

A Report to the Maryland General Assembly

Senate Finance Committee

and

House Environment and Transportation Committee

**Maryland Transportation Authority –
Third Generation Electronic Toll Collection System**

TR §2-1246 Third Generation Electronic Toll Collection System

February 2020

MSAR# 11244

**The Maryland Department of Transportation
Maryland Transportation Authority**

Maryland Transportation Authority

Third Generation Electronic Toll Collection System

This report on the Maryland Transportation Authority's (MDTA) Third Generation Electronic Toll Collection System (3G-ETC) was prepared in response to Chapter 719 of 2017, which requires:

That, on or before December 31 each year, the Maryland Transportation Authority shall issue a report to the Governor and, in accordance with § 2-1246 of the State Government Article, the Senate Finance Committee and the House Environment and Transportation Committee on the procurement and implementation of the Third Generation–Electronic Toll Collection System that includes for each component of the System:

- (1) a summary of key issues being addressed in the procurement and implementation of the System, including:*
 - i. efforts to review and analyze the location of a toll plaza adjacent to a bridge that is a transportation facilities project to ensure that the Authority is appropriately charging a toll for vehicles that traverse the transportation facilities project; and*
 - ii. a projected time frame for:*
 - 1. Board of Public Works (BPW) approval of contracts for the System; and*
 - 2. implementation of the System;*
- (2) if a contract has been approved by the Board of Public Works:*
 - i. a summary of the key contract terms, including duration and cost;*
 - ii. the selected vendors and their qualifications;*
 - iii. a description of the factors that made a selected vendor the best–value selection;*
 - iv. major changes made with respect to the previous tolling system contract, including new payment options for tolls; and*
 - v. a description of the performance measures included in the contract and the actions that may be taken if the performance measures are not met; and*
- (3) if a component of the System has been implemented, the impact on:*
 - i. the tolling operations of and customer service provided by the Authority; and*
 - ii. the possibility of implementing all–electronic tolling or changes to toll rates.*

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Key issues addressed in the procurement and implementation of the System

The procurement and implementation of the 3G-ETC system has been designed to provide a modern, flexible system that is cost-effective in meeting the changing demands of customers and the industry. It has strived to improve customer service through faster transaction processing times, improved performance, new communication channels, payment methods, and payment channels. The implementation of the 3G-ETC system has introduced vehicle profile-tolling, the advancement of All-Electronic Tolling (AET) and/or Cashless Tolling, implementation of multi-protocol technology to allow interoperability with other toll regions, and improved contractor(s) accountability through Key Performance Indicators (KPI) and transparency.

Efforts to review and analyze the location of a toll plaza adjacent to a bridge to ensure appropriate tolls are charged for vehicles that traverse the transportation facilities

The MDTA does not receive funding from the Transportation Trust Fund, and is responsible for operating and maintaining its facilities only from toll revenues produced at each of its facilities. The MDTA is continuously working to evaluate and improve its facilities, including not only its bridges, but also the associated approaches, interchanges, entrance plazas, and toll plazas that it owns, operates, and maintains. Only those who use a MDTA toll facility are charged for their upkeep and improvement.

Toll authorities across the country have been for years moving in the direction of AET, and AET has been an important aspect of MDTA's long range plans for nearly ten years. MDTA's implementation of the 3G-ETC contracts makes the conversion to AET/Cashless Tolling possible. The new contracts, which were approved by the Board of Public Works on February 21, 2018, will allow for relocation or removal of existing toll plazas and the placement of new AET gantries.

The MDTA is utilizing AET/Cashless Tolling on the Intercounty Connector (ICC)/MD 200, I-95 Express Toll Lanes (ETL), Thomas J. Hatem Memorial Bridge (Hatem Bridge), and Francis Scott Key Bridge (Key Bridge). AET/Cashless Tolling was implemented at the ICC and ETL from the facilities' inception and at the Hatem Bridge and Key Bridge on October 16, 2019, and October 30, 2019, respectively. Further expansion of Cashless Tolling is anticipated at the William Preston Lane, Jr. Memorial Bridge (Chesapeake Bay Bridge) in the coming year. Additionally, Cashless Tolling will be implemented at the new Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge and the ETL Northbound Extension, upon completion of the new/expanded facilities.

Projected Time Frame of the BPW Approval and System Implementation

The BPW approved Toll Systems and Services (MA2257) and Customer Service Center Systems and Services (MA2868) contracts on February 21, 2018. Kapsch TrafficCom USA, Inc. (Kapsch) was awarded the Toll System and Services contract, which includes all systems and operational activities related to building accurate transactions. TransCore, LP (TransCore) was

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awarded the Customer Service Center Systems and Services contract, which includes developing, designing, procuring, installing, operating, and maintaining a fully functional Customer Service Center system. These two major contracts serve as the cornerstone for the MDTA to develop and operate its 3G-ETC system. Notice to Proceed (NTP) was issued on February 22, 2018 for both contracts.

The new Toll Systems and Services contract includes replacing existing toll-lane terminals and all associated hardware and software. Kapsch began installing the new toll equipment in toll plazas and AET/Cashless toll zones on May 13, 2019, and September 16, 2019, respectively. Since the NTP was issued, Kapsch and the MDTA have designed, configured, and tested the tolling equipment; developed and tested a “blackbox” that converts the transaction format from the new 3G-ETC format to the legacy format in order for the incumbent’s system to process the transaction; and began designing and developing the back office system used for processes such as cash handling, image review, interfaces, and reporting. The conversion of the toll plazas and cashless toll zones is anticipated to be completed in late April 2020.

The new Customer Service Center System and Services contract will allow the MDTA to establish, staff, and manage a more efficient and responsive call center and system. The implementation of TransCore’s back office system and opening of the Customer Service Center is anticipated in early May 2020, with the cut-over from the incumbent’s system beginning in late April 2020. Since the NTP was issued, TransCore and the MDTA have nearly completed the design, development, and testing of the software, made substantial progress with required interfaces and reporting, migrated data to a static environment, acquired and built-out the new Customer Service Center located in Middle River, MD, and hired key operational staff.

Key Contract Terms

The Kapsch and TransCore contract terms span for 13 years and include the following six phases: design and development, installation/implementation, performance evaluation, operations and maintenance (O&M), O&M extensions, and phase out.

Phase Number	Phase Description	Duration
I	Design and Development	2 years
II	Installation/Implementation	
III	Performance Evaluation	3 months
IV	O&M Base Term	6 years
V	O&M extensions	2x2 years
VI	Phase out and Transition	1 year

The Kapsch and TransCore contracts are indefinite-quantity contracts with fixed unit prices and fixed prices for lump sum deliverables. The 13-year contract values for Kapsch and TransCore are \$86,639,029 and \$272,818,442, respectively.

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<u>Phases</u>	<u>Kapsch</u>	<u>TransCore</u>
I-III	\$ 33,359,282	\$ 23,965,506
IV	28,733,854	140,931,214
V	20,549,594	90,178,494
VI	3,996,299	17,743,228
	<u>\$ 86,639,029</u>	<u>\$ 272,818,442</u>

Selected Vendors, Qualifications, and Best-Value Selection

When evaluating the proposals for the two RFPs, the evaluation criteria consisted of the following goals:

1. A system design approach that meets today’s business rules, is flexible, and allows for the adoption of new rules as the tolling industry changes (Design Approach).
2. A contractor and project team with a proven track record of successful toll implementation (Project Team).
3. A system that accurately captures and reports transactions and is highly reliable and maintainable (Data Integrity).
4. A timely, seamless, and non-disruptive transition (Transition).
5. A system and service that delivers superior customer service to our *E-ZPass* customers and MDTA as a client.
6. A partner who will maintain a collaborative relationship with MDTA and all other stakeholders (Partnering).
7. A contractor that understands and utilizes work processes and procedures that enhance the Maryland economy in a positive manner (Economic Benefit).

The technical factors were of greater importance than financial factors.

The proposal submitted by Kapsch USA, Inc. ranked first both technically and financially. The Evaluation Committee (Committee) determined that the Kapsch proposal was the most advantageous offer to the State. The committee reached this conclusion based on the strengths and weaknesses of the proposals in the context of the RFP evaluation criteria, stated above. The evaluation process included three Technical Best and Final Offers (BAFOs), and one Financial BAFO.

The proposal submitted by TransCore ranked first technically and second financially. The Committee determined that the TransCore proposal was the most advantageous offer to the State. The Committee reached this conclusion based on the strengths and weaknesses of the proposals in the context of the RFP evaluation factors, stated above. The evaluation process for the Customer Service Center Services included two Technical Best and Final Offers (BAFOs), and one Financial BAFO.

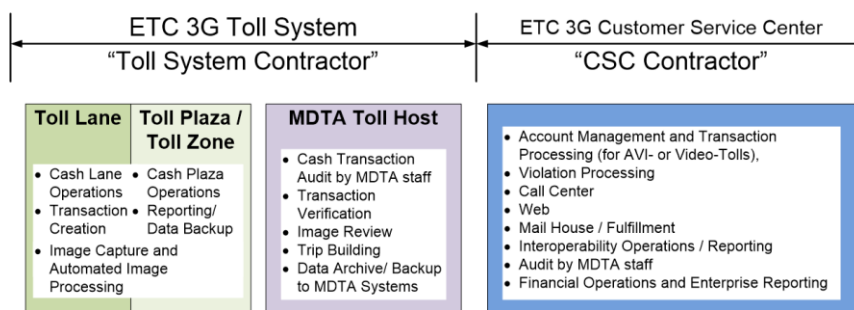
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Major Changes from the Previous Tolling System Contract

The 3G-ETC procurement was a comprehensive replacement of the existing outdated system. When procuring the 3G-ETC contracts, the MDTA recognized the importance of competition in order to deploy state of the art technology, provide superior customer service, and obtain optimal costs. The current services were divided into two separate procurements (see Diagram 1).

Diagram 1



Further actions taken to ensure competition included structuring the RFPs as a Design-Build that clearly defined program goals; incorporating KPIs, including incentives and disincentives; specifying required outcomes; and avoiding prescriptive system design requirements. Also, the MDTA issued a Request for Information (RFI) and a Request for Comments (RFC), hosted an open house and facility tours, and provided a stipend to the non-winning responsive and responsible bidders. MDTA's efforts resulted in outstanding competition in which five proposals were received for each contract (ten proposals in total). As a result, the selected vendors' combined pricing was \$10 million less annually compared to the incumbent contract, even with the additional features discussed below.

Major changes seen by customers with the new 3G-ETC contracts will include the following:

- implementing improved safety systems such as AET/Cashless tolling, which is estimated to reduce crash rates by 77% and reduce pollutants and particulate matter (CO2 emissions and fuel consumption) in the environment;
- new communication channels that will significantly improve customer service, including a mobile app (payments, notifications, account management), Web chat/modernized website, and content management system;
- transponder feedback (audible and visual alerts);
- ability to transfer video tolls to a prepaid account;
- customer satisfaction surveys;
- fleet management and application programming interfaces; faster notification of video tolls; and
- advanced call monitoring features (e.g. voice analytics).

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Performance Measures

The Kapsch contract for Toll Systems and Services includes 20 KPIs. Failure to attain the desired performance results in a disincentive adjustment to monthly payments of up to 20 percent of the invoiced amount. The KPIs are listed below and may be renegotiated annually.

- Customer feedback
- System response time
- Report generation
- Monthly reporting
- Daily reporting
- Reporting accuracy
- Lane and system availability
- Automatic Vehicle Identification lane transaction processing
- Video toll transaction processing
- Usable video toll transactions
- Non-readable video transaction images
- Trip processing
- Trip accuracy
- Manual lane terminal response
- Toll system synchronization
- Transponder file processing
- Automatic Vehicle Identification read accuracy
- Video toll image association
- Vehicle classification accuracy
- Vehicle separation and association accuracy

The TransCore Customer Service Center Systems and Services contract includes 21 KPIs. Failure to attain the desired performance results in a disincentive adjustment to monthly payments of up to 20 percent of the invoiced amount. The KPIs are listed below and may be renegotiated annually.

- Customer service rating
- Time to process payments and associate them to the correct account
- Time to scan, index, verify, attach, and process non-payment incoming mail, email, and faxes for the correct account
- Correspondence quality control
- Time to process refund requests
- Monthly reporting
- Daily reporting
- Reporting accuracy
- Staffed telephone coverage
- Customer Service Center system availability
- Report generation

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- System response time
- Website response time
- Interactive voice response automatic response time
- Average call wait time
- Call blockage rate
- Call abandon rate
- First contact resolution rate
- Time to resolve escalations
- Customer Service Center employee turnover
- Correct assignment of transponders issued by the Customer Service Center system contractor

Tolling Operations and Customer Service

The MDTA continues to make significant progress in bringing the contracts to the O&M phase. The current schedule anticipates the completion of the toll plaza and cashless toll zones in April 2020. The Customer Service Center and back office system are anticipated to go live in early-May 2020, with the cut-off from the incumbent's system beginning in late-April 2020. This schedule is four months ahead of the industry average for comparable tolling systems.

Possibility of Implementing All-Electronic Tolling or Changes to Toll Rates

The implementation of the 3G-ETC contracts makes possible the conversion to AET/Cashless Tolling, which is part of MDTA's long-term strategic plan. As stated above, AET/Cashless Tolling is currently implemented at four MDTA facilities with plans to implement at the William Preston Lane, Jr. Memorial Bridge (Bay Bridge) and new Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge.

The 3G-ETC contracts also laid the foundation for toll modernization which includes the following:

- Lowering tolls by 17 percent to 50 percent for motorcycles, 3-wheeled cars, passenger vehicles towing trailers and campers, 3- and 4-axle recreational vehicles, and 2-axle recreational vehicles and tow trucks towing vehicles by expanding and creating new vehicle classifications (effective no later than September 2020);
- Establishing a new payment option (Pay-by-Plate) designed for infrequent customers and those that do not want an *E-ZPass*[®] account. The toll rates mirror the cash and non-*E-ZPass* rates for the legacy facilities and are 25 percent higher than the *E-ZPass* rate on the Intercounty Connector and I-95 Express Toll Lanes, and at least 20 percent less than the Video Toll rate (effective no later than June 2020); and
- Providing a Video Toll Early Payment Discount of 15 percent off the Video Toll rate, up to \$5.00 (effective no later than December 2020).

Collectively, the changes are expected to save MDTA customers \$28 million in the first five years.