Feasibility of Capturing Images of Only Rear License Plates of Vehicles

(2025 JCR, p. 121-122)

December 2025

Maryland Transportation Authority

The Maryland Transportation Authority (MDTA) prepared this report in response to committee narrative contained in the 2025 *Joint Chairmen's Report* (JCR). The language states:

*"**Feasibility of Capturing Images of Only Rear License Plates of Vehicles:** The committees are interested in the feasibility of capturing the image of only the rear license plate of a vehicle at toll facilities in the State, rather than images of both the front and rear license plates. The committees request that the Maryland Transportation Authority (MDTA) submit a report by December 1, 2025, discussing any system and equipment upgrades necessary to switch to a process of capturing only the image of the rear license plate of a vehicle and any potential impacts that may occur as the result of only capturing the image of the rear license plate of a vehicle rather than both the front and rear license plates."*

Introduction

In 2021, the Maryland Transportation Authority (MDTA) converted to an all-electronic tolling system (AET). Tolls are collected via a transponder or an image of the vehicle's license plate. If an *E-ZPass*® transponder is not detected/read at the time of travel, a camera captures images of both the front and rear of the vehicle, which is a standard practice among tolling agencies. The camera uses optical character technology (OCR) to detect the letters and numbers on the license plate. This information is then processed by trying to match the license plate information to an *E-ZPass* account and process the transaction as an ITOL (image toll). If an account is not found, the license plate information is sent to the Maryland Motor Vehicle Administration (MVA) to identify the vehicle's owner. Vehicle owners for out of state license plates not connected to an *E-ZPass*® account are determined by the agency responsible for registering vehicles in that state. Once an out of state owner is identified, a video toll is created, and a Notice of Toll Due (NOTD) is mailed to the address on file, which is provided by the agency where the vehicle is registered.

To identify the registered owner, the system uses the best image of the license plate. The rear image is the default image. That is, if the rear plate is clear and all characters on the plate are easily recognized, that image is processed. However, when the rear plate is missing, altered, or obscured, the system uses the image of the vehicle's front license plate to identify the registered owner.

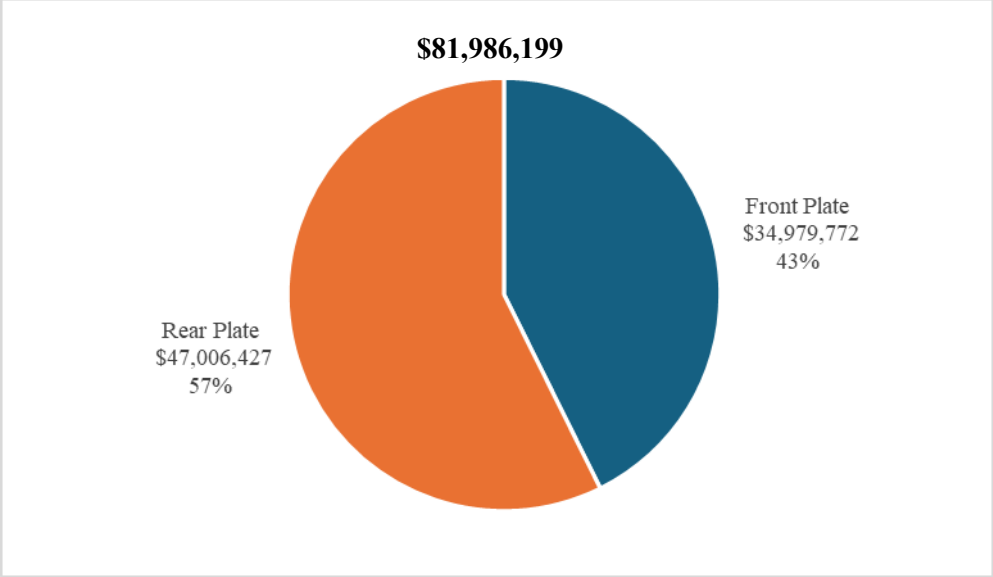
While no system or equipment upgrades are necessary if the MDTA opts to only collect images of the rear license plate on 2-axle vehicles registered in Maryland, MDTA's ability to invoice and collect toll revenue would be severely hampered. Removing the option to use the front license plate to identify the registered owner of a vehicle restricts MDTA's ability to collect from vehicles with lawful license plate obstructions, such as bike racks; MDTA will lose all ability to collect from vehicles that purposefully obstruct the rear license plate.

Revenue Impact

During calendar year 2024, there were approximately 15.1 million transactions for vehicles titled in Maryland in which a license plate was used to invoice the registered vehicle owner. For 2-axle vehicles, which comprises the bulk of these transactions (14.8 million or 98%), the front license plate was used nearly just as often as the rear license plate image to identify and invoice the registered owner. As shown in Exhibit 1, the rear (default) license plate was used to identify and

invoice the registered owner approximately 57% of the time and by contrast, the front license plate was used to identify and invoice the registered owner approximately 43% of the time. If the front license plate was not present, the MDTA would have lost the ability to invoice approximately $35 million in toll revenue associated with 2-axle vehicles. So far, the MDTA is experiencing similar trends in CY 2025 for 2-axle vehicles.

Exhibit 1
Maryland Registered 2-Axle Vehicles
CY 2024



Appendix 1 depicts transactions and revenue impact for all vehicle classifications for year calendar years 2024 and 2025.

Conclusion

In conclusion, as previously noted, capturing a vehicle's front license plate when a transponder is not present or is associated with an invalid *E-ZPass* account is universal among tolling agencies. While no system or equipment upgrades are necessary if the MDTA opts to only collect images of the rear license plate on vehicles registered in Maryland, the MDTA's ability to invoice and collect toll revenue would be severely hampered. Additionally, not having a front license plate would contribute to the ongoing problem where license plates are deliberately obscured or altered to avoid paying tolls, which is an unfair practice. Therefore, it is imperative that the MDTA has the option to utilize the front license plate.

APPENDIX 1

Table 1

Maryland Vehicle Transactions & Tolls Invoiced Calendar 2024						
	License Plate Imaged Captured			**Tolls Invoiced**		
Axle	Front Plate	Rear Plate	Total	Front Plate	Rear Plate	Total
2	6,337,175	8,446,763	14,783,938	$34,979,772	$47,006,427	$81,986,199
3	98,526	13,490	112,016	1,142,180	178,096	1,320,276
4	67,803	9,294	77,097	1,225,974	163,349	1,389,322
5	99,133	3,732	102,865	3,759,399	138,812	3,898,211
6	3,454	135	3,589	163,480	6,261	169,741
Total	**6,606,091**	**8,473,414**	**15,079,505**	**$41,270,805**	**$47,492,944**	**$88,763,749**

Table 2

Maryland Vehicle Transactions & Tolls Invoiced Calendar 2025 (January -September)						
	License Plate Imaged Captured			**Tolls Invoiced**		
Axle	Front Plate	Rear Plate	Total	Front Plate	Rear Plate	Total
2	4,039,173	5,991,017	10,030,190	$22,574,655	$33,001,180	$55,575,835
3	70,957	12,628	83,585	818,668	141,739	960,406
4	52,795	6,629	59,424	937,573	114,529	1,052,102
5	78,052	2,376	80,428	3,017,902	90,945	3,108,847
6	3,234	116	3,350	148,317	4,922	153,239
Total	**4,244,211**	**6,012,766**	**10,256,977**	**$27,497,115**	**$33,353,316**	**$60,850,430**