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ENVIRONMENTAL

SCOPING REPORT: NON- TECHNICAL SUMMARY

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE SECOND RIVER NIGER BRIDGE PROJECT

June 2014

Prepared for:

The NSIA Motorways Investment Company (NMIC)

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INTRODUCTION AND BACKGROUND

The Federal Government of Nigeria, through the Federal Ministry of Works has proposed the construction of a second bridge across the River Niger between Asaba in Delta State and Onitsha in Anambra State (refer to Figure 1).

The road and bridge together will be 11.9 km long, and the bridge itself 1.59 km long. It includes a toll plaza on the Asaba side. This will allow for six lanes of traffic, three in each direction. The path of the road is known as the Right of Way and will have an average width of 91.44 m but is wider near the embankments and the Toll Plaza.

NSIA Motorways Investment Company (NMIC) and Julius Berger have signed a Cooperation Agreement to act as consortium partners to develop the Second Niger Bridge Project, in a Public Private Partnership with the Federal Ministry of Works. This contract is in the form of a concession so that the Consortium can manage the project for 25 years until it may be handed back to the Federal Ministry of Works.

An Environmental and Social Impact Assessment (ESIA) is a requirement of the Environmental Decree No 86 of 1992 – known in the statute books as Environmental Impact Assessment Act CAP E12, Laws of the Federation of Nigeria (LFN) (2004) (EIA Act). Aurecon Consulting Engineers Nigeria Limited (Aurecon) have been appointed to lead this ESIA process. The International Finance Corporation (IFC) also has a set of standards for ESIA processes and the highest possible compliance with these standards will be sought. The FMW is leading a land acquisition process to accommodate the project. As a parallel but integrated process to the ESIA, Aurecon is compiling a Resettlement Action Plan (RAP) to ensure that the necessary land acquisition adequately identifies and compensates all affected persons.

As a requirement of the Nigerian EIA Act, a full ESIA study is required. Before this is undertaken, a Terms of Reference must be submitted to the Federal Ministry of Environment, as the environmental authority, to describe the proposed process for the study. An environmental and social scoping exercise was undertaken by Aurecon and partners, which include Waste Matters Nigeria Limited and MacBenuz Enviro Ltd, as well as sixteen environmental specialists. The specialists will consider the biophysical environment (aquatic and terrestrial biodiversity, hydrology, geology, climate change) and the social environment (land use and social impacts, air quality and noise, traffic and visual impacts) as risk. The Scoping Report and Terms of Reference therefore document the scoping process and activities to date and set out the way forward for the ESIA.

PROJECT DESCRIPTION

The first Niger Bridge was constructed in 1965 to link the south-eastern and south-western parts of Nigeria. Located on the east–west national main road from Lagos through Benin, the bridge is a strategic gateway. Population growth and urbanisation has put pressure on the bridge and there is a clearly identified need for additional capacity in the form of a new bridge. The new bridge aligns with a number of development plans at the national, regional, state and local level. The new bridge is intended to reduce the strain on the current bridge; improve safety and security; ease traffic flow; improve health and security; create opportunities for local residents; improve the commercial viability of the immediate area; and regenerate the social and economic life of the region.

Project components

Figure 2 shows an overview of the project components. The project comprises four sections, namely the Asaba Road, the Toll Plaza, the Bridge and the Onitsha Road sections. The section of road on the Asaba side is 2,800 m and will be built on an embankment of 6 m to protect it from floods.

The road itself is ± 37 m wide and includes three lanes paved in asphalt in each direction and separated by a concrete ditch and barrier. The outside of the road would have a guard rail and grassing and would adjoin the embankment. There would be street lighting along the road. This part of the road passes through Amakon Village where resettlement is required. A secondary bridge, would be constructed to accommodate an existing local road to the Amakon Village. The bridge would be flyover ± 21.7 m wide that would not be connected to the carriageway.

The proposed toll plaza section is near the Amakon Village and is 500 m in length and is 115 m wide. It will have an embankment with a height up to 17 m to protect the toll plaza from floods. The plaza includes administrative and service buildings; a police station; a weight station; and a garage for the maintenance of vehicles. A culvert needs to be constructed below the plaza to accommodate an existing water channel.

The bridge would be 1,590 m in length and can be divided into three different sections, namely the west approach, the main bridge and the east approach. In total there are two abutments and 22 piers with 23 spans between them of varying lengths between 40 m and 150 m. The main bridge has wider spans to allow for the shipping channel which has a clearance of 120 m width and clearance of 15 m high.

The section of road on the Onitsha side of the bridge has a total length of 7,000 m and will be constructed in an area that is mostly swamps. The asphalt road would also be six lanes wide and within a Right of Way 91.44 m wide, with a concrete barrier in the centre and a guard rail on the outside. The road passes through Harbour Industrial Layout as well as Okpoko. There is currently a creek in this area which would be diverted. A flyover of ± 21.7 m width would need to be constructed over Atani Road and would not be connected to the new road. A culvert would be constructed in the swampy area to the east to allow for a diversion of water from the swamp to pass below the road. On the eastern end, an interchange at the Onitsha-Owerri Expressway would provide future connections to other connecting roads.

Construction

Construction will take place over a 41 month period commencing in November 2014 and completed in March 2018. It will involve a number of phased activities both along the alignment within the Right of Way, as well as at locations outside the Right of Way.

Early Works II activities commenced in March 2014 and are currently underway. Completion is expected in October 2014. These activities include set up of a camp for construction workers and set up of the main construction yard near Onitsha Port; set up of a road yard on the Onitsha side; a temporary access road on the Asaba side; mining from two borrow pits on the Asaba side; clearance of vegetation and earthworks on the Asaba side near the toll plaza site and four pile tests to establish ground conditions.

Main construction works would result in a level of job creation. Most of the sites used during Early Works II would continue to be used during the main construction. Additional smaller yard sites will also be required as well as additional borrow pits. Dredging will be used as a source of sand and this will be stored in stockpiles, the locations of which have not yet been identified. Temporary slipways will be constructed to receive goods and materials transported by barges. Other materials and resources will be brought by trucks to the yards and the alignment. The road construction activities include bush clearing; top soil stripping; sub-grade preparation; earthworks; and construction of base course and asphalt layers are required. The bridge construction activities include piling; construction of pile caps; construction of piers; construction of abutments; and construction of superstructures including parapets, bridge bearings, expansion joints, light poles and cabling.

Operation

During operation, the road and bridge will be used as a new crossing over the River Niger. Vehicles would be required to pay a toll for use of the road and would need to abide by traffic control measures as required. Other activities will occur at the toll plaza and these would be housed in the administrative and service buildings; a police station; a weight station; and a garage for the maintenance of vehicles. The bridge and roads would require regular maintenance to make sure they remain in good condition. The culverts would also be kept free of blockages so that drainage is maintained. It is likely that the bridge would remain in operation after the concession length of 25 years and would continue to serve as a strategic gateway for many decades.

Alternatives

An ESIA considers alternatives so that the most environmentally and socially responsible development alternative is selected. The strategic and location alternatives for this project have already been identified much earlier on in the process, before the commencement of this ESIA. Locating the bridge between Onitsha and Asaba is economically strategic. Four alignment alternatives were considered in a screening process in 2012. Based on constraints such as the location of communities and resettlement requirements and the location of existing infrastructure such as the connecting roads and high tension lines, the alignment in this ESIA was selected as the preferred alternative. Because of the advanced stage of planning, the opportunity to assess alternatives in this ESIA is limited. The ESIA will therefore focus on assessing the proposed activity as presented against the “no-go” alternative and will focus on how to minimise the negative impacts and optimise the positive impacts. However, it will be possible to consider project level alternatives for construction activities and resources in the ESIA.

LEGAL REQUIREMENTS

As already described, the ESIA will be undertaken in accordance with Nigerian legislation as well as the voluntary international best practice framework for ESIA's, known as the Equator Principles and the IFC Performance Standards.

In terms of the Nigerian legislation, the Environmental Decree No 86 of 1992 is the primary legislation that governs this ESIA process and makes EIA's mandatory for development projects that are likely to have adverse impacts on the environment.

In terms of land acquisition and resettlement required for the project, the Land Use Act of 1978 (modified in 1990) gives the government the right to acquire land by revoking both statutory and customary rights of occupancy for the overriding public interest. In doing so, the Act specifies that the State or Local Government should pay compensation to the current holder or occupier with equal value.

The ‘Equator Principles’ are a framework for determining, assessing and managing environmental and social risks in finance transactions for major projects. It comprises a set of principles adopted by the Equator Principles Financial Institutions (EPFIs) to ensure that the projects they finance are developed and implemented in a manner that is socially responsible and environmentally sound. These Equator Principles are a set of voluntary standards that commit the EPFI to the Environmental and Social Performance Standards of IFC. These Performance Standards are based on the World Bank Group Environmental, Health & Safety Guidelines. The IFC Performance Standards are therefore considered as the bench mark for environmental and social performance in the financial industry and compliance is voluntary and managed by the IFC or the financier. However, the national regulatory system also applies and the borrower is required to meet the most stringent standards (in most countries worldwide, the IFC Performance Standards are more stringent than national legislation).

The process has been undertaken in accordance with these Acts and associated guideline documents. Other environmental and planning legislation applies to the project and have been considered by the ESIA team and the environmental specialists in their studies.

ESIA PROCESS AND METHODOLOGY

The ESIA has involved environmental screening which allowed the Federal Ministry of Environment to establish that the project was a Category 1 project due to its scale.

A scoping process was undertaken which included wet and dry season sampling of the project areas and Stakeholder Engagement with various sectors of society.

The findings of the sampling and consultation have allowed the environmental and social baseline to be documented and also to capture any constraints, opportunities and potential impacts of the project. This information is recorded in this Scoping Report which also sets out the Terms of Reference for the ESIA.

This scoping phase will be followed by an assessment phase whereby each specialist will assess the significance of the potential impacts and will provide recommendation measures to reduce any negative impacts and enhance any positive impacts. This will be the basis of the ESIA report and the Environmental and Social Management Plan, which sets out how the social and biophysical environment should be protected during the construction and operational phases. Further stakeholder consultation will be undertaken to present the findings of the ESIA and gather further comments.

STAKEHOLDER ENGAGEMENT

The stakeholder engagement process included circulating a Background Information Document and an Information Pamphlet translated into Igbo, as well as a radio and newspaper advert. Meetings and workshops were held with Federal (National), State & Local Authorities, traditional authorities (kings, paramount chiefs, town & village chiefs), affected landowners, associations such as the Sand Dredging Association & Harbour Layout Association Fishermen Associations and Non-Governmental Organisations such as environmental organisations & Community-based Organisations (CBOs). The issues raised are summarised below.

Category	Comments Raised
Compensation	<ul style="list-style-type: none"> - Local communities are expectant of compensation they might receive. - Uncertainty of who will pay compensation; the State or the project proponent. - Chiefs should be involved in the payment of compensation to avoid cheating. - No middle men should be involved in compensation payments. - Compensation should be paid before assets are destroyed. - There are fishponds which need to be compensated for.
Consultation	<ul style="list-style-type: none"> - Traditional leaders need to be met with. - The project has started without proper consultation.
Air Quality	<ul style="list-style-type: none"> - Request for air quality to be investigated.
Noise	<ul style="list-style-type: none"> - A noise impact study should be undertaken.
Traffic	<ul style="list-style-type: none"> - Request that a study be undertaken considering traffic impacts.
Road Network	<ul style="list-style-type: none"> - How the new roads will connect to existing roads needs to be explained.

Category	Comments Raised
Right of Way (ROW)	– There is confusion with regards to the positioning of the ROW.
Borrow Pits	– The position of borrow pits needs to be indicated.
Flooding	– There is concern that new roads will result in flooding of areas.
Land use	– Need for land use plans to be considered. – Need for alternative land to be provided. – Alternative land is not easy to obtain.
Time Frames	– Uncertainty if construction has started already. – The project should be undertaken as soon as possible.
Employment	– There is high unemployment. – The project should employ local people. – There are local skills available, and not only for manual labour. – Uncertainty on how employment will be arranged. – Employment of local youths is important.
Old Niger River Bridge	– Uncertainty if how the old bridge will remain as it is.
Security	– Uncertainty if the new bridge will have its own security or police post.
Resettlement	– No settlements should be allowed near the road verge. – It will need to be explained to people why they need to be resettled.
Impact Assessment	– Clarity needed if the ESIA will consider both Environmental and Social Impacts.

BASELINE DESCRIPTION, CONSTRAINTS, OPPORTUNITIES AND POTENTIAL IMPACTS

A baseline description has been compiled using desk based source of information as well as the findings of the wet and dry season sampling by the team of specialists in September 2013 and early March 2014. This allowed them to identify constraints, opportunities and potential impacts.

Baseline description

The study area falls across two states as the bridge connects Onitsha in Anambra and Asaba in Delta State. On the Asaba side, the village of Oko-Amakon will be affected, whilst on the Onitsha side the villages of Odekpe and Obosi will be affected. Specifically these villages are associated with land uses such as agricultural fields, residential structures, graves and shrines, with a sacred forest and shrine at Obosi as well. There are also industrial and business land uses along the alignment, mostly at the Harbour Industrial Layout area, as well as the Metallurgical Institute. Much of the alignment, especially along the eastern section, crosses natural vegetation, wetland and swamps and these remaining natural areas are not suitable for human habitation.

The biodiversity of these natural areas is disturbed by farming and run-off of contaminated water. Such areas can be described as a mosaic of farms, bush fallows, home gardens and swamp forest, generally made up of a mixture of trees, shrubs, herbs and grasses typical of lowland rain forest of Nigeria. Many useful plants exist here, such as those used for timber, rope, fruit, wine, oil, wrapper and dye. Common animals observed include birds (such as the egret, hornbill, pelican, heron, and vulture), rabbits, monkeys and rodents (such as the grass cutter). Reptilian fauna is apparently made up of crocodiles, turtles, tortoises, snakes and lizards.

The vegetation on the river banks comprises mainly floating and emergent aquatic macrophytes, perennial secondary grasses, shrubs and a few trees upland. However the biodiversity of the Niger River itself has been negatively impacted by siltation, polluted runoff into the river from untreated runoff water and waste and invasion by water hyacinth. The study area is primarily freshwater and fishing is still carried out mainly by a few artisanal fishermen from the community.

In terms of geology, the site is situated in the low-lying flat Deltaic Plain. The river basin along the route is covered in erosion gullies. Swamps in backwater areas off the main river often contain broad drainage channels created when this area was an active delta. The swamps along the alignment are critically dependent upon natural water level fluctuations.

The entire site is situated in a region built up by the sedimentation of the Niger Delta and is generally covered by thick layers of recent sediments. The material present is of weathered reddish brown, lateritic soils as well as alluvial deposits. Soil erosion is a major problem in both urban and rural areas and results from a high volume of rainfall. It is made worse by indiscriminate farming activities and the removal of trees and vegetation through bush burning, etc.

A primary aquifer is located in the unconsolidated deposits of the area. This aquifer is heavily used by the local population as the main source of potable water. The type of the geology means that the risk of pollution of the aquifer is high. As a result of the high rainfall in the area, drainage problems cause ponding in low lying areas. The geology of the area, together with the lack of formal waste management has led to high levels of contamination of the aquifer.

The surface water quality and flow is already impacted by extensive dredging and sand mining activities in the river near the bridge. There are poor sanitation practices in the urban areas and sewage is discharged into the stormwater system. This eventually drains into the river, or the wetland on the southern edge of Onitsha, or streams draining into the Niger River. Used engine oil from the many truck, car and motorcycle workshops spread throughout the area drains directly into the soil or is discarded into stormwater drains. Litter is also a problem and many informal solid waste dumps were observed on the banks of the Niger River or in water courses in the towns.

The general climate in the project area is humid and tropical with high temperatures and low wind speed. The air quality in much of the region is not pristine, as it has been negatively affected by commercial activities, mainly in the Delta State region. The location of industries within residential areas is causing air and noise pollution. There are also high levels of air pollution from automobiles, electricity generators, and industrial workshops and factories in residential areas.

Noise levels are representative of urban environments close to large road networks. The majority of measurements taken indicate noise levels exceed the environmental noise limits for both daytime and night time periods in residential areas.

The socio-economic survey found the study area is fairly uniform in terms of socio-cultural characteristics, with most households being Igbo-speaking and Christian. Education levels are generally low but this trend seems to be changing with the younger generation. Most villages have a primary school in easy walking distance, although secondary schools are more widely dispersed. There are few professional or technical training levels in the area.

The most common sources of income seem to be agriculture (including crop cultivation and livestock rearing) and petty trading. Other important economic activities include dredging of sand from the Niger River, fishing and industries. Most households earn income from at least two or three alternative sources. Houses are generally either of traditional wattle-and-daub construction, or are constructed of concrete brick with a number of multi-story residential buildings, mostly near the proposed creek diversion and Atani Road.

Overall, the quality of infrastructure in the affected communities is poor. Electricity supply is unreliable and in some cases, non-existent and kerosene is the most popular fuel. Access to water for drinking

and irrigation is a challenge and the roads used by communities are poorly maintained and difficult to use during the rainy season. There is no formal removal of refuse and solid waste tends to build up along roadsides and in drainage canals.

In terms of cultural heritage, there are a large number of (mostly Christian) places of worship in the area. Traditional religious worship is important and is often practiced alongside other formal religions. Some of these sacred sites are located within the communities but many are located in small patches of forests elsewhere on community land. The sacred forest areas are important to the communities and economic activity within them is forbidden. Traditional leaders are important and no community-level consultation or survey activities may be undertaken without first seeking the permission of the paramount kings and local traditional leaders.

Traffic congestion and the standard of roads in the study area are poor. Roads are mostly single carriageways with no hard shoulders or pedestrian walkways. Although some of the major roads in the town have just been resurfaced, many are in bad condition and completely impassable. There are not enough parking spaces and drivers must park on the roads. There are often no street lights, footbridges, road signs, and lane markings. Most roads are not wide enough for vehicles with many being encroached upon by traders and their stalls. A lack of formal bus stops means commuter buses pick up and drop off passengers anywhere, causing congestion.

Overall the baseline study has shown that the area is characterised by high populations, associated urbanisation and poor town planning, which has resulted in a number of physical and social challenges. These include air, ground, water and solid waste pollution and over-exploitation of natural resource which have all had a negative impact on the receiving environment.

Potential impacts

Potential impacts include any change, potential or actual, to (i) the physical, natural, or cultural environment, and (ii) impacts on surrounding community and workers, resulting from the business activity to be supported.

Against the context already described, the construction of the project may have a number of potential impacts; the significance of which will be assessed in the ESIA. These impacts are identified as:

- Impact to air quality from an increase in pollutants;
- Impacts to aquatic biodiversity from sedimentation, dredging, increase in water turbidity (reducing light penetration), blockage of waterways, and pollution and waste entering the ecosystem;
- Associated loss of livelihood for fisherman;
- Groundwater contamination from construction wastes;
- Impact to groundwater from borehole exploitation;
- Liquefaction impacts (impacting the long term safety of the bridge if there is seismic activity);
- Soil degradation from a number of disruptive or polluting activities;
- Pollution of wetland with additional health risk to humans and to aquatic ecosystems arising from increased barriers in the area; wastewater; and hydrocarbon pollution;
- Climate change impacts and increased risk of disasters;
- Noise nuisance;
- Resettlement and compensation impacts;
- Impacts of tolling;
- Benefits such as job creation and local economic development;

- Negative impacts on the community as a result of the presence of construction workers;
- Traffic disruption and health-and-safety impacts from construction activities;
- Socio-economic impacts from the transport of construction materials and equipment by barge from Warri Port;
- Loss of or damage to cultural and heritage resources;
- Loss or damage to vegetation and habitats from clearing, trampling or fragmentation;
- Impact on surrounding road network;
- Impact on traffic and other pollution (noise, air etc) from construction vehicles; and
- Pollution from the generation of waste.

TERMS OF REFERENCE

The Terms of Reference provides a work plan for the process of conducting an ESIA and preparing an Environmental and Social Management Plan. It allows stakeholders and the authority to comment on the scope and methodology. Stakeholders will be able to review the document online as well as access hard copies of the Non-Technical Summary before it is submitted to the authority.

A standard assessment methodology will be applied by all the specialists in this study to assess the significance of the potential environmental impacts of the proposed development and allow for comparable assessment of these potential impacts. Depending on the significance of the impact, appropriate mitigation measures can be proposed.

Both the Nigerian EIA legislation and the IFC Performance Standards also call for an assessment of the potential cumulative impacts arising from the project. These are the impacts from the combination of the project as well as other proposed developments.

Once the ESIA Report and Environmental and Social Management Plan have been drafted to include all of this information, a second round of stakeholder meetings will be undertaken. The Draft will be revised on the basis of these comments and submitted to the Federal Ministry of Environment. They will make a decision after a public review period and hearing. It is planned that the process would be concluded by November 2014 before construction commences.

In order to provide stakeholders with more detailed information about the proposed project, copies of the Scoping Report and Non-technical Summary will be made available from 3 – 24 July 2014 (21 days) to be viewed at the following places:

- Federal Ministry of Environment: A copy of the Scoping Report and a copy of the Non-Technical Summary (all in English);
- State Ministry of Environment: A copy of the Scoping Report and Non-technical Summary at the Awka Office and a copy of the Scoping Report and Non-technical Summary at the Asaba Office (all in English);
- Local Government Chairmen: Copies of the Non-technical Summary will be placed at the Local Government Councils of Idemili, Ogbaru and Oshimili (in English and Igbo); and
- Traditional Leadership: Copies of the Non-technical Summary will be placed at the Asagba of Asaba, Obi of Onitsha, authorities of Obosi, Odekpe, Okpoko and Oko Amakom (in English and Igbo).

Documentation will also be available for download on the following websites:

- www.digbywells.com (Documentation filed under Public Documents)
- www.aurecongroup.com (Documentation filed under Public Participation)
- www.nsia.com.ng (Documentation filed under Downloads)

SCOPING REPORT: NON-TECHNICAL SUMMARY
Environmental and Social Impact Assessment for Second Niger River Bridge

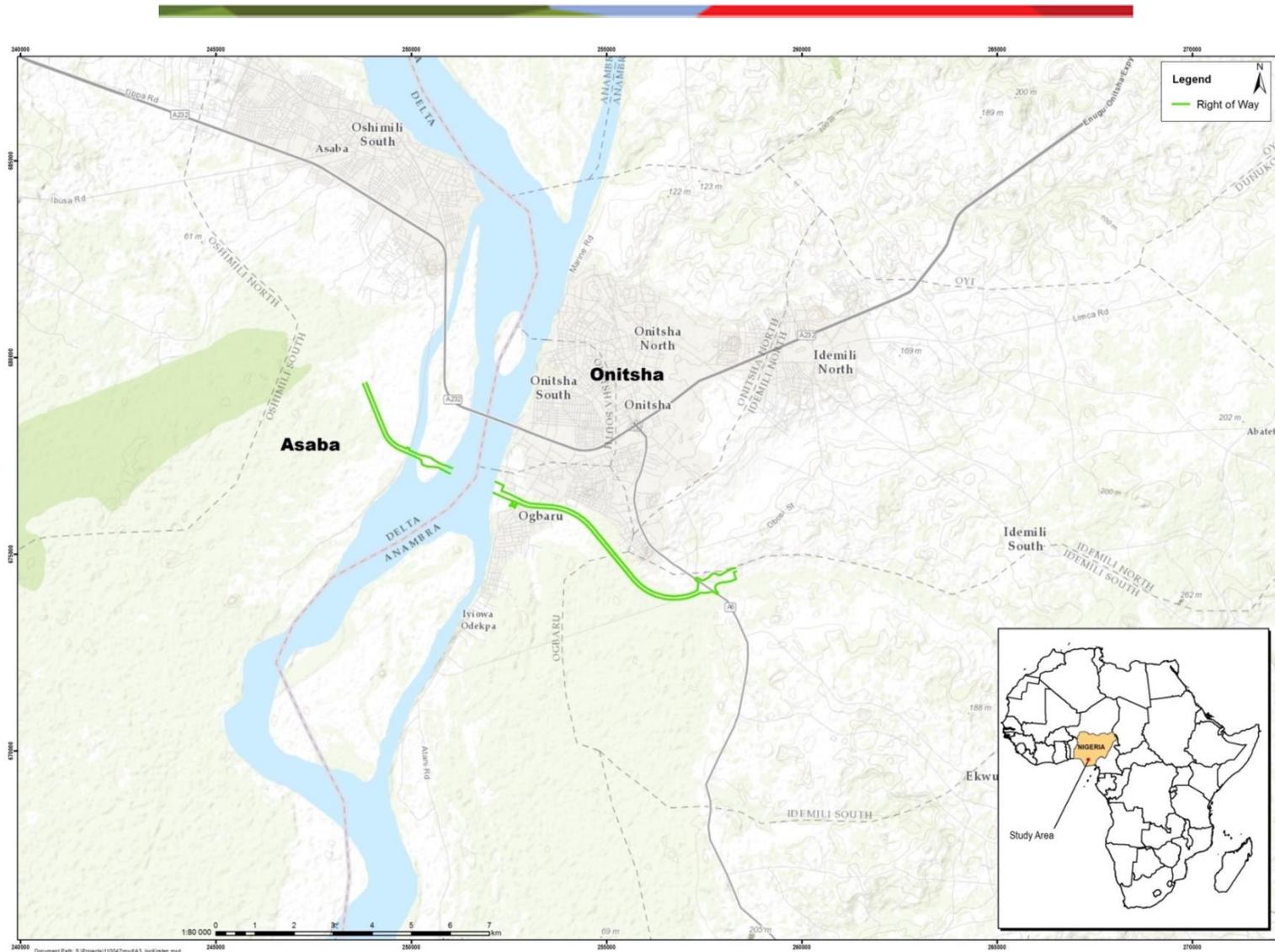


Figure 1 | Locality map indicating proposed infrastructure

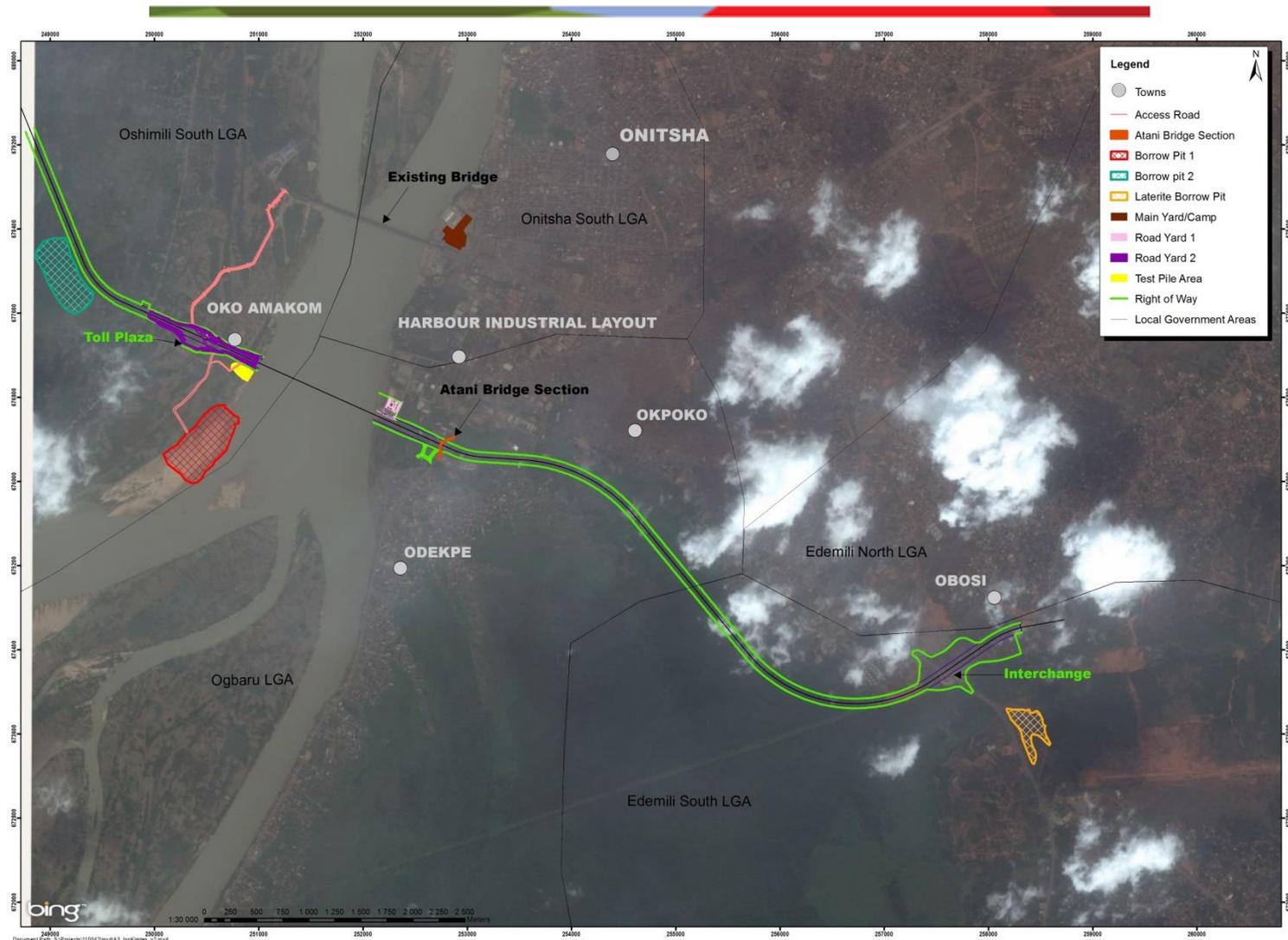


Figure 2 | Overview map indicating proposed infrastructure