Kapsch TrafficCom

WSDOT I-405.

The integrated electronic toll road for the Washington State Department of Transportation

According to the Washington State Department of Transportation (WSDOT), I-405 is one of the most congested highways in the state of Washington, and research predicts that the population surrounding I-405 will increase 33 percent by 2040. Per The Seattle Times article published on September 19, 2015, over half a million people travel on I-405 daily, and commute times can be unpredictable, averaging 45 minutes up to 70 plus minutes for the 17-mile stretch of highway between Bellevue and Lynnwood.

The right transportation for the 21st century keeps people moving.

Successfully launched in September 2015, the innovative tolling system offers travelers an attractive and viable transportation option, and commuters are choosing it. Per the WSDOT blog website, public transportation use has increased by 10%, and vehicles are travelling faster than in last year's HOV lanes. There is also a 40% increase in express lane usage with speeds at 45 mph or faster 90% of the time, with an average toll rate of less than $4 during peak traffic times.
The effective collaboration between WSDOT and Kapsch on the I-405 toll way project allowed for system integration which met or surpassed performance criterion for Vehicle Detection, Automatic Vehicle Identification (AVI), Image Capture, and Digital Video Audit System (DVAS) operation. This partnership with WSDOT successfully produced an accessible system which advances enhanced mobility and is critical to urban development and improvement in quality of life for local residents.

Project Scope:

- Design, install, and implement the integrated electronic toll road for the I-405
- Keep traffic moving during peak hours at speeds of 45 mph or faster
- Increase public transit usage
- Maintain free use of the new toll lanes by HOV users
- Initiate only a minimal cost for individual drivers.
- Implementing flexible dynamic pricing

The Challenges:

- The I-405 toll road project had a specific set of needs to be addressed: commuter traffic frustration, potential financial impact, negative effect on neighboring communities, and balancing mobility issues with those of bikers and walkers.

The Solution:

- Kapsch dynamic pricing solution
- Devices installed along the entire length of the corridor.
- Signals are analyzed to determine current traffic speed, density, and occupancy, and are then used to calculate a fare.
- The Kapsch system posts the fare to the electronic toll rate signs located at the entrance to each tolling segment.
- Posted toll rates are also delivered to the PHS, so that fares posted on the signs can be correlated to vehicle transactions captured in the express lane.
- There are no toll booths, toll amounts are deducted electronically or billed by mail.
- Charges for tolls are only accumulated in the innermost HOV/express lanes.
- True image-based trip building to ensure every patron using the system is billed correctly.
- Transportation options for users who opt not to have a transponder as well as infrequent and transient users.

The Added Value

- ***Automated Trip Building***
- ***Dynamic Pricing***

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