Tolling Innovations and State Interoperability

2006 Summer TexITE Meeting
Technical Program

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Agenda

• The PPP Question
• Operations
  – More Electronic Toll Collection
  – Open Road Tolling
  – New EZ TAGs
  – Violation Enforcement
  – Video Tolling
• State Interoperability
• IH-10 Managed Lanes
PPP?

• Private Public Partnership in Houston?
  – On June 21, 2006 Harris County Commissioner’s Court unanimously voted against selling or leasing the toll roads
  – $20 billion operation will continue to be operated by the HCTRA

Present Toll System

Toll Facilities
• Hardy Toll Road
• Sam Houston Toll Road
• Hardy Airport Connector
• Westpark Tollway
• Fort Bend Parkway (Operated by HCTRA)

Totals
• ~1,100,000 EZ TAGs
• ~1,000,000 txns/day
• ~$1,000,000/day
• 100 Center-line Miles
• 250 Toll Lanes
• 203 ETC lanes
Operational Initiatives

Goals:
• Reduce costs
  – Capital
  – Transactional
• Become increasingly customer-centric
  – Increase throughput
  – Reduce accidents

Less Cash, More EZ TAGs

Operational Solution:
• Increase Electronic Tolling
  – More EZ TAG-only lanes at plazas
  – Add EZ TAG-only ramps
  – Open road tolling
  – Explore video tolling
Plaza Lane Conversions: Before

Plaza Lane Conversions: After
Ramp Lane Conversions

Exit to 249 NB off NB BW8

The Westpark Story

HCTRA's First “All Electronic” Toll Road
20 Miles, $400,000,000 to Construct
Open Road Gantry

Free Flow Ramps
ORT Solution

Electronic Requirements for Open Road Tolling:
- Automatic Vehicle Identification
- Automatic Vehicle Classification
- Violation Enforcement System
- Redundant Transaction Infrastructure

All Electronic Solution

Automatic Vehicle Identification and Classification

Top View

Side View
Violation Enforcement

Real Time Violation Alerts

To: HCTRA_VES@atsol.com
Subject: TOP Violator Location Alert-[H92FBN at Beltway8_At_249]
Vehicle License Plate:H92FBN
Time:11 Nov 2005,08:59:58
Video Tolling

- Fleet tolling
  - Yellow cab billed retroactively without transponders
- Rental car solution
  - Indirect video tolling through third party (ATS)
    - No transponders
    - No risk for authority - 100% revenue collection guaranteed
    - No collection issues for authority
    - Non-stop tolling for rental car customers
    - One account, one interface

Transaction Infrastructure

- Redundant lane controllers
  - No data loss if communications or back office services fail
- High availability data center
- Disaster recovery site
- Fiber helps
New Tag vs. Old Tag

- Began 18 month tag recall effort May, 2006.
- Averaging 100,000 tags per month so far…
- Sell rather than rent
- One tag per car!
- Increased opportunity for interoperability

EZ-TAG Volume

- EZ TAG as a % of total transactions
  - 53% in 2003
  - Finished 2004 at 64%, 70% peak
  - 2005 was same, but traffic increased 16% year over year

- EZ TAG Subscriber base increasing
  - Houston Airport System
  - Developing co branding option for area auto dealers
  - Private parking an option
Interoperability Mission

To balance the requirements of many stakeholders and develop a coordinated, effective, and efficient interoperability program

At a minimum, the toll facilities within the State of Texas must be interoperable

Goals

• Serve the traveling public:
  – One tag
  – One account
  – One supporting agency per account

• Support / enable toll agencies:
  – Economies of scale
  – Joint marketability
  – Local autonomy
  – Maintain existing programs
Current Structure

TTA, NTTA and HCTRA currently use a “Peer-to-Peer” structure for interoperability

Expanded Structure

Expansion of the Peer-to-Peer structure would result in many interfaces per agency
Vision: Transaction Hub

A jointly-developed, centralized transactional hub architecture will facilitate efficient data exchange between interoperable agencies.

I-10 Managed Lanes

EZ TAG Only, Time-of-Day Pricing
Questions?

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