

Ecuador

Multi lane free flow toll improves traffic throughput in Quito

The Guayasamin Tunnel in Quito connects city's north and northeast regions to downtown Quito and is one of the main access routes to the airport. It processes a daily traffic flow of forty thousand vehicles. Tunnel access was previously controlled at a toll plaza which caused heavy traffic congestion at rush hours.

In November 2020, Kapsch installed Ecuador's first Multi lane free flow (MLFF) toll system at the Guayasamin Tunnel to improve traffic in the area by allowing electronic toll collection without requiring drivers to stop for toll payments.

A contactless toll system for shorter travel times and reduced emissions.

The toll plaza was replaced with a four-lane bidirectional free-flow toll gantry, so drivers now need only have a TAG associated with their vehicle to pass without stopping. According to Emilio Rivas, Vice President for Kapsch TrafficCom Latin America, "The impact of this change will be positive for the city, as drivers can now travel at constant speed along the road and decrease their travel time, as well as vehicle emissions in the area. Additionally, a contactless toll system during the current pandemic reduces the risk of new infections."



Project Scope:

Supply, install, and implement the Multi Lane Free Flow (MLFF) Electronic Toll Collection (ETC) system which includes:

- Supply of equipment and materials
- Development and implementation of MLFF RSS DSRC and RFID
- Operational back office
- System configuration, testing and commissioning
- Maintenance period 3 - 18 months

The Challenges:

- Implementation timeframe: MLFF must be operational in seven months.
- COVID-19: due to mobility and travel restrictions, most of the coordination for the international project teams was done remotely. Nevertheless, due to their expertise the project was successfully delivered even in these adverse circumstances.

The Solution:

The old toll plaza was replaced with a four-lane free-flow bi-directional toll gantry, so drivers need only have a tag associated with their vehicle to pass the toll point without slowing down. This also means no exchange of paper money, which adds a health benefit during the global pandemic.

Kapsch's technology for this project brings innovations such as:

- A reversible gantry configuration, allowing for changes in lane direction according to traffic demand. This makes it easier to manage traffic flow at rush hours when more vehicles move in the same direction.
- A mixed technology that enables detectors to read both passive tags (stickers) and active tags (transponders).
- A back office system developed to adapt to Ecuador's business model and the multiple tags existing in its market.



The Added Value

- *Full service solution, from initial system design to ongoing maintenance*
- *Improved mobility in the area: efficient toll collection in free-flowing traffic.*
- *Incorporation of DSRC and RFID technologies*
- *Customized solution: Back Office system adapted to Ecuador's business model and to the multiple TAGs existing in its market*