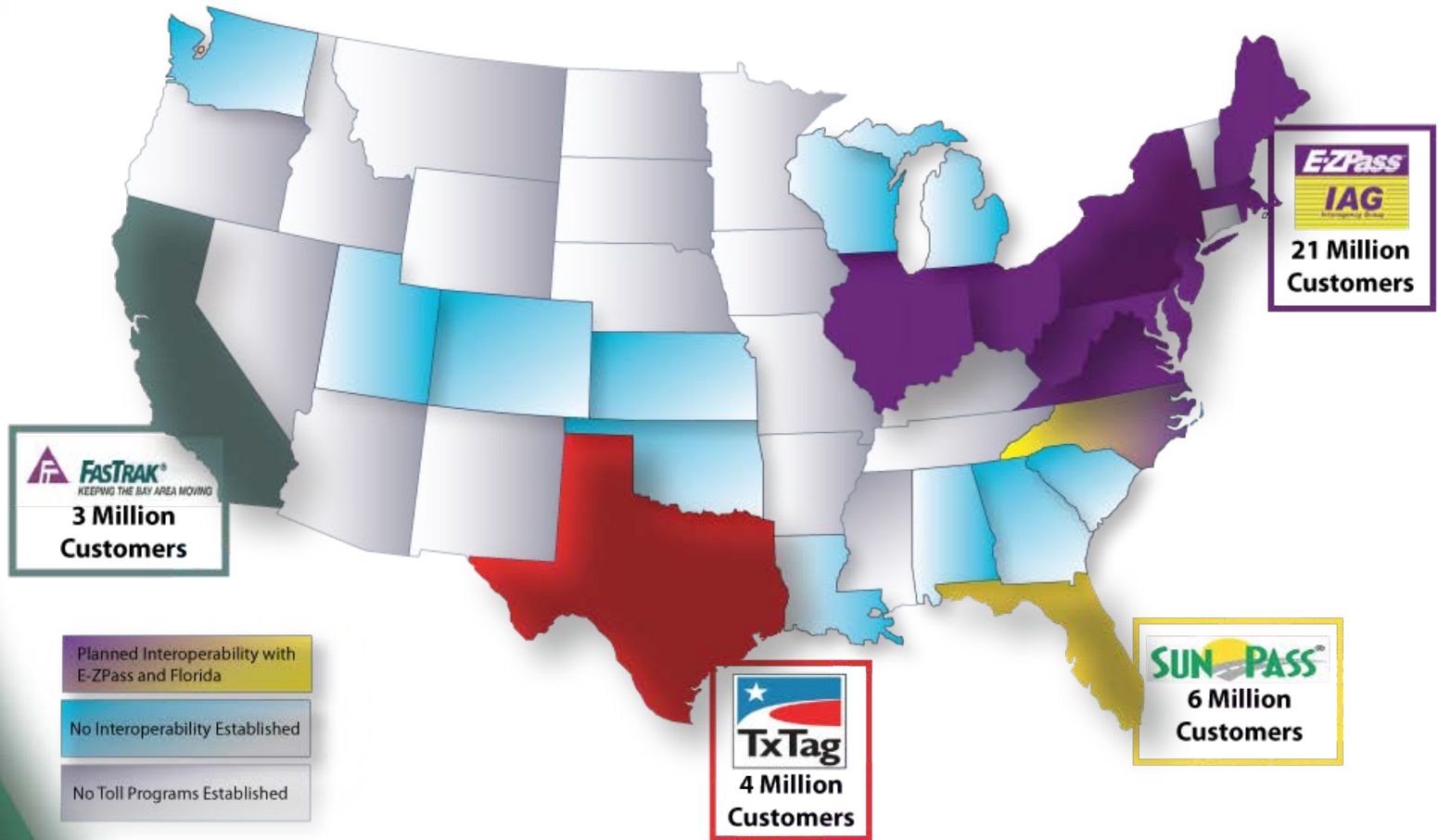




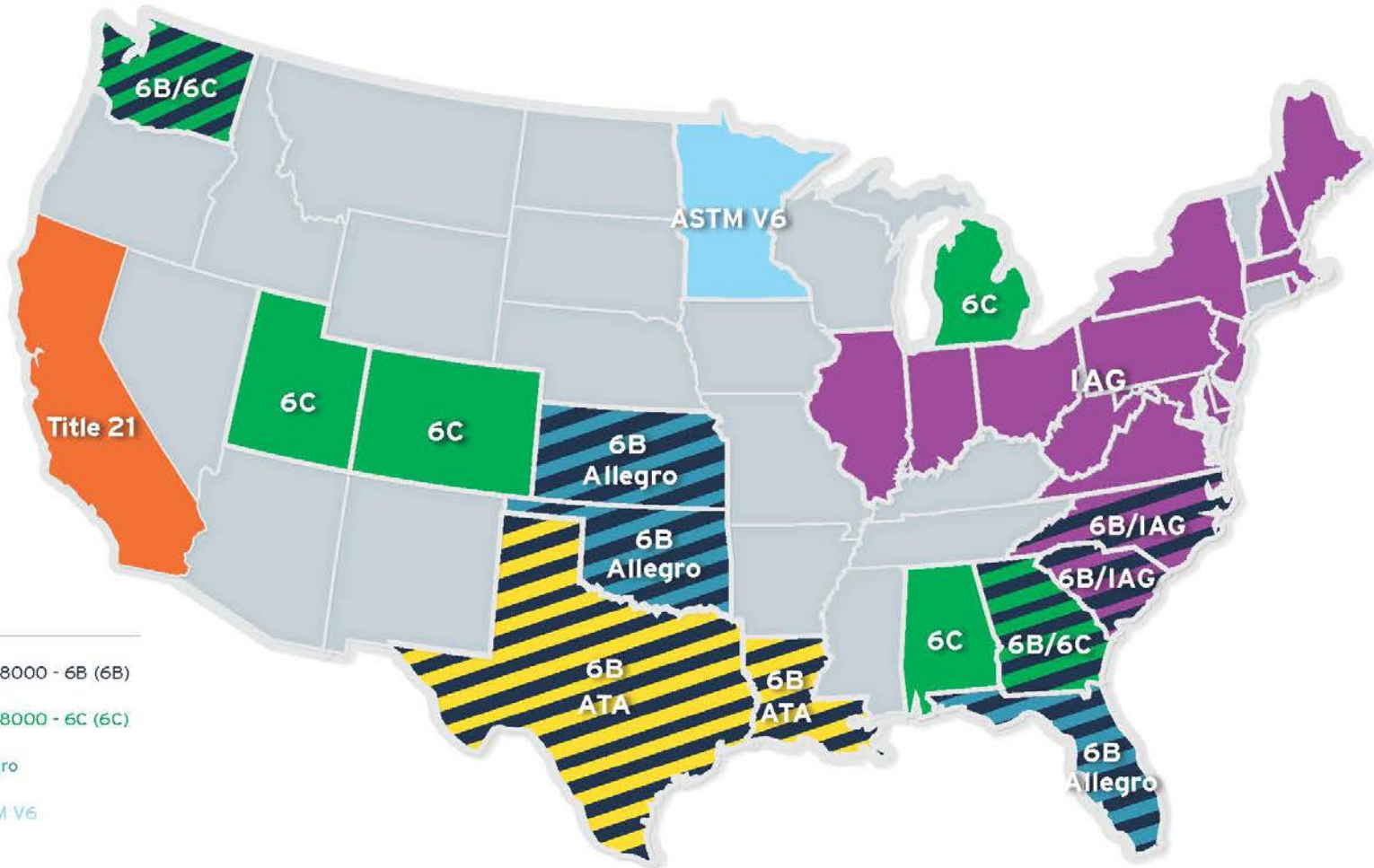
Tolling

*Impact on Mileage-Based User
Fee Highway Financing*

Current US Interoperability



National Transponder Communication Protocols



LEGEND

- ISO 18000 - 6B (6B)
- ISO 18000 - 6C (6C)
- Allegro
- ASTM V6
- ATA
- IAG
- Title 21

Updated 4/13	Alabama	California	Colorado	Florida	Georgia	Kansas	Louisiana	Michigan	Minnesota	North Carolina	Northeast US	Oklahoma	South Carolina	Texas	Utah	Washington
Transponder Program Name	Freedom Pass	FasTrak	EXpress Toll	SunPass, E-Pass, LeeWay	Peach Pass	KTAG	Geaux Pass	N/A	MnPass	NC Quick Pass	E-ZPass	PikePass	Palmetto Pass	TollTag, EZ TAG, TXTAG	Express Pass	Good To Go
Communication Protocol	6C	Title 21	6C	6B/Allegro	6B/6C	6B/Allegro	6B/ATA	N/A	ASTM V6	6B/IAG	IAG	6B/Allegro	IAG	6B/ATA	6C	6B/6C
Number of Transponders (Thousands)	9	3,100	887	8,762	401	330	130	N/A	25	45	22,500	1,360	79	7,110	13	699
Transactions Annually (Millions)	2.5	152.7	40.2	1,184	17.5	15.77	17.3	N/A	1.8	1.8	2,400	103.4	7.1	804.5	1.4	24

Toll Business is Changing

All Electronic Tolling Challenges

New Generation of User

- o Less people are carrying cash
- o Cost of managing cash collection rising
- o Customers are now more tech savvy
- o Customers will pay for convenience
- o Many customers now carry multiple transponders
- o AET has added convenience for users
- o AET has added challenges for operators



Technology Keeps Changing

- o Smart phones and interactive vehicle features may become toll-account capable in addition to transponders and license plates



- o Toll agencies must accurately handle multiples sources of toll account IDs and devices



Frequency allocation is becoming a bigger issue



License Plate Use For Tolling

Not Perfect:

- o Small percentage of transactions may be lost due to blocked, damaged or missing plates
- o Not all addresses on record are accurate



Good Backup Source of Identification:

- o Most vehicles have a current registration
- o Almost all toll accounts with a RFID toll tag has an associated license plate
- o Many toll lanes on modern systems have license plate cameras with OCR capability
 - o **May be suitable for infrequent customers a higher cost**



A Backup System

Registered Video Accounts

- o For temporary or infrequent usage
- o Higher agency and customer cost
- o Less preferred than RFID
- o Customer can call service center or use a mobile app



ATI Member Agencies



ATI
MEMBER



Financial Implications

- o US Toll Industry 12 - 13 billion dollar business.
- o Approximately 75% is electronic
- o E-ZPass Group (2012) members collected \$9 billion in tolls
 - o \$6 billion was electronic and \$3 billion of which was exchanged interoperably between the agencies in 15 states

E-ZPass Group	2010	2011	2012
Accounts	12,557,566	13,490,592	14,593,061
Transponders	20,978,547	22,495,737	24,321,3244
E-ZPass Transactions	2,381,673,573	2,446,340,860	2,489,591,587



ATI Interoperability HUB Network

