National and Regional Electronic Toll Interoperability

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The Oklahoma Traffic Engineering Association
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Oklahoma Turnpike Authority History

- Enabling Legislation passed and OTA created in 1947.
- Opened Turner Turnpike May 1953.
- In 1954, Oklahomans voted to change the business model of Oklahoma Turnpike Authority (cross pledge).
OTA General Information

• Oklahoma Turnpike Authority is user funded; no state or federal funds (taxes).

• Works in conjunction with ODOT and local governments addressing Oklahoma’s transportation needs.
Oklahoma Turnpikes
OTA General Information

Includes 10 turnpikes

* 605 road miles, (84 urban, 522 rural)
* 2,420 lane miles
* 808 bridges
* 87 interchanges
* 13 to 61 year old network and assets
* serves 3,500 – 60,000 vehicles daily
* 13 million monthly transactions
PIKEPASS Statistics

Active PIKEPASS tags as of 9-30-2014 1,529,029
Active PIKEPASS accounts as of 9-30-2014 639,881
Active NTTA Toll Tags 1,894,194

Highest Percentage PIKEPASS Usage on average
- Kilpatrick Turnpike at 87%
### 2013 Financial Information (Audited)

Revenue and Transactions by collection mode

<table>
<thead>
<tr>
<th>Mode</th>
<th>Revenue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PIKEPASS</strong> Revenue</td>
<td>$133,606,000</td>
<td>57.4%</td>
</tr>
<tr>
<td>Cash Revenue</td>
<td>99,140,000</td>
<td>42.6%</td>
</tr>
<tr>
<td>Total</td>
<td>$232,746,000</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Transactions</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PIKEPASS</strong> Transactions</td>
<td>108,415,000</td>
<td>69.4%</td>
</tr>
<tr>
<td>Cash Transactions</td>
<td>47,756,000</td>
<td>30.6%</td>
</tr>
<tr>
<td>Total</td>
<td>156,171,000</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
# Oklahoma Turnpike System – Lanes with only **PIKEPASS** Equipment

<table>
<thead>
<tr>
<th>Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Toll Collection Lanes</td>
<td>476</td>
</tr>
<tr>
<td>Total <strong>PIKEPASS</strong> Lanes</td>
<td>393</td>
</tr>
<tr>
<td><strong>PIKEPASS</strong> lanes - free flow</td>
<td>139</td>
</tr>
<tr>
<td><strong>PIKEPASS</strong> Only lanes at slow speed</td>
<td>212</td>
</tr>
<tr>
<td><strong>PIKEPASS</strong> Only lanes at highway speed</td>
<td>42</td>
</tr>
</tbody>
</table>
U.S. Toll Agencies & Authorities
PIKEPASS System Overview

VCARS™ Vehicle Capture and Recognition System
Rear License Plate Video Billing & Enforcement
The Godfather – Sonny Corleone at Toll Booth

Source: Charles J. Galvin, the Onion
Sonny would be alive today if he had a **PIKEPASS**!!

Source: Charles J. Galvin, the Onion
Methods of toll collection are changing

• Toll industry facing a time of changes & challenges
  
  • Advances in technology are bringing about the end of traditional toll collection methods
    
    • Interoperability of Electronic Toll Collection (ETC) systems
    
    • All Electronic Tolling (AET) – collecting tolls by way of license plates
National Interoperability

• ETC systems today are not interoperable across North America

✓ 6 different systems – Sego, EZ Pass, ATA, T21, 6c, and Allegro

✓ 5 major regional areas of interoperability

✓ The largest is E-ZPass Group and Trucks
National Interoperability

• Key Issues for National Interoperability

✓ MAP-21 (Moving Ahead for Progress in the 21st Century Act)
✓ 6 existing protocols used to read toll tags
✓ Determine core requirements
✓ IP issues - Patents
✓ Business requirements & rules
✓ Governance & decision making
✓ How to pay for it – No funding for MAP-21
✓ One protocol needs to be selected
  ➢ Sego(PIKEPASS), EZPass, and 6c under consideration
National Interoperability

Why is it necessary?

• Our customers want expanded interoperability
  – Mostly between two regions
  – Trucking community wants coast to coast
  – One tag one account

• To be in compliant with Map-21 by July 2016
Why is Interoperability so difficult?

- Electronic Toll Collection system have to be compatible
- The Tolling Agency must be committed to the time and expense
- 6 different protocols across North America alone, needs to be 1
- Cost to be compatible is expensive
- An agreement and business rules have to be negotiated
What is OTA Doing?

- Initiatives toward interoperability
- Member of ATI
- Two Interop Partners
  - Tulsa Airport Parking Garage
  - North Texas Tollway Authority (NTTA)
- Currently on a path to be Interop with the Kansas Turnpike Authority (KTA) on November 1, 2014
- Nationally
  - A member of the International Bridge Tunnel and Turnpike Association (IBTTA) Interoperability Committee helping shape interoperability nationwide.
Steps to Interoperability with NTTA and KTA

- North Texas Tollway Authority
- Discussed for number of years – Equipment not totally compatible
  - OTA not compatible with hard case toll tags
  - 2013 – Decision made to move forward despite incompatibility
- Problems with connecting to Texas IOP Hub
Regional Interoperability

• April 2013 – Decision made to work with NTTA (Peer to Peer)
  • Agreement and Business Rules Negotiated
    ✓ Approved by NTTA and OTA Board October 2013
  • Software Programming, Marketing, Training put in place
  • Went live on August 10, 2014
Kansas Turnpike Authority

- First discussion took place in 1995
- KTA didn’t feel that it fit their business model
- June 2013 KTA expressed interest in becoming IOP
  - Agreement and Business Rules Negotiated
  - Agreement Approved by KTA and OTA Board on March 2014
  - Software Programming, Marketing, Training currently underway
  - Go live November 1, 2014
OTA Future Plans

- IOP with those compatible equipment
- IOP across North America
- Comply with the national protocol
- EZ Pass – Not going away; used to Bypass Weigh Stations
All Electronic Tolling (AET)

• We’ve come a long way from 100% cash
  – ETC brought about many advances
    • Mixed use lanes
    • Dedicated ETC lanes
    • Highway Speed Lanes

• Today cash customers represent 31% and decreasing
All Electronic Tolling (AET)

• Increase in vehicles on the facilities requires additional throughput
  • Building larger plazas many times not possible
    ✓ Cost
    ✓ Land not available
    ✓ Environmental factors
All Electronic Tolling (AET)

- Safety Improvements
  - No merging, collisions
  - Smooth traffic flow

- AET allows higher throughput without the need for expanded facilities
  - Cash lane 300 Vph
  - AET facility 2000 Vph
All Electronic Tolling (AET)

• Environmental Benefits
  ✓ Smaller footprint, eliminates idling

• Potential Reduction in operating costs
  ✓ Cost of a cash transaction more than a PIKEPASS transaction
Summary

• Tolling is growing
  ✓ Traditional transportation funding mechanisms unable to maintain infrastructure
  ✓ Tremendous growth expected in managed lanes

• DOT’s are in the tolling business
  – Delaware, Massachusetts, New Hampshire, Virginia, Florida, North Carolina, South Carolina, Kentucky, Utah.................
Summary

✓ Interoperability is growing across the US

✓ AET is becoming an acceptable way of collecting tolls especially in urban areas such as Dallas and Denver