



# ELECTRONIC TOLL COLLECTION SYSTEMS

Dallas Morning News: transportationblog.dallasnews.com/files/2014/05/toll.jpg



**More Information:** [tti.tamu.edu/policy/how-to-fix-congestion](http://tti.tamu.edu/policy/how-to-fix-congestion)

## Description

Electronic toll collection (ETC) systems charge a toll to users without requiring any action or stopping by the driver. The system debits the accounts of registered car owners or identifies the license plate for later billing, without requiring vehicles to stop. ETC lanes improve the speed and efficiency of traffic flow and save drivers time.

ETC can be added to any facility through technologies such as a bar code label affixed to the vehicle, a proximity card, a radio-frequency transponder mounted in the vehicle, license plate recognition, and global positioning systems (GPS).

Smartphones have opened up new ETC methods by using apps that allow drivers to designate occupancy/toll eligibility for express lanes or to pay for tolls through PayPal or a bank card account.

## How Will This Help?

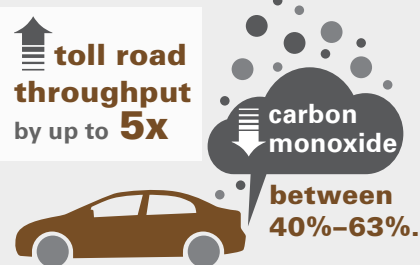
- **Increases throughput.** An open-road tolling ETC lane offers a significant increase in capacity over a manual lane and an automatic coin machine lane.
- **Decreases emissions.** Researchers have modeled the impact on emissions of using ETC lanes. ETC lanes reduced hydrocarbons, carbon monoxide, and nitrogen oxide in the study area.
- **Is cost effective.** ETC lanes are less expensive to build and operate than manual or automatic lanes.

## Implementation Issues

The current issues with implementing ETC systems are interoperability (using one tag in more than one system) and technology selection. Although all toll facilities within Texas are currently interoperable, they are not interoperable with toll facilities in other states (except Oklahoma with restrictions), in Mexico, and at border crossings. Newer technologies such as GPS tolling and different devices with frequencies will also present challenges because they are currently not interoperable.

## SUCCESS STORIES

Research has shown that ETC can:



### Laredo, Texas

Camino Colombia (SH 255) near Laredo, Texas, is one of the first facilities to allow non-U.S. residents to use the facility and pay via radio-frequency identification or automated license plate recognition.

