The E-ZPass Group

17 Years of successful interoperability

Origins

- E-ZPass Interagency Group was established in 1993 in order to coordinate an interoperable ETC system within a highly traveled region
  - Seven Agencies in three states
    - New York State Thruway
    - MTA Bridges & Tunnels
    - Port Authority New York & New Jersey
    - New Jersey Turnpike Authority
    - New Jersey Highway Authority
    - South Jersey Transportation Authority
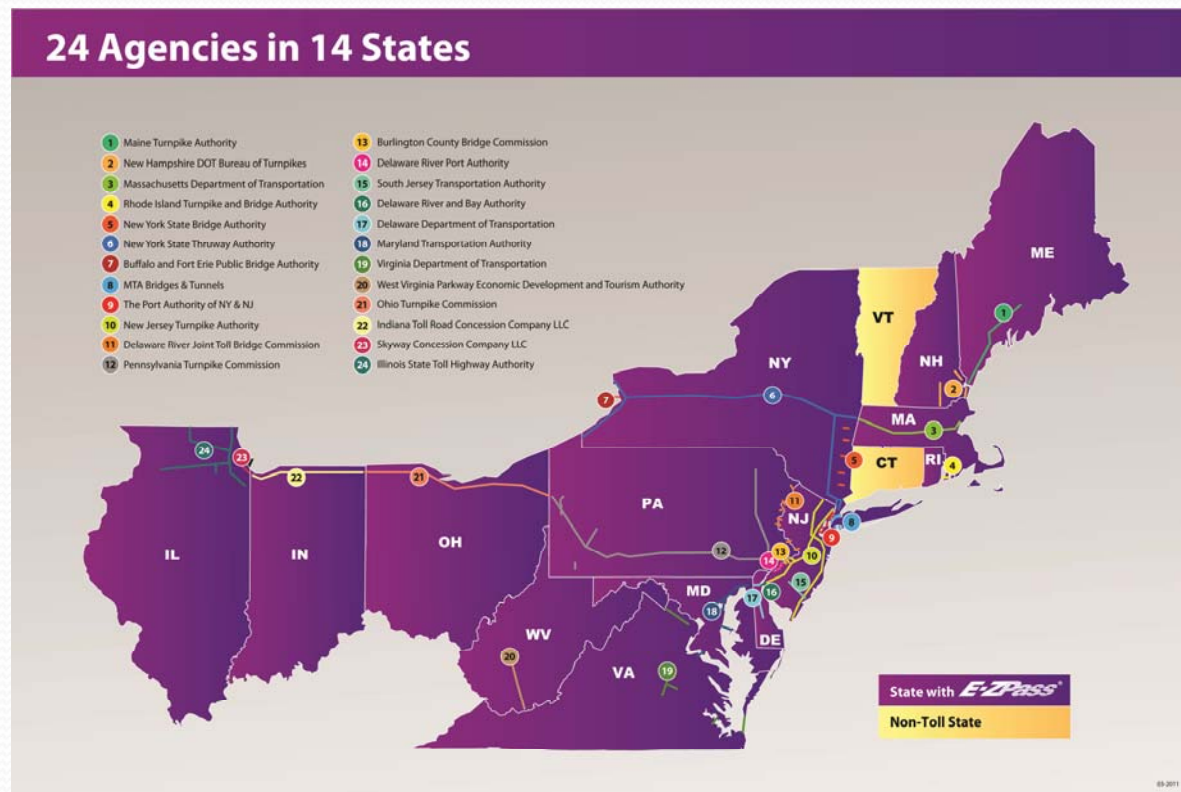   - Pennsylvania Turnpike Commission

Origins

- Conducted a joint procurement for ETC equipment.
  - MARK IV IVHS was selected

- First roadway was operational in 1995

- Immediately accepted and enjoyed by travelers in the region
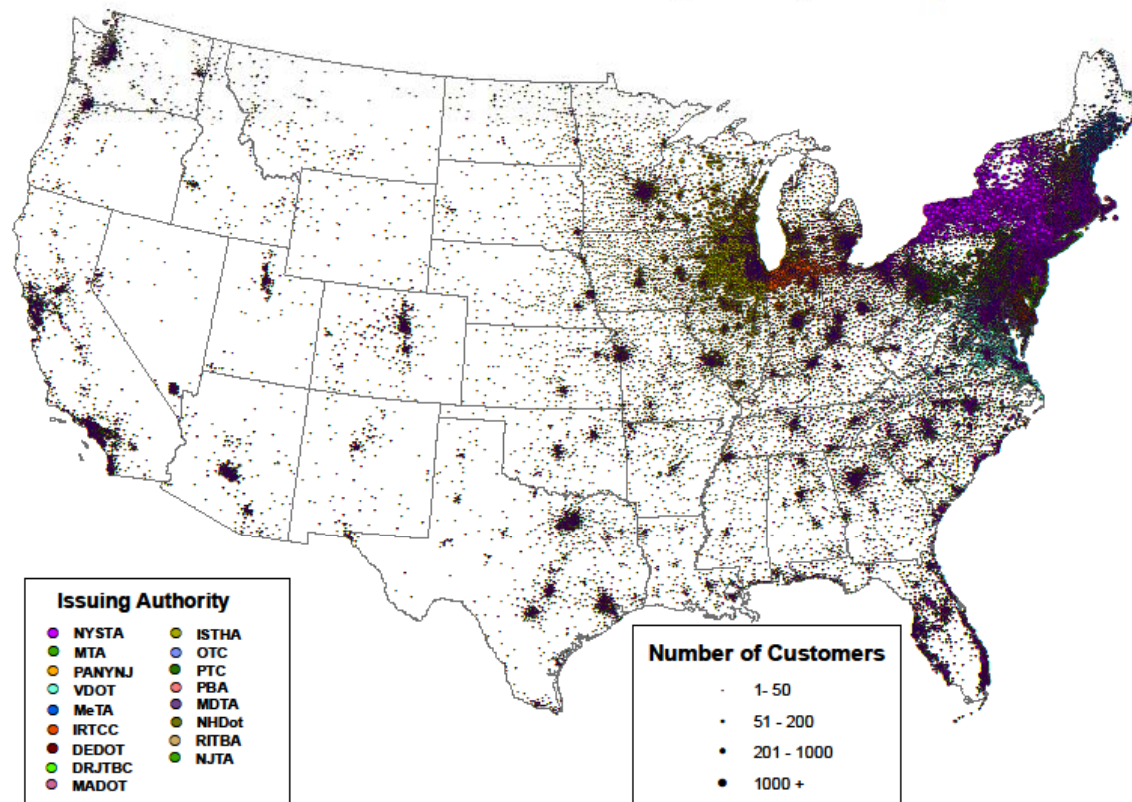
The Growth of E-ZPass

- E-ZPass has grown to include 24 toll agencies in 14 states, reaching from Maine to Virginia, and west to Illinois

24 Agencies in 14 States

1. Maine Turnpike Authority
2. New Hampshire DOT Bureau of Turnpikes
3. Massachusetts Department of Transportation
4. Rhode Island Turnpike and Bridge Authority
5. New York State Bridge Authority
6. New York State Thruway Authority
7. Buffalo and Fort Erie Public Bridge Authority
8. MTA Bridges & Tunnels
9. The Port Authority of NY & NJ
10. New Jersey Turnpike Authority
11. Delaware River Joint Toll Bridge Commission
12. Pennsylvania Turnpike Commission
13. Burlington County Bridge Commission
14. Delaware River Port Authority
15. South Jersey Transportation Authority
16. Delaware River and Bay Authority
17. Delaware Department of Transportation
18. Maryland Transportation Authority
19. Virginia Department of Transportation
20. West Virginia Parkway Economic Development and Tourism Authority
21. Ohio Turnpike Commission
22. Indiana Toll Road Concession Company LLC
23. Skyway Concession Company LLC
24. Illinois State Toll Highway Authority

State with E-ZPass

Non-Toll State

E-ZPass Today
13.7 million accounts

E-ZPass Customer Distribution by Issuing Authority

Issuing Authority
- NYSTA
- MTA
- PANYNJ
- VDOT
- MeTA
- IRTCC
- DEDOT
- DRJTBC
- MADOT
- ISTHA
- OTC
- PTC
- PBA
- MDTA
- NHDot
- RITBA
- NJTA

Number of Customers
- 1- 50
- 51 - 200
- 201 - 1000
- 1000 +

E-ZPass Today

- 22.8 million transponders deployed throughout the system
    - 2.4 billion ETC transactions annually
    - 72% E-ZPass utilization rate.

E-ZPass Today

- Revenue
  - Member agencies collect over $8 billion in total revenue annually
  - $5.6 billion collected through E-ZPass
  - 73.5% revenue collected through E-ZPass

- Reciprocity - $2.6 billion exchanged between agencies in 2011
  - 46% of all revenue is interoperable

E-ZPass Today

- The largest, most successful interoperable system in the world, and the only interoperable system that crosses state lines and into Canada

- Extremely high brand recognition and customer satisfaction - e.g., 95% of MTA customers surveyed are satisfied or very satisfied with the overall performance of E-ZPass.

- Adding a million transponders each year

- Unequalled brand recognition and customer satisfaction – (100 best things in the USA)

Diverse Tolling Requirements

- E-ZPass agencies cover the full spectrum of tolling applications
  - Open Road Tolling
  - Traditional Plaza Tolling
  - Closed Ticket Systems
  - Gated Facilities

- Some agencies require read/write, while others require feedback devices

Why Does E-ZPass Work?

- The technology used by E-ZPass meets the diverse requirements of ALL the members
  - A common technology that operates at very high accuracy rates under all conditions found at our member facilities
  - Very high in-lane toll revenue collection rates that minimizes risk to revenue

What Have We Learned?

- A nationally interoperable toll system is feasible and achievable……the E-ZPass Group has had an operational model for 17 years!

- Any national interoperability system MUST be technology based, (including I-Tolls for misreads), and be able to meet the various requirements of the diverse tolling systems of each of the operators.

- Video tolling should be a local decision, and NOT part of the national interoperability model due to its inherent difficulties and revenue collection risk

The E-ZPass Procurement

- The E-ZPass Group completed the industry's largest ever technology procurement in July 2011.

- Chosen equipment had to meet strict specifications and be highly accurate in all aspects of the various tolling schemes

- Equipment had to pass validation testing to ensure specifications were achieved

Validation Testing

- Testing was conducted for both highway speed Open Road Tolling, as well as traditional Plaza tolling environments.
  - Included testing of conditions typically found at operational toll facilities
  - Various speed profiles, vehicle spacing profiles, toll lane straddling, cross lane reads
  - Mix of vehicles to include trucks, cars, motorcycles, buses
  - 88,000 transactions under rigorous conditions

The Requirements

- Equipment undergoing validation testing had to satisfy the following accuracy rates:

	Read Performance	Write Performance	Lane Assignment
Toll Plaza	99.90%	99.90%	99.98%
Open Road	99.90%	99.80%	99.90%

Success

- Both Vendors successfully completed validation testing of their proposed equipment.
- All equipment met the requirements of the E-ZPass Group
- Thorough testing ensured all operational requirements would be met.

What Does It Mean?

- Multiple Vendors offer equipment that is highly accurate and satisfies the industry's toughest standards

- The equipment is highly accurate under all operational conditions and ensures minimal risk to revenue and high reliability for the customer

- **Our functional requirements and test plan are available for all toll operators to assist in advancing national interoperability.**

Back Office Operations

- E-ZPass Group has clearly defined file specifications and business rules that all agencies follow.
  - Specifies what data must be transmitted
    - Transponder status files
    - Transaction files
    - Reconciliation files
    - License plate files
  - Files are sent each night between each CSC over a managed frame relay system

Back Office Operations

- Files are reconciled and settlement between agencies occurs on a regularly scheduled basis
  - $2.6 billion exchanged in 2011
  - 2.4+ billion ETC transactions processed in 2011

- **Our functional file specifications and business rules are available for all toll operators to assist in advancing national interoperability.**

E-ZPass Group Membership

- E-ZPass has several membership opportunities
  - Full Member
    - May operate CSC, full voting member
  - Associate Member
    - No vote, must use existing CSC
  - Sponsored Affiliate
    - No vote, must use existing CSC, acts as lane on sponsor agency system
  - National Affiliate
    - May use dissimilar but compatible equipment

National Affiliate Program

- Established February 2012
- For first time opens E-ZPass membership to agencies using different equipment
  - Must be determined to be compatible & meet strict E-ZPass accuracy rates
  - Utilize IAG file specifications and business rules
- Provides instant interoperability with all IAG agency facilities

Conclusion

- Any interoperable system must meet the needs of ALL toll operators
- The E-ZPass model works, and has been successfully interoperable for 17 years
- Membership opportunities exist that allow for rapid expansion of the interoperable system.
- Highly accurate equipment and proven processes in place already that work well. No need to reinvent the wheel.

Conclusion

- E-ZPass is not the ONLY path to interoperability, but is the only proven system that meets the needs of the various operators, with proven success of interoperability on a large scale across state boundaries, that can be implemented within the time constraint mandated by congress.

- The sharing of our file specifications, business rules, test plans and other materials may be helpful to other agencies in advancing interoperability