Centralized Traffic Control (CTC) for Greater Gaborone City
Ministry of Transport & Communications, Botswana

Initial situation

The project “Traffic Signals Modernization and Provision of Centralized Traffic Control for Greater Gaborone City” is part of the Botswana Integrated Transport Project (BITP) programme that is being implemented by the Government with the support of the World Bank. The project’s overall objective is to enhance and upgrade the transport system in Gaborone in order to modernize the city while at the same time stimulating development and the economy.

Today 70% of the Gaborone’s intersections function with obsolete traffic signal control equipment that is both outdated technologically and operating with wrong control strategies. This has an adverse effect on delays, travel time, emissions and safety, which when combined with the increase in car ownership and traffic implies that conditions will deteriorate even faster in the future.

The project’s aim is to create a modern Centralized Traffic Control system that will help increase intersection capacity and relieve the city of congestion problems. At the same time it is required that part of the road capacity is reserved for the future public transport system that will enhance the efficiency of the transport system even further e.g. by incorporating capabilities such as bus priority schemes.

Scope of work

The planning consortium, consisting of the 3 companies
- NAMA Consulting Engineers & Planners SA, Greece
- ADK Consulting Engineers SA, Greece
- PTV Transport Consult GmbH, Germany

has been commissioned to provide consultancy services within 3 phases:

**Phase 1:**
- Conceptual design for traffic signal system modernization and preparation of Centralized Traffic Control (CTC) for Greater Gaborone City;
- Preparation of bidding documents;
- Identification of the institutional requirements and resources needed for the sustainable management of the traffic signal system in preparation for eventual transfer at the end of the project.
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Phase 2:
▷ Monitoring/Supervision of the contractor for the construction and installation of the traffic signals' improvements (including associated civil works component) and the Centralized Traffic Control Centre/System implementation.

Phase 3:
▷ Provision of oversight and monitoring services during the operation and maintenance of the system provided by the contractor for a period of 3 years up to the point of transfer to the assigned agency.

Proceeding

In order to comply with the terms of reference (ToR) the following work plan has been established:

Phase 1:
▷ Collection of traffic flow data and traffic signals' information, incl. classified traffic counts at intersections;
▷ Collection and analysis of the relevant baselines and boundary conditions;
▷ Calculation of the measures of effectiveness by traffic modeling and simulation;
▷ Conceptual design of the system and preparation of specifications;
▷ Social and environmental assessment;
▷ Preparation of the bidding documents according to the requirements of the World Bank;
▷ Review and evaluation of the bids.

Phase 2:
▷ Implementation planning;
▷ Approval of design;
▷ Contract monitoring and supervision.

Phase 3:
▷ Assistance and support during the first 3 years of system operation and maintenance.

Results

The design phase of the project is almost completed. Traffic surveys, modeling and simulation have been undertaken as well as the analysis of the existing traffic signal equipment. The system architecture and the main elements of the system have been specified and described in several reports. Furthermore, the social and environmental impacts of the system have been identified and analysed.