and out of the port varies between 2000 and 3500 from Monday to Saturday. The traffic then drops on Sunday. Truck turnaround times between the port to select Container Freight Stations (CFS) were selected for sampling varied from between 46 minutes for trucks destined to Compact CFS which was the furthest from the Port to 17 minutes for MCT which was the closest among the select CFS. Also, average truck turnaround times at the Port by the various gates was estimated to be 3.72 hours for transit trucks (import), between 5.26 hours and 4.82 hours for CFS trucks depending on the gate used for entry and exit, 6.97 hours for export trucks and 4.18 hours for bulk cargo trucks. Gate processing times was also established to be 27 minutes at Gate 18, 17 minutes at Gate 20 and 28 minutes at Gate 22. A total of 532 road users were also interviewed over a 5-day period to establish their satisfaction levels with the current state of the project roads that they used frequently. Sixty-eight percent (68%) of the respondents resided in Mombasa West. Most roads in and around Mombasa West are still under construction, therefore travel time, number of accidents, cost of travel and traffic jams have increased. 51% of the road users were satisfied/very satisfied, while 19% were neutral while 31% were dissatisfied/very dissatisfied. **Cargo Dwell Times:** Purposive sampling was used to identify the CFS stations that would participate in the

study. Truck number plates and time was captured when the CFS trucks exit the port gates, this was then compared to the time the truck arrived at the CFS station. Below are the target CFS stations identified for the study. Only 2 of the CFSs availed data for the purposes of the survey. Awanad had an average dwell time of 20 days in 2019, up from 10 days in 2018. MCT dwell time increased from 11.14 days in 2018 to 11.14 days in 2019. **Socioeconomic Surveys:** A total of 642 Household respondents and 212 businesses were sampled for the socioeconomic surveys. The aim of the surveys was to establish a baseline on the adequacy and impacts of the current state of the roads to their livelihood and day to day use of the facilities. For the household surveys a total 300 female and 342 male respondents were sampled, majority of the respondents (40%) attained secondary school education as their highest level of education. 61% of the respondents were household heads while others were related to the household head. Sixty four percent of the respondents moved into the settlement before the road construction began. Seventy four percent (74%) are rent paying tenants and 69% work around Mombasa west. These respondents indicated that there had been a change in rent, 54% also indicated that land values had also increased. However, majority of the respondents indicated that there had been no change in income levels (59%), business opportunities (52%) or job opportunities (62%). They also indicated that there had been an increase in pedestrian congestion on the roads, traffic jams and also an improvement in access to transport. This was also accompanied by an increase in the price of goods and services. With respect to negative impacts of the roads, majority of the respondents said that the roads have affected crime (67%), noise pollution (69%), air pollution (58%) and accidents (61%). However, majority of the respondents (59%) also felt that their health had not been affected. 212 businesses were surveyed in May 2019. 69% of the businesses had been in operation before the construction of Magongo Road, Airport Road and Port Reitz Road. The surveyed businesses had been in operation for an average of 7 years. 30% of the respondents were retail outlets (shops and kiosks) that were being operated along the project roads. 38% of the respondents who were interviewed during the surveys were shop owners. 89% of the respondents indicated that congestion had decreased along the project roads. This can be attributed to the completion of Port Reitz, Airport Road and sections of Magongo Road. 77% felt that there was also a decrease in congestion. **GHG Inventory:** The total GHG inventory for road transport destined to countries within the EAC the Survey period is 3,386,306,196.00 kg CO₂ emissions and 12,076,796.16 kg NO_x emissions. The average daily emission is estimated at 1,252,332.17 kg CO₂ and 4,466.27 kg NO_x emissions from a total of 2704 trucks captured during the survey period. The total distance over which freight cargo was transported was 3,430,908 km. This cargo was destined to various locations in Kenya, Uganda, Tanzania, South Sudan, Somalia, Sudan and Rwanda. The Consultant also collected data with respect to the total GHG inventory for road transport destined to the various CFS Stations located within Mombasa County, EPZ in Nairobi and Military supplies during the survey period. The average daily emission is estimated at 18,966.74 kg CO₂ emissions and 67.64 kg NO_x emissions. The total emissions to these destinations during the survey period for the 3582 truck that captured was 67,919,911.50 kg CO₂ emissions and 242,227.04 kg NO_x emissions. The total distance covered by the trucks to these destinations during the survey period was 68,814.50km transporting a total of 84,950.70 tons of freight cargo to the various destinations within Mombasa County.