The World Bank
KE: Digital Transport Solutions Project (P164086)

Project Information Document/
Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 26-September-2018 | Report No: PIDISDSC22928

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Kenya	P164086		Kenya Digital Transport Solutions Project (P164086)
Region	Estimated Appraisal Date	Estimated Board Date	Practice Area (Lead)
AFRICA	Jul 15, 2019	Oct 31, 2019	Digital Development
Financing Instrument	Borrower(s)	Implementing Agency	
Investment Project Financing	National Treasury	Kenya ICT Authority, National Transport Safety Authority, Ministry of Transport, Infrastructure Housing, and Urban Development	

Proposed Development Objective(s)

The project's development objective is to enhance the delivery of services and information available to Kenyans in the transport sector through digital solutions.

PROJECT FINANCING DATA (US$200 Million)

SUMMARY

Total Project Cost	200.00
Total Financing	200.00
of which IBRD/IDA	200.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	200.00

Environmental Assessment Category	Concept Review Decision

B - Partial Assessment	Track II-The review authorized the preparation to continue

Have the Safeguards oversight and clearance functions been transferred to the Practice Manager? (Will not be disclosed)
 Yes

B. Introduction and Context

Country Context

Kenya's economic performance remains solid, underpinned by strong infrastructure spending and consumer demand, which are driving economic growth. The World Bank estimates that Kenya's economic growth was 4.9 percent in 2017, after recording a five-year high at 5.9 percent in 2016. A stable macroeconomic environment, continued investment in infrastructure, improved business environment, and exports and regional integration will help sustain the growth momentum. The total population of Kenya was 44.86 million[1] in 2014, having increased rapidly over the last 30 years. The urban population was 11.3 million, or 25 percent of the total population. While the population growth rate of Kenya has been 2.7 percent annually since 2000, the urban population grew at 4.4 percent a year. It is projected that Kenya will have to accommodate about 38 million new urban dwellers between 2010 and 2050[2].

Kenya Vision 2030 intends to transform Kenya into a "newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment." The economic pillar of the Vision 2030 plan aims to achieve and sustain an average economic growth rate of 10 percent per annum until 2030. Kenya's government recognized that the Vision could only be enabled through investment in the country's transport infrastructure.

Sectoral and Institutional Context

The Government of Kenya has identified Information and Communications Technologies (ICT) as a major facilitator and catalyst for national development. The Vision 2030 national development blueprint strategically places ICT programs within the social and economic pillars, with the objective of helping transform Kenya into a "newly industrializing, middle-income country providing with a high quality of life to all its citizens by 2030 in a clean and secure environment." To do so, Kenya's government ICT infrastructure will need to catch up with modern technology and its management as the demand for various services continues to grow. In the private sector, Kenya is a leading nation in ICT innovation, with a dynamic and growing ICT industry, broadband infrastructure, cellular connectivity, digital payment gateways and innovation hubs successfully operating. It is expected that access to ICT will contribute to the country's economic growth by reducing transaction costs, increasing business efficiency, improving educational standards and ensuring accountability on the part of government officials. The Kenyan government also hopes that ICT will increase the country's productivity and raise the competitiveness of local businesses in a knowledge-based economy.

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[1] http://wdi.worldbank.org/table/2.1
[2] The State of Eastern African Cities 2014, UN-Habitat 2014

Currently the transport sector relies heavily on paper-based/manual systems to provide services to citizens. There are some 14 different transport agencies and exchanging information amongst them is difficult with consequent losses in efficiency. Similarly, it is difficult for transport sector institutions to integrate all existing applications while introducing new ones to meet the demand for providing better services to its citizens. As the economy in Kenya continues to grow, the demand for better transport services is increasingly rapidly. Given Kenya's success with the advanced state of the use of ICT, particularly in the financial sector, this success can be replicated in other sectors, such as transport.

Getting the 14 transport agencies to work together will require close collaboration and information sharing for effective delivery of services. However, under the current situation, many of the agencies work independently and often build their own independent databases, solutions and applications, and have separate network operating centers (NOCs) to support them. The support and maintenance of these applications are costly and difficult. Thus, adopting a sector wide approach would ease many of the challenges. The agencies include the Engineers Board of Kenya (EBK), Kenya Airports Authority (KAA), Kenya Civil Aviation Authority (KCAA), Kenya National Highways Authority (KeNHA), Kenya Rural Roads Authority (KeRRA), Kenya Medical Association (KMA), Kenya Ports Authority (KPA), Kenya Revenue Authority (KRA), Kenya Roads Board (KRB), Kenya Railways Corporation (KRC), Kenya Urban Roads Authority (KURA), Nairobi Metropolitan Area Transport Authority (NaMATA), National Construction Authority (NCA), and the National Transport and Safety Authority (NTSA) amongst others.

The Government of Kenya has made initial steps toward embracing technology in providing transport services, thereby contributing to lower prices for internet connectivity and services. This has been achieved by establishing high-capacity and extensive broadband networks, within a competitive market framework; and establishing e-Government applications (promoting transparency) including digitization of Government records, and enhanced connectivity for national and county Government, cyber security and shared services. However, much more needs to be done. Most transport institutions require more advanced automation. This should help in collecting, disseminating and sharing data; providing services and compliance in areas such as smarter vehicle inspection, more effective compliance enforcement and a robust vehicle identification; as well as creating more aware, informed and safer road users.

Relationship to CPS

The project is aligned with the World Bank Group Kenya Country Partnership Strategy (CPS) FY14-20. The CPS targets ten outcomes, divided into three broad domains. This project supports the CPS in achieving several of those outcomes, notably Outcome 1 - "Enhanced Infrastructure and Logistics for Sustainable Growth", which the project will support through helping the transport sector to better manage its infrastructure and improving its use through more efficient information sharing. The project also expands on CPS Outcome 7 – "Greater Citizen Feedback on the Quality of Service Delivery in Key Sectors" by establishing the digital channels for providing input on transport services and a platform to share feedback across agencies.

The proposed project is also consistent with "Vision 2030", Kenya's long-term development strategy, which aims at transforming Kenya into a middle-income country. Specifically, under its economic pillar, Gross Domestic Product (GDP) is expected to grow at 10 percent annually. Therefore, the removal of bottlenecks for growth through reforms and increased investment in infrastructure, including the promotion and implementation of ICTs, is critical. Using digital technologies to establish common shared infrastructure and platforms to integrate all services will help transform the transport sector. Thus, unlocking potential and productivity, promoting competitiveness, and improving access to public

transport services, will contribute towards the transformation of the Kenyan economy from a low to a middle-income country by 2030.

C. Proposed Development Objective(s)

The project's development objective (PDO) is to enhance the delivery of services and information available to Kenyans in the transport sector through digital solutions.

Key Results

The achievement of the PDO could be measured by the results indicators below:

(a)   Time taken to register a vehicle
(b)   Time taken to obtain a driver's license
(c)   Volume of transport information available on the shared services platform
  - Publicly available data
  - Institutional use data
(d)   Number of transport agencies using the shared services platform

D. Concept Description

While Kenya has made considerable headway in establishing itself as a regional transport and logistics hub through increased spending on transport infrastructure, translating these gains into better outcomes for users remains a challenge. Transport activities are expanding in tandem with infrastructure spending, and the demand for better services from citizens has grown exponentially. The government's long-term development blueprint, Vision 2030, is geared towards lifting Kenya to middle-income status over the next decade, helping millions of Kenyans out of poverty, and providing more job opportunities by creating a more conducive environment for the private sector to invest. Improving the rapidly growing transport services has become vital into transforming this Vision into reality.

The sector faces three significant and interconnected challenges in fully leveraging these investments into safer, cleaner and smarter transport for the future.

  - **Siloed Institutions** – The transport sector in Kenya is burdened with relatively low efficiency and an out-of-date ICT infrastructure. Currently, the sector largely relies on paper-based/manual systems to provide services for citizens. The government has accumulated a huge number of paper records over time due to a lack of online applications and digital processes. These paper records provide little value to the government and citizens, except as archives, because of the difficulty of data searching and sorting. In addition, without ICT systems in place to coordinate and share information, the disparate agencies across the sector are likely to miss areas of synergy and risk duplication of efforts.

  - **Fragmented information for planning** – In addition to the handicaps created by paper-based records, the little data that does exist in digital form remains siloed. Each transport agency has developed and maintains its own applications with little or no online information sharing among agencies. In an effort to share information, each

agency would need to embrace an "open data" concept to publishing its own data via public websites. The downside for this practice is low efficiency, high maintenance costs, lack of security safeguard of sensitive data, and duplication of data which is sometimes contradictory. The sector also lacks the sort of data centers and connectivity backbones that are necessary for more advanced service provision. Furthermore, a national system of addresses has not yet been established and real-time live Global Positioning System (GPS) data remains scarce, etc.

- **Limited or inefficient government transport data services available to citizens** – The ICT Authority (ICTA) and the NTSA recently launched the Transport Integrated Management System (TIMS). This system allows for several NTSA services to be conducted online, such as renewal of driver's licenses and vehicle registration. While this project was successful, it is still preliminary and needs to be enhanced to better meet the service demands from citizens. There are very few other services available online and, with the lack of integration, it is difficult for the various agencies to create new offerings or scale up the systems that are in place to strengthen the delivery of government services.

These challenges are not stand-alone, but instead will require a coordinated approach. Investing in the ICT infrastructure and systems required to integrate these transport institutions without considering the demands of the users for services only risks poor fit-for-purpose designs and white elephant projects. Services without integrated institutions will be inefficient, costly, and siloed. Without improved information services are not possible and transport institutions, private companies, and end users are all operating in the dark.

To address these challenges in a coordinated way, the proposed project will focus on three areas: a) integration of the digital infrastructure of transport sector institutions, b) strengthening the shared information for public and private stakeholder planning, and c) making innovative transport services available to all citizens. Viewing them as a hierarchy, as shown below, integrated institutions can facilitate improved information which in turn informs better services. Conversely, the services and information justify the investments in improving the back-end systems to integrate institutions. The ultimate goal is to allow data collection, record management and information sharing across multiple systems in the transport sector and create a modernized robust experience for citizens, transport sector offices, and other government agencies.

The project's proposed PDO captures these dimensions: "The project's development objective is to enhance the delivery of services and information available to Kenyans in the transport sector through digital solutions." An initial assessment of the sector identified several areas across all three dimensions which require support in order to deliver on this vision. The proposed components are outlined below[3]:

Component 1: Enhanced Digital Transport Services and Information, and Big Data Innovation. The overall objective of this component is to provide better services and information to citizens by enhancing digital solutions across the entire transport sector. The component would entail full integration of the current applications in transport sector agencies such as NTSA, KeNHA, Traffic Police, KURA, NaMATA, MOTI, KRB, KRC, KeRRA, KAA, and KMA as well as developing new applications for the transport sector using a shared services platform operating in a government cloud. The outcome of this component is to move towards fully data driven services by digitally acquiring and sharing as much data as possible

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[3] The components will be updated based on further diagnostic work carried out during preparation.

across the sector and making the information available to sector users. It will also establish a solid digital foundation for rapid service development in the future.

- **Component 1a: Targeted Digital Services** – The component is proposed to integrate the current applications and develop new applications across the transport sector, providing online services for users. While specific activities are still under discussion, this component may implement an automatic ticketing and fare settlement system across the entire public transport system, enhancing the user experience, improving consistency among service providers, and generating data for planning and analytics. It is proposed to expand the availability of Smart Driver's Licenses, launch online vehicle registration, and implement an online driving knowledge exam system in all NTSA testing centers. Vehicle safety inspections are currently largely done manually, and emissions inspections are not available. The component is expected to expand on a pilot automated inspection design created by NTSA, rolling it out to three additional stations and integrating the resulting data into TIMS. It will also develop and employ enforcement technology to enable the traffic police to effectively read smart drivers' licenses, read the 3rd identifier stickers, securely report accidents, record vehicles and drivers not complying with traffic regulations, and access information about drivers and vehicles in real time.

- **Component 1b: Intelligent Transport Information** – The component is also expected to leverage the newly developed infrastructure and services address the information gaps that handicap transport decision makers and citizen planning. It intends to introduce transportation informatics through information intelligence and big data analytics. This will support the Internet of Things (IoT) big data revolution in the transport industry. It will use information technologies such as sensors, GPS navigation, and potentially mobile phone location data to provide business intelligence and big data analytics, and to inform custom and targeted services to citizens. It is expected to implement a digital map and address system for the entire Transport sector. This system would record proper names of each street of the country in a digital format, providing smart transport intelligence for citizens through GIS technology and a foundation for transport informatics implementation. It may also implement an asset inventory checking system for publicly owned vehicles across all transport agencies. It would rely on both GPS and a cellular system. It would expand on a 3rd identifier sticker system already introduced by NTSA, using Radio Frequency ID (RFID) to improve vehicle monitoring, tolling and enforcement. Finally, it would establish a centralized online help desk to facilitate user experience throughout the country.

Component 2: Digital Infrastructure to Support Service Delivery. This component will establish the digital foundations for the sector to support the services and information delivered under component 1. It will link the various transport institutions together, and with their local offices across Kenya.

- **Component 2a: Establishment of Shared Services and a Big Data Computing Platform.** The shared services component infrastructure is the pillar that will ensure compliance to the new information architecture for government. It is based on the principle that data should be entered only once and then re-used across the various organizations, and subject to requisite authentication and authorization mechanisms. It also provides a fundamental ICT infrastructure for rapid application development, cost saving, 24x7 up time, and a robust disaster recovery ICT center for the government. The activities being considered in this component include further development of the government cloud; installation of a Service Oriented Architecture and Microservices Hybrid Architecture; introduction of Open Data principles, Information Intelligence, and Big Data Analytics; establishing a national disaster recovery site and operations readiness center, potentially in Naivasha; and establishing a disaster recovery site for the shared services platform. These last two activities will provide redundancy for the system, automatically rolling over to a mirror site to ensure business continuity in the case of system failure

- **Component 2b: Network Connectivity Improvement.** The main objective of this component is to ensure the availability of a working network infrastructure across the entire nation and to standardize the last mile network connectivity across all government offices and agencies in the transport sector. It will increase collaboration, efficiency, and accountability so that the sector can provide better user experience for citizens. The activities in this component would include: enhancing connectivity to NTSA offices, border posts, and Huduma centers; and introducing a unified Communication System Extension to the Transport Sector. Last mile connectivity is not expected to lead to significant large civil works that would impact the local population and environment.

- **Component 2c: Information Security Improvement.** The Government Common Core Network (GCCN) is the infrastructure backbone for data services in the government, including the transport sector. The GCCN is a public-facing network infrastructure and is particularly exposed to large array of external threats. Currently, the GCCN does not have a robust security network thus there is high risk of breach by unauthorized persons. It is imperative that the GCCN security be enhanced using best practice and the requisite solution components. To archive the desired security standard, this component will include: Public Key Infrastructure Integration; GCCN Perimeter Firewalls; GCCN Intrusion Prevention System (IPS) and Anti Malware System; and an Enterprise Security Architecture Consultancy.

- **Component 2d: Establishment of Unique Digital Identifiers for Transport Users.** To effectively deliver online services and information to citizens, a way of connecting a single transport user's information across all systems will have to be created. Establishing such a unique digital identifier will require digitizing and cleaning the records of transport users. It will change the current paper-based business processes to a workflow automation system that will enable electronic fulfillment. Although a previous World Bank project (P094103) had begun this process, digitizing many of the birth and death records, more needs to be done. The activities of this sub-component include: establishment of a Digitization Centre; digitization of NTSA Records on vehicle registration (95 million records); digitization of transport related Immigration-passports records (55 million records); and digitization of transport related Birth and Death Register Records (17 million records). A more in-depth assessment in the transport sector will be necessary to determine what gaps still exist in digitization and what enhancements can be done to existing systems to fast-track the transition to fully electronic processes.

Component 3: Project Management. The project will require coordinated implementation through at least three Kenyan agencies. This component would consist of support to finance project management related issues including project coordination, procurement, financial management, monitoring & evaluation, project communication, and environmental and social safeguards. This component would also provide support through office equipment, incremental operating costs, and audits.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project will be operating in all 47 counties, connecting the local NTSA offices, Huduma Centers and Border Posts to the fiber optic backbone. The project will install equipment in the national data center planned for Naivasha. The data center physical infrastructure has already been completed.

The Environmental Assessment (EA) category assigned this project is EA Category B (Partial Assessment), since the anticipated impacts are not expected to be sensitive, irreversible and unprecedented; they are likely to be localized and easily manageable. The project may involve only minor civil works, for example, digging and laying network cables along and across road networks, and undertaking minor alterations to the existing Data Recovery Center/facility at Naivasha to accommodate digital data processing and transmission devices as part of the last mile connectivity activity. The potential environmental and social impacts anticipated during construction will include air pollution, soil pollution and erosion, increased noise levels and release of hazardous waste materials. Traffic accidents during the transportation materials with the movement of machinery during construction are likely to increase , as well as health and safety construction related impacts. During the construction phase, the site personnel could adopt behaviors that are contrary to the habits of the local communities, which could result in increased in sexually transmitted infections (STI) and HIV/AIDs prevalence and potential conflicts. The project direct benefits will include employment opportunities for on site workers ,business opportunities for small micro enterprises, and improved access to public transport services for the citizens. Indirect benefits will include improved air quality and Green House Gas (GHG) emission reduction by carrying out vehicle emission inspections, and the automated vehicle inspection will result in reduced motor vehicle accidents . It is expected that there could be minimal land take for cable laying and erection of poles for installation of digital devices. Existing power distribution infrastructure would be used to carry short lengths of new fiber optics lines from existing fiber backbone to sites. Current knowledge suggests that, in some instances, poles may be erected for mounting digital devices such as cameras. Given that geographical locations of the project are not known, a framework approach is proposed and an Environmental and Social Management Framework (ESMF) will be prepared to cover potential environmental and social risks and impacts.

B. Borrower's Institutional Capacity for Safeguard Policies

The implementing agencies have long experience with World Bank projects. The Ministry will be able to leverage existing safeguards capacity within its sub-agencies - KeNHA, KURA and KAA. ICTA has experience delivering previous digital development projects and managing safeguards issues. Notwithstanding the existing capacity, the safeguards team will assess the present capacity of implementing agency(ies) to execute and monitor safeguards aspects and recommend gap filling measures.

C. Environmental and Social Safeguards Specialists on the Team

Suryanarayana Satish, Social Safeguards Specialist
Edward Felix Dwumfour, Environmental Safeguards Specialist
Lilian Wambui Kahindo, Social Safeguards Specialist
Ben Okindo Ayako Miranga, Environmental Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
		The EA category assigned this project is EA Cat B, since the anticipated impacts are not expected to be sensitive, irreversible and unprecedented; they are likely to be localized and easily manageable. The potential environmental and social impacts anticipated during construction will include air pollution, soil pollution and erosion, increased noise levels and release of hazardous waste material. Traffic accidents during the transportation of materials with the movement of machinery during construction are likely to increase, as well as health and safety construction related impacts. The project direct benefits will include employment opportunities for construction workers, business opportunities for small micro enterprises , and improved access to public transport services for the citizens. Indirect benefits will include improved air quality and GHG emission reduction by carrying out vehicle emission inspections, and reduced motor vehicle accidents as result of the proposed automated vehicle inspection .
Environmental Assessment OP/BP 4.01	Yes	It is expected that there could be minimal land take for cable laying and erection of poles for installation of digital devices. The project may involve only minor civil works, for example, digging and laying network cables along and across road networks, and undertaking minor alterations to the existing Data Recovery Center/facility at Naivasha to accommodate digital data processing and transmission devices as part of the last mile connectivity activity. Existing power distribution infrastructure would be used to carry short lengths of new fiber optics lines from existing fiber backbone to sites. However, in some cases, poles may be erected for mounting digital devices such as cameras. It is expected that there could be minimal land take for cable laying and erection of poles for installation of digital devices.

Given that geographical locations of the project are not known, a framework approach is proposed (an ESMF) to reflect potential environmental and social risks and impacts. World Bank Environment, Health and Safety (EHS) Guidelines and the specific industry EHS guidelines for Telecommunications will be used as |

		guidance note when preparing the ESMF and supplementary impact assessment and mitigation plans.
Performance Standards for Private Sector Activities OP/BP 4.03	No	
Natural Habitats OP/BP 4.04	No	The policy is not triggered because the project will not finance activities that will involve significant conversion or degradation of critical habitats.
Forests OP/BP 4.36	No	The policy is not triggered because the project will not finance any activities that would be deemed to bring about the conversion of natural forest or changes in management and protection or utilization of natural forest or plantation.
Pest Management OP 4.09	No	The policy is not triggered as the project will not finance any activities that will involve use of pesticides or pest management.
Physical Cultural Resources OP/BP 4.11	Yes	At the project conceptualization phase, there is no evidence to suggest that Physical Cultural Resources may be encountered during implementation of project activities. Chance find procedures may be elaborated in the proposed ESMF that will be prepared to cover the project.
Indigenous Peoples OP/BP 4.10	Yes	Project's objectives - support enhanced transport services and information for citizens and foster digital integration of the transport sector - are unlikely to affect Indigenous Peoples (IP) adversely. However, as the project activities are spread all over the country and likely to be undertaken in IP areas, an Indigenous Peoples Planning Framework will be developed and adopted to prepare an Indigenous Peoples Plan as and when required. The Framework will specify procedures, including conduction of Social Assessments, on preparing the Plans.
Involuntary Resettlement OP/BP 4.12	Yes	As planned now, there are unlikely to be any major construction activities. But, there could be some minor civil works like digging and laying of cables along and across roads. This may involve securing lands which in turn result in temporary damages/ disturbances. Towards addressing this, a Resettlement Policy Framework (RPF) will be prepared and would form a part of the comprehensive ESMF.
Safety of Dams OP/BP 4.37	No	The policy is not triggered because the project will not finance any activities that include dams or irrigation structures.

Projects on International Waterways OP/BP 7.50	No	The policy is not triggered because the project will not finance any activities that involve international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The policy is not triggered because the project will not finance activities in disputed areas.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS
June 30, 2019

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS
The ESMF, RPF and IPPF, will be prepared during project preparation and will be disclosed in country and the World Bank InfoShop prior to appraisal. It is anticipated that the draft safeguards instruments will be completed by April 15, 2019.

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APPROVAL

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