Maryland Transportation Authority

BOARD MEETING

THURSDAY, NOVEMBER 18, 2021

MARYLAND TRANSPORTATION AUTHORITY
2310 BROENING HWY
BALTIMORE, MD 21224

MARYLAND TRANSPORTATION AUTHORITY
BOARD MEETING
2310 BROENING HIGHWAY
BALTIMORE, MD 21224

NOVEMBER 18, 2021 9:00 AM

This meeting will be livestreamed on the MDTA Board Meeting Page

NOTES:

- This is an In-Person Board Meeting being conducted at the Maryland Transportation Authority Headquarters located at 2310 Broening Highway, Baltimore MD 21224.
- This In-Person Open Meeting will be livestreamed. You are welcomed to watch the meeting at the link above.
- ***If you wish to comment on an agenda item please email your name, affiliation, and the agenda item to nhenson@mdta.state.md.us no later than 5:00 p.m. on Tuesday, November 16, 2021. You MUST pre-register and attend the meeting in-person in order to comment.*** Once you have pre-registered you will receive an email with all pertinent information.
- The order of the agenda items are subject to change.

REVISED AGENDA

OPEN SESSION – 9:00 AM

Call Meeting to Order

1.	**Approval** – Open Session and Closed Session Meeting Minutes of October 28, 2021	Chairman	5 min.
2.	**Approval** – Contract Awards • MR-3029-0000 – On-Call Miscellaneous Paving Repair • MDTA 2020-02 – ITS & Electrical Design Services • J01B600011 – DYNAC Maintenance Contract	Donna DiCerbo	10 min.
3.	**Update** – Procurement Report on Open Contracts – Verbal	Donna DiCerbo	5 min.
4.	**Update** – Third Generation Electronic Toll Collection (3G ETC) System – Current Operations Update	Will Pines	15 min.
5.	**Approval** – Quarterly Review of Investment Strategy and Performance – Approval to Continue with the Current Investment Strategy	Allen Garman	5 min.
6.	**Approval** – Phase 1 South: American Legion Bridge I-270 to I-370 Toll Setting Process – Review Final Public Comment Summary, Provide Opportunity for Public Comment per Transportation Article § 4-312, and Approval of the Final Proposal	Carl Chamberlin	20 min.

Vote to go into Closed Session

7.	To Discuss Matters Related to the Pending Collective Bargaining Negotiations	Percy Dangerfield	15 min.

Vote to go into Open Session

8.	**Update** – Traffic and Revenue Forecast Update – A Review of the Annual Updates to the Traffic and Revenue Forecasts for All Facilities	Chantelle Green	10 min.
9.	**Approval** – Fiscal Year (FY) 2023 Preliminary Operating Budget – Approval of the Preliminary Operating Budget	Jeffrey Brown	10 min.
10.	**Approval** – Final Fiscal Year (FY) 2022-2027 Consolidated Transportation Program (CTP) – Approval of the Six-Year Capital Budget	Jeanne Marriott	15 min.
11.	**Approval** – Fiscal Year (FY) 2022-2027 Financial Forecast – Approval of the Six-Year Financial Forecast	Christina Thompson	10 min.
12.	**Update** – Bi-Annual Review of Revenue Sufficiency – Review of Revenues as Required by the MDTA Board Operating Policy	Chantelle Green	5 min.
13.	**Update** – 1st Quarter Operating Budget Comparison – Review of Actual vs. Projected Fiscal Year 2022 Operating Budget Spending	Jeffrey Brown	5 min.
14.	**Update** – 1st Quarter Capital Budget Comparison – Review of Actual vs. Projected Fiscal Year 2022 Capital Budget Spending	Jeanne Marriott	10 min.
15.	**Update** – Human Resources Committee Report – Verbal	Member Carroll	10 min.
16.	**Update** – Executive Director's Report – Verbal	Mary O'Keeffe	10 min.

Vote to Adjourn Meeting

TAB 1

MARYLAND TRANSPORTATION AUTHORITY
BOARD MEETING

THURSDAY, OCTOBER 28, 2021
9:00 A.M.

2310 BROENING HIGHWAY, BALTIMORE MD 21224
IN-PERSON, LIVESTREAMED OPEN MEETING

OPEN SESSION

Sean Powell, Acting Chairman

MEMBERS ATTENDING:	Dontae Carroll William H. Cox, Jr. William C. Ensor, III W. Lee Gaines, Jr. Mario J. Gangemi Cynthia D. Penny-Ardinger, Esq. Jeffrey S. Rosen John F. von Paris – Via Telephone
STAFF ATTENDING:	Tekeste Amare Col. Kevin Anderson Donna DiCerbo Chantelle Green James Harkness Natalie Henson Jeanne Marriott Kimberly Millender, Esq. Ebony Moore Mary O'Keeffe Will Pines James F. Ports, Jr. Deb Sharpless – Via Telephone Lillian Sidrak
OTHER ATTENDEES:	William Seymour, SB & Company, LLC

At 9:02 a.m. Acting Chairman Sean Powell called the meeting of the Maryland Transportation Authority (MDTA) Board to order. The meeting was held in-person at MDTA located at 2310 Broening Highway, Baltimore MD 21224 and was livestreamed on the MDTA Board Meeting web page. Acting Chairman Powell announced that Member von Paris and Deb Sharpless would be participating in the meeting via conference call.

APPROVAL – OPEN SESSION MEETING MINUTES OF SEPTEMBER 30, 2021

Upon motion by Member William H. Cox, Jr. and seconded by Member Mario J. Gangemi, the open session meeting minutes of the MDTA Board meeting held on September 30, 2021 were unanimously approved.

RESOLUTIONS – YEARS OF SERVICE RECOGNITION

Mr. Jim Ports read the Years of Service Recognition for retired employees Ms. Danita M. Black, Ms. Barbara A. Jones, and Ms. Gwen A. Lewis.

On the occasion of their retirement from their distinguished careers of service, the Chairman and Members of the Maryland Transportation Authority hereby express to them their most sincere appreciation for their excellence and commitment.

APPROVAL – CONTRACT AWARDS

- **MDTA 2019-02A – Comprehensive Building and Facility Engineering and Architectural Design, Construction, and Miscellaneous Consulting Services – Contract Nos. AE 3081-0000, AE 3082-0000, AE 3083-0000, and AE 3084-0000**

Ms. Donna DiCerbo requested contingent approval from the MDTA Board to execute Contract No. MDTA 2019-02A – Comprehensive Building and Facility Engineering and Architectural Design, Construction, and Miscellaneous Consulting Services - Contract #'s AE 3081-0000, AE 3082-0000, AE 3083-0000, and AE 3084-000 in the bid amount of $4,000,000.00 for each contract as stated below.

AE 3081-0000	Johnson, Mirmiran & Thompson, Inc.
AE 3082-0000	AECOM Design Services, Inc.
AE 3083-0000	Whitman, Requardt and Associates, LLP
AE 3084-0000	Rummel, Klepper & Kahl, LLP

The services to be performed under these contracts are comprehensive building and facility engineering and architectural design, construction, and miscellaneous consulting services for the Maryland Transportation Authority (MDTA). The consultants shall provide the resources and experts needed to provide architectural and engineering design and analysis services, including but not limited to design and analysis for buildings, facilities, and campuses; development of complete contract bid documents; facility condition inspections; asset management; ADA assessments and

compliance; 3D-Design Building Informational Modeling; and miscellaneous consulting services including space planning, facility master plan studies, emergency inspections, building envelope evaluations, and specialized building systems analysis and design.

Upon motion by Member W. Lee Gaines, Jr. and seconded by Member Mario J. Gangemi, the Members unanimously gave contingent approval to execute Contract No. MDTA 2019-02A – Comprehensive Building and Facility Engineering and Architectural Design, Construction, and Miscellaneous Consulting Services - Contract #'s AE 3081-0000, AE 3082-0000, AE 3083-0000, and AE 3084-0000.

UPDATE – CONSOLIDATED TRANSPORTATION PROGRAM (CTP) PROCESS AND ADDITIONS

Ms. Jeanne Marriott updated the MDTA Board on the CTP Process and additions to the capital program. She explained that each year the Maryland Department of Transportation (MDOT) issues the Consolidated Transportation Program (CTP) report which is Maryland's six-year capital budget for transportation projects. The MDTA portion of the CTP presents ongoing and new capital projects for MDTA facilities.

The CTP is updated twice a year and brought to the Board for approval in June as a draft and in November as a final. After approval by the Board Members in June, the Draft CTP is presented as part of the MDOT CTP Tour to State and local elected officials and citizens throughout the State of Maryland for review and comment. These meetings provide the local legislators and the public an opportunity to communicate their priorities and concerns in person.

She explained that new capital projects originate from five sources: long-range capital needs, inspection findings, regulatory compliance, increased capacity needs, and/or local priority letters/legislative requests.

The Fiscal Year 2022-2027 Final CTP will be presented to the Board for approval in November and includes twelve new projects. The new projects are: On-Call Electrical/ITS; On-Call Structural Repairs (2); On-Call Civil Repairs; Wash Bay, Salt Barn, and Fueling Facilities at Perryville; Maryland State Police Building Remodeling at John F. Kennedy Memorial Highway; Campus Fuel Oil Conversion; FMT East Vent Building Façade and Roof Replacement; FMT South Traffic Relief Improvements; Maintenance/Auto Building HVAC and Roof Replacement; Resurfacing North and South of Baltimore Harbor Tunnel; and Replace ICC Deckover Lighting.

Upon motion by Member Jeffrey S. Rosen and seconded by Member Dontae Carroll, the Members unanimously gave approval to add the specified projects to the capital program.

UPDATE – FISCAL YEAR 2020 INDEPENDENT AUDITOR'S SERVICE ORGANIZATION CONTROL 1 REPORT

Ms. Deborah Sharpless, along with Mr. William Seymour from SB & Company, LLC, and Ms. Chantelle Green, presented an overview of the results of the Fiscal Year 2021 Service Organization Control ("SOC") Report for the Maryland *E-ZPass* System. The audit period was from July 1, 2020 through April 19, 2021. There were no qualifications within the report; however, there were areas identified were the design and/or operating effectiveness can be enhanced.

UPDATE – LEGISLATIVE REPORT SUBMITTED TO THE LEGISLATURE

- **Maryland Transportation Authority Trucks Traversing Francis Scott Key (Key) Bridge Without Crossing the Key Bridge**

Ms. Chantelle Green explained that the Maryland General Assembly created the MDTA as a revenue-generating agency charged with those powers and duties relating to the supervision, financing, construction, operation, maintenance, and repair of transportation facilities projects on behalf of the Department of Transportation. The FSK Bridge is a statutorily defined transportation facility project, and the MDTA retains the sole legal authority to fix, revise, charge, and collect tolls and other charges and revenues for the FSK Bridge.

She further explained that the FSK Bridge facility is 10.9 miles in length, with the bridge itself being 1.9 miles in length. The facility crosses three bodies of water (1) Bear Creek, (2) Patapsco River, and (3) Curtis Creek. Tolls have been collected at the midpoint since the facility opened to traffic in 1977, which has included vehicles traveling east and west across the FSK Bridge and east across the Bear Creek bridge.

Today, there is an existing toll rate discount for trucks (3 or more axles) when crossing Bear Creek and using Broening Highway without crossing the FSK Bridge. The discounted truck toll rate is $2.00 per axle, which is a discount of 25% to 60% from the toll rate for crossing the FSK[1]. In January 2016, the MDTA reduced the toll rate when crossing Bear Creek and using Broening Highway. MDTA worked jointly with Maryland Motor Truck Association when reducing the toll. Annually, Maryland *E-ZPass* trucks saved $196,000 in tolls because of the reduced $2.00 per axle toll rate for the Bear Creek/Broening Highway only movements. Trucks with five or more axles with a Maryland *E-ZPass*® account are also eligible to receive additional savings through the post usage and supplemental rebate programs.

The FSK Bridge is considered a toll roadway facility. There are 121 toll roadway facilities in the United States outside of Maryland. Toll roadway facilities are categorized as an open or closed system. Closed systems do not allow for any free movements, resulting in a toll charged to customers whenever traveling on any portion of a toll facility regardless of the distance or major

[1] The $2.00 per axle discount is also offered at the Baltimore Harbor Tunnel (BHT) Childs Street, in which vehicles travel on BHT without going through the tunnel.

infrastructure traversed. The toll rate charged to customers generally scale based on the distance traveled. Nearly two-thirds of toll roadway facilities are closed systems and the remainder are open systems. The amount of free movement on toll roadway facilities is limited by toll agencies when feasible because free movements are seen as a credit negative by the rating agencies.

The FSK facility is considered an open system with very limited free movement. Open tolling systems allow for certain free movements and generally range from very little free movements to some free movements. An open system with very little free movements is a generally long-distance toll roadway that only has one or two free movements between minor, relatively less traveled interchanges and represents 12% of total toll systems. Roughly one-quarter of toll roadway facilities are open systems that have some free movements (more than limited).

The MDTA has managed the credit rating agencies' credit negative perspective of open systems by not expanding the portion of free movement toll facilities. Tolling the Bear Creek/Broening Highway only movement is an example of consistently tolling sections of the roadway that have been tolled from initial construction. The placement of the new toll gantries at the FSK facility were installed to allow a consistent tolling practice and to meet bondholder expectations with the transition to All-Electronic Tolling.

Education remains the sole option to address truck drivers' complaints for paying a toll when they do not cross the FSK Bridge. The MDTA is responsible for the entire 10.9-mile FSK Bridge facility, not solely the FSK Bridge itself. The FSK Bridge facility consists of significantly more than the FSK Bridge proper. The facility also includes 22 other bridges, 7 small structures, 167 ancillary structures, 38.5 lane miles of highway, and 1.5 lane miles of Broening Highway, all of which must be maintained exclusively by toll dollars.

The MDTA's Trust Agreement with its bondholders requires that the MDTA collect a toll for the use of the bridges, approaches, entrance plazas, interchanges, and toll stations, which are, by definition, part of the Transportation Facilities Project. If the MDTA does not collect tolls, it is depriving bondholders of a property interest in those revenues that were previously collected. Over the past five years, approximately $2.1 million has been spent on maintenance, repair, and inspection of the Bear Creek section. Within the next few years, major projects totaling between $80 million to $90 million are required to maintain the Bear Creek section of the roadway and bridges in a state of good repair.

UPDATE – 2020 UPDATES FROM STRUCTURES INSPECTION PROGRAM

Mr. Tekeste Amare and Ms. Lillian Sidrak gave an update on the Fiscal Year 2021 Annual Facilities Inspections. They provided a brief overview of the types of inspections that have been completed as well as the Inspection Findings for all structures that were inspected.

UPDATE – THIRD GENERATION ELECTRONIC TOLL COLLECTION (3G ETC) SYSTEM

Mr. Will Pines updated the MDTA Board on the Third Generation Electronic Toll Collection (3G ETC) post-transition operations and traffic & revenue.

Mr. Pines explained that the TransCore and Kapsch systems went live on April 29, 2021. Post-transition and software development activities and risk management continue and implementation of the plan to address the backlog of unprocessed transactions is ongoing.

UPDATE – EXECUTIVE DIRECTOR

Mr. Jim Ports updated the MDTA Board on the following items: He gave an update on the Mind of the Leader Program and thanked Ms. Kimberly Millender for all she does in keeping the program running; the IBTTA's Annual Meeting in Anaheim, California; The Tier 1 NEPA Bay Crossing Study; the Bay Bridge Walk; Congratulated MDTA Police Chief Colonel Kevin M. Anderson and the MDTA Police who were recognized by MDOT MVA Highway Safety Office with the Traffic Safety Award; and in honor of MDTA's 50th Anniversary, Mr. Ports talked about all electronic tolling.

VOTE TO GO INTO CLOSED SESSION

At 10:41 a.m., upon motion by Member William H. Cox, Jr. and seconded by Member Dontae Carroll, the Members voted unanimously to move into Closed Session under the Maryland Open Meetings Act, the MDTA Board will meet in Closed Session under the General Provisions Article, Sections 3-305(b)(10) and (12) to receive an update on deployment of police staff and resources and other security measures and to discuss a pending investigative proceeding involving possible criminal conduct; and General Provisions Article, Sections 3-305(b)(8) to receive a status update on all litigation currently pending against the MDTA.

In attendance for Closed Session was Acting Chairman Sean Powell, Members Carroll, Cox, Ensor, Gaines, Gangemi, Penny-Ardinger, Rosen, and von Paris (via telephone); and Jim Ports, Kim Millender, Col. Kevin Anderson, and Natalie Henson.

VOTE TO ADJOURN CLOSED SESSION

At 11:27 a.m., a motion was made by Member Dontae Carroll and seconded by Member William H. Cox, Jr., which was unanimously approved, to adjourn the Closed Session and return to Open Session. There were no actions taken in Closed Session.

VOTE TO ADJOURN MEETING

There being no further business, upon motion by Member Mario J. Gangemi and seconded by Member William C. Ensor, III, the Members unanimously voted to adjourn the meeting at 11:29 a.m.

The next MDTA Board Meeting will be held on Thursday, November 18, 2021 at 9:00 a.m. at MDTA located at 2310 Broening Highway, Baltimore Maryland.

APPROVED AND CONCURRED IN:

_____

Gregory Slater, Chairman

TAB 2

MEMORANDUM

TO: MDTA Board
FROM: Ms. Donna DiCerbo, CPPO, CPPB, Director of Procurement
SUBJECT: MR-3029-0000 – On-Call Miscellaneous Paving Repairs
DATE: November 18, 2021

PURPOSE

To seek contingent approval to execute Contract No. MR-3029-0000 – On-call Miscellaneous Paving Repairs.

SUMMARY

This contract provides for the removal by grinding and the replacement of bituminous concrete paving at bridge approaches, toll plazas, shoulders, acceleration and deceleration lanes, ramps, parking lots, joint repairs, slab failures, and mainline roadways which are experiencing surface distortion or distresses. The work on this contract will be performed as on-call task assignments directed by the MDTA Engineer. The work under this contract may be performed at any of Maryland Transportation Authority (MDTA) facilities, including the Baltimore Harbor Tunnel, Fort McHenry Tunnel, Francis Scott Key Bridge, Governor Harry W. Nice/Senator Thomas "Mac" Middleton Memorial Bridge, Intercounty Connector, John F. Kennedy Memorial Highway, Point Breeze Office Complex, Thomas J. Hatem Memorial Bridge, US40/MD222, and the William Preston Lane Jr. Memorial Bridge; and related approach roadways located in Anne Arundel County, Baltimore City, Baltimore County, Cecil County, Charles County, Harford County, Howard County, Montgomery, Prince Georges County, and Queen Anne's County.

RECOMMENDATION

To provide contingent approval to execute Contract No. MR-3029-0000 – On-call Miscellaneous Paving Repairs.

ATTACHMENT

- Project Summary

AUTHORITY BOARD PROJECT SUMMARY

MR-3029-0000 On-call Miscellaneous Paving Repairs

PIN NUMBER	2549
CONTRACT NUMBER	MR-3029-0000
CONTRACT TITLE	On-call Miscellaneous Paving Repairs

PROJECT SUMMARY

This contract provides for the removal by grinding and the replacement of bituminous concrete paving at bridge approaches, toll plazas, shoulders, acceleration and deceleration lanes, ramps, parking lots, joint repairs, slab failures, and mainline roadways which are experiencing surface distortion or distresses. The work on this contract will be performed as on-call task assignments directed by the MDTA Engineer.

The work under this contract may be performed at any of Maryland Transportation Authority (MDTA) facilities, including the Baltimore Harbor Tunnel, Fort McHenry Tunnel, Francis Scott Key Bridge, Governor Harry W. Nice/Senator Thomas "Mac" Middleton Memorial Bridge, Inter County Connector, John F. Kennedy Memorial Highway, Point Breeze Office Complex, Thomas J. Hatem Memorial Bridge, US40/MD222, and the William Preston Lane Jr. Memorial Bridge; and related approach roadways located in Anne Arundel County, Baltimore City, Baltimore County, Cecil County, Charles County, Harford County, Howard County, Montgomery, Prince Georges and Queen Anne's County.

SCHEDULE

ADVERTISEMENT DATE	8/21/2021
ANTICIPATED NOTICE TO PROCEED DATE	Dec-21
DURATION (CALENDER DAYS)	1,095

MBE PARTICIPATION	**($) Advertised GOAL (%)**	**Proposed GOAL (%)**
OVERALL MBE	18.00%	18.03%
AFRICAN AMERICAN	0.00%	4.15%
ASIAN AMERICAN	0.00%	4.15%
HISPANIC AMERICAN	0.00%	9.73%
WOMEN	0.00%	0.00%
NATIVE AMERICAN	0.00%	0.00%
VSBE	1.00%	1.00%

ENGINEER'S ESTIMATE (EE) **$9,974,735.00**

BID RESULTS	**BID AMOUNT ($)**	**% VARIANCE TO EE**
P. Flanigan & Son, Inc.	$8,755,167.00	-12%
Allan Myers MD, Inc.	$9,065,700.00	-9%

BID PROTEST **YES** ☐ **NO** ☑

FUNDING SOURCE 100.00% **TOLL REVENUE**

MEMORANDUM

TO: MDTA Board
FROM: Ms. Donna DiCerbo, CPPO, CPPB, Director of Procurement
SUBJECT: MDTA 2020-02 – ITS & Electrical Design Services – Contract Numbers AE 3077-0000, AE 3078-0000, AE 3079-0000, and AE 3080-0000
DATE: November 18, 2021

PURPOSE

To seek contingent approval to execute Contract No. MDTA 2020-02 – ITS & Electrical Design Services – Contract Numbers AE 3077-0000, AE 3078-0000, AE 3079-0000, and AE 3080-0000.

SUMMARY

This project involves the award of four (4) contracts to consultant engineering firms to provide professional design services for ITS & Electrical projects as directed by the MDTA. The scope includes but is not limited to providing concept designs, feasibility studies, alternatives and planning, preliminary design services, technical recommendations, preparing system availability analysis, and developing operational cost and life cycle analysis for various system options where required. Such services are necessary to ensure that MDTA's ITS & Electrical assets are planned and designed in accordance with all applicable codes and standards. Scope will also include assisting in the diagnosis of problems within ITS & Electrical systems; providing analysis of proposed changes in operations or systems design for impacts potentially unanticipated to other components of operations to identify any needs for improvement or changes.

RECOMMENDATION

To provide contingent approval to execute Contract No. MDTA 2020-02 – ITS & Electrical Design Services, Contract Numbers AE 3077-0000, AE 3078-0000, AE 3079-0000, and AE 3080-0000.

ATTACHMENT

- Project Summary

AUTHORITY BOARD PROJECT SUMMARY

Contract No. MDTA 2020-02 ITS & Electrical Design Services

PIN NUMBER	N/A
MDTA PROJECT NUMBER	MDTA 2020-02
CONTRACT TITLE	ITS & Electrical Design Services
PROJECT SUMMARY	This project involves the award of four (4) contracts to consultant engineering firms to provide professional design services for ITS & Electrical projects as directed by the MDTA. The scope includes but is not limited to: providing concept designs, feasibility studies, alternatives and planning, preliminary design services, technical recommendations, preparing system availability analysis and developing operational cost and life cycle analysis for various system options where required. Such services are necessary to ensure that MDTA's ITS & Electrical assets are planned and designed in accordance with all applicable codes and standards. Scope will also include assisting in the diagnosis of problems within ITS & Electrical systems; providing analysis of proposed changes in operations or systems design for impacts potentially unanticipated to other components of operations to identify any needs for improvement or changes.

SCHEDULE

ADVERTISEMENT DATE	October 13, 2020
ANTICIPATED NTP DATE	January 1, 2022
DURATION/TERM	Five (5) YEARS

PROPOSER	**MDTA CONTRACT NO.**	**CONTRACT AMOUNT**
Rummel, Klepper & Kahl/Whitman,Requart and Associates	AE 3077-0000	$4,250,000.00
Jacobs Engineering Group, Inc	AE 3078-0000	$4,250,000.00
Mead & Hunt, Inc./WSP USA, Inc.	AE 3079-0000	$4,250,000.00
Dewberry Engineering, Inc./Whitney, Bailey, Cox & Magnani, LLC	AE 3080-0000	$4,250,000.00

	YES	**NO**
PROTEST		✓

FUNDING SOURCE **100% TOLL REVENUE**

		MBE PARTICIPATION			
	ADVERTISED GOAL (%)	**AE-3077 PROPOSED GOAL (%)**	**AE-3078 PROPOSED GOAL (%)**	**AE-3079 PROPOSED GOAL (%)**	**AE-3080 PROPOSED GOAL (%)**
MBE PARTICIPATION - OVERALL					
OVERALL MBE	23.00%	23.00%	23.00%	23.00%	25.00%
AFRICAN AMERICAN	7.00%	7.00%	7.00%	7.00%	8.00%
ASIAN AMERICAN	-	0.00%	6.00%	0.00%	7.00%
HISPANIC AMERICAN	-	6.00%		3.00%	0.00%
WOMEN OWNED	10.00%	10.00%	10.00%	13.00%	10.00%
VSBE	1.00%	1.00%	1.00%	1.00%	1.00%

MEMORANDUM

TO: MDTA Board
FROM: Ms. Donna DiCerbo, CPPO, CPPB, Director of Procurement
SUBJECT: J01B1600011 – DYNAC® Maintenance Contract
DATE: November 18, 2021

PURPOSE

To seek contingent approval to execute Sole Source Contract No. J01B1600011 – DYNAC® Maintenance Contract.

SUMMARY

The MDTA is issuing this Sole Source Contract in order to procure a full-service software maintenance and service plan (including repairs) for the DYNAC® SCADA system. The primary purpose of the DYNAC® Supervisory Control and Data Acquisition (SCADA) system is to manage tunnel ventilation fans, pumps, lighting systems, hydrocarbon and carbon monoxide sensors, cameras, traffic control gates, signs, and signals at BHT, FMT, and the ICC Deckover.

RECOMMENDATION

To provide contingent approval to execute Sole Source Contract No. J01B1600011 – DYNAC® Maintenance Contract.

ATTACHMENT

- Project Summary

AUTHORITY BOARD PROJECT SUMMARY

J01B1600011 DYNAC Maintenance Contract

PIN NUMBER	N/A
CONTRACT NUMBER	J01B1600011
CONTRACT TITLE	Sole Source DYNAC Maintenance Contract
PROJECT SUMMARY	The Maryland Transportation Authority is issuing this Sole Source Contract in order to procure a full-service software maintenance and service plan (including repairs) for the DYNAC SCADA system. The primary purpose of the DYNAC® Supervisory Control and Data Acquisition (SCADA) system is to manage tunnel ventilation fans, pumps, lighting systems, hydro carbon and carbon monoxide sensors, cameras, traffic control gates, signs and signals at BHT, FMT, and the ICC Deckover.

SCHEDULE			**($)**	
ADVERTISEMENT DATE	N/A	**ENGINEER'S ESTIMATE (EE)**	**$8,862,229.92**	
ANTICIPATED NOTICE TO PROCEED DATE	Feb-22			
DURATION (CALENDAR DAYS)	1825	**MBE PARTICIPATION**	**Advertised Goal**	**Proposed Goal DYNAC**
		OVERALL MBE	**0.00%**	**0%**
		No Sub Goals	**0.00%**	
		VSBE		

BID RESULTS	**BID AMOUNT ($)**	**% VARIANCE TO EE**
KAPSCH TRAFFICCOM USA, INC.	**$8,884,230.00**	**0.2%**

BID PROTEST YES ☐ NO ☑

TAB 3

VERBAL

TAB 4

MEMORANDUM

TO: MDTA Board
PRESENTED BY: Mr. Will Pines, PE, PMP, CCM, Chief Operating Officer
SUBJECT: Third Generation Electronic Toll Collection (3G ETC) System Current Operations Update
DATE: November 18, 2021

PURPOSE

To brief the Maryland Transportation Authority (MDTA) Board on the 3G ETC ongoing operations.

SUMMARY

TransCore and Kapsch's systems went live on April 29, 2021. Post-transition and software development activities and risk management continue. Implementation of the plan to address the backlog of unprocessed transactions is ongoing.

ATTACHMENT

- 3G ETC System Update Presentation

Electronic Tolling
Current Operations Update

MDTA Board Meeting

November 18, 2021

Schedule Update

- As previously noted, Contractor provided an updated SAT schedule
  - Schedule based on a fully agile release approach with new tickets addressed initially every 3 weeks and now about every 2 weeks
  - Contractor is on schedule with 6 releases in production to date
- Negotiating with Contractor to establish clear SAT deadlines and ensuring Post-SAT is limited to punchlist items
  - Modifications sent to the vendors for review,
  - Will update MDTA Board, State DOIT and BPW modifications updates,
  - The schedule portion of the modifications is anticipated to be a non-compensable time extension,
  - Revising liquidated damages provisions for the CSC contract to provide accountability to the schedule,
  - Will also include updates for COVID backlog and AET revisions

Key Focus Areas

Software Reports & Documentation

- Continue finalizing outstanding reports and documentation

QA/QC & Lane Maintenance Improvements

- Coordinating and addressing ongoing AET conversions for JFK, FMT and HWN
  - JFK highway speed AET Go Live is planned for November 2021
- Accountability for timeliness of resolution for identified issues
- Enforcement of contractual requirements
- Consistent pro-active approach to the maintenance tasks

System Acceptance & Key Performance Indicators (KPI)

- Finalize System Acceptance Testing and Plans
  - Reviewing and approving reports for system monitoring
- Plan and test KPI
  - Some revisions to KPI verbiage in the Modification to improve processing

Contract Administration & Operational Functions

- Coordinating responsibilities & communication across IT, Operations and Finance
- Standing up contract administration tools & processes
- Forming cross-functional workgroups

Post Go-Live Risk Tracking

Call Center

- High volumes and wait times persist with average waits over an hour and half
  - Increased volumes with escalations resuming and backlog processing
    - The month of October received nearly 60,000 more calls than August
  - Staffing losses continue to be an issue, but hiring continues
    - 10/11 to 11/1 – CIC lost 25 employees
  - Overflow center and new hires supporting volumes
  - Certain periods heavier than others
- Website improvement releases continue to help ease volumes
- Actively managing customer outreach to reduce call volumes and avoid communications that may drive call volumes

Post Go-Live Risk Tracking

Transaction & Backlog Processing

- Transactions released manually based on a pre-defined schedule
  - Tight coordination with MDTA and vendors to maintain processing
  - Actively metering NOTDs at 35,000 envelopes per day with an average of just over 3 transactions per envelope
- Escalations as of 11/10/2021
  - Approximately 19.8 million video transactions posted to customer accounts
    - Several notices sent to alert customers to proactively pay electronically to receive early payment discounts
    - $7.1 million PNOTDs paid online to date for early payment discounts
    - Proactive mailer to customers with more than 25 transactions complete
  - 7.7 million NOTD transactions have been mailed, since resuming
  - Image certifications and citations fully resumed

QA/QC

- Actively onboarding KPI reporting and tracking to ensure meeting Contract
- Striving for continuous improvement to address any anomalies found, even if meeting the KPI

Backlog Processing Status

Current Status – 11/10/21

- Continue to anticipate processing all backlog within FY22 (Summer 2022)
  - Processing based on date of posting to accounts
  - Mailings and revenue will follow the postings
- Continued transaction processing
  - Approximately current transactions plus one week of backlog, per week
  - Some clean up activities related to IAG processing
- Video Toll Transactions
  - ITOLs separated and issued with AVI
  - Metering plan implementation ongoing to limit customer impacts
  - Monitoring the plan and call center impacts

TAB 5

MEMORANDUM

TO: MDTA Board
FROM: Mr. Allen W. Garman, Director of Treasury & Debt
SUBJECT: Investment Report
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

The purpose of this item is to provide the Maryland Transportation Authority Board with a quarterly update on investment strategy and performance. This item was discussed in detail at the November 9, 2021 Finance Committee meeting and the Committee supports the continuation of the current investment strategies for all accounts.

SUMMARY

For the trailing twelve-month period ended September 30, 2021, investments conformed to Investment Policy limitations. Portfolio structuring by account adhered to board approved strategy. Total return performance for the General account was commensurate with the benchmark index. During the duration extension transition period for the M&O Reserve, the account has gradually lengthened to the new index and effective October now approximates the new benchmark's duration. Trailing twelve-month total return performance for the M&O Reserve will not have a good comparable benchmark until October 2022, a full year after transition, but monthly returns should align with the index beginning November 2021.

The MDTA Board approved an investment strategy and benchmark change at its February 27, 2020 meeting to lengthen the average maturity of certain unrestricted reserves to 7.5-years from 3-years, as well as the associated *Effective Duration* (rate driven price volatility) to 7.0 from 3.0. Implementation of this strategy change was delayed as a result of the pandemic induced market volatility, distortions, and record low interest rates. At the November 2020 meeting, the Board approved a gradual transition for a small portion (14%) of the unrestricted cash held in the M&O Reserve. The Investment Committee will continue to update the Board periodically on the recommended timing for restructuring the remaining 86% of unrestricted reserves held in the General account.

INVESTMENT STRATEGY

The agency employs either a Matched Funding or Total Return approach for certain categories of accounts. Debt Service and Capital accounts are managed on a Matched Funding basis, with investment maturities matched to known or potential outflows. Unrestricted and Restricted Reserves are managed for Total Return, with consideration of the risk/return tradeoff associated with longer-term structures. Longer duration portfolios benefit from higher average annual returns over multiyear periods and tend to exhibit greater return volatility relative to shorter-term maturity structures.

The General account is benchmarked to a composite index of 1-5-year bullet agency indices. The blended composite index is fifty percent of the ICE BOFAML 1-3 Year Bullet Agency Index and fifty percent of the 3-5 Year Bullet Agency Index. Investment maturities are generally staggered from three-months to five-years, with overweight in the three- to five-year maturity bands and an effective duration target of approximately 3.0.

The M&O Reserve account began transitioning in December 2020 from the 1-5 year bullet agency benchmark to a new composite of 1-13 year Treasury Strip indices that approximates the effective duration of a laddered portfolio of 6-month to 15-year securities. The new strategy lengthened the average maturity of the account to 7.5-years from 3-years, as well as the associated effective duration to 7.0 from 3.0. During the duration extension transition period, the portfolio remained short relative to the new index and trailing twelve-month total return performance will not have a good comparable benchmark.

RELATIVE PERFORMANCE AND BENCHMARKING

The General account unrestricted reserve was positioned during the trailing twelve-months with an effective duration averaging near the 1-5 year bullet agency benchmark. The General account's trailing total return performance of -0.22 percent was commensurate with the index's return of -0.23 percent, with the negative return associated with the mark-to-market price changes in the rising rate environment.

The M&O Reserve's trailing performance of -0.75 percent was between the old benchmark's return of -0.22 percent and the new benchmark's return of -3.48 percent, with the variance attributable to the short duration positioning in the rising rate environment. As noted above in the Strategy section, the M&O Reserve remained short relative to the new benchmark index during the extension period. Although trailing twelve-month returns are not comparable to either the new or old benchmarks, single month returns should begin to align with the new benchmark starting in November.

RECOMMENDATION

Approve the investment strategies for the current quarter. During the November 9 meeting, the Finance Committee concurred with the continuation of the current investment strategies for the unrestricted reserves.

TAB 6

MEMORANDUM

TO: MDTA Board
FROM: Mr. Carl Chamberlin, Project Manager
SUBJECT: Phase 1 South: American Legion Bridge I-270 to I-370 Toll Rate Range Setting Process Public Comment Period 2 Summary Report and Approval to Accept Staff's Final Recommendation
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

To provide a summary of comments received during the second public comment period for the Phase 1 South: American Legion Bridge I-270 to I-370 Toll Rate Range Setting Process and to request MDTA Board approval on the final proposal.

SUMMARY

On September 30, 2021, the Maryland Transportation Authority (MDTA) Board unanimously approved to proceed with opening the second public comment period on the Phase 1 South: American Legion Bridge I-270 to I-370 Tolling Proposal as part of the toll rate range setting process. The public comment period began on September 30, 2021 and continued until 5PM, October 28, 2021. The following report covers in greater detail the process MDTA utilized to gather public comments and a summary of the comments received during the above mentioned second comment period. In addition, the last attachment provides a summary of the staff's recommended action (recommended toll rate ranges) for acceptance by the MDTA Board.

ATTACHMENTS

- Phase 1 South: American Legion Bridge I-270 to I-370 Toll Rate Range Setting Process Public Comment Final Report
- Approval to Accept Staff's Recommended Action
- Recommended Action (Recommended Toll Rate Ranges, Soft Rate Caps, Discounts & Free Passage)

Phase 1 South: American Legion Bridge I-270 to I-370

Toll Rate Range Setting Process

Public Comment Period 2 Summary Report

November 10, 2021

Executive Summary

On September 30, 2021, the Maryland Transportation Authority (MDTA) Board voted to open a second public comment period as part of the toll rate range setting process for proposed High Occupancy Toll (HOT) lanes for Phase 1 South: American Legion Bridge I-270 to I-370. The four-week public comment period began on September 30, 2021, and continued until 5PM, October 28, 2021.

Public comment was accepted on the recommended toll rate ranges, which reflected a new base minimum per-mile toll rate of 17 cents per mile – lower than the 20 cents per mile proposed May 20, 2021 – as a result of comments received during the first public comment period that ran from May 20 to August 14, 2021.

Elements of the recommended action (recommended toll rate ranges) included:

I. Minimum and Maximum Toll Rate Ranges
- This is the lowest and highest per-mile toll rates that may be charged within any tolling segment. The minimum toll rate also refers to the lowest total toll (not per mile) that may be charged, regardless of how far a vehicle travels, to ensure short HOT lanes trips are charged a flat minimum toll to cover toll collection costs. There are no changes from the May 20 proposal to the maximum per-mile toll rates nor to the minimum toll rate (not per mile).

II. Soft Rate Cap
- A per-mile toll rate within each toll rate range that can only be exceeded if and when vehicle speed is reduced, or traffic volumes increase, to predetermined speed and throughput thresholds. The caps protect our customers by ensuring that the Section Developer may only exceed a specific per-mile toll rate (within the approved ranges) for the impacted tolling segment as specified by the predetermined thresholds. This will provide drivers choosing to use the HOT lanes a faster and more reliable trip. There are no changes from the May 20 proposal to the soft rate cap.

III. Discounts
- To provide opportunities for faster, more reliable carpooling, vanpooling and transit options; free passage will be granted in the HOT lanes for High Occupancy Vehicles (HOV) 3+ (all vehicles carrying three or more passengers) and buses, as well as for motorcycles. There are no changes from the May 20 proposal to the discounts.

IV. Escalation Factors
- The approved toll rate ranges are intended for the duration of the Phase 1 South agreement. For the toll rates to effectively manage demand and ensure reliability for users of the HOT lanes into the future, the maximum toll rate range, soft rate

cap and unregistered video surcharge will escalate over time to account for inflation, population employment, and income growth. The minimum per-mile toll rate and minimum toll are subject to escalation for inflation only. There are no changes from the May 20 proposal to the escalation factors.

Public comments for the official record could be submitted September 30 to 5PM October 28, 2021, through a number of methods including an online comment form, U.S. mail, 24/7 voicemail, and email. Comments received from respondents were categorized according to the element of the recommended toll rate ranges that was commented on. If a respondent provided multiple comments on several different elements, those comments were counted individually. A total of 95 respondents provided comment, with their comments categorized into 164 total individual comments. Ninety-one percent of the comments (150) were received via the online comment form. Comments received via email accounted for the remaining 9% (14). Categorizing the comments by element of the recommended toll rate ranges, there were 33 comments (20%) regarding the minimum and maximum toll rate ranges, 10 comments (6%) regarding the soft rate cap, 17 comments (10%) regarding the process for annual escalation, 26 comments (16%) regarding the toll discounts, and 78 comments (48%) regarding different issues associated with the MDTA that were categorized as "other."

Of the 95 total respondents, 51 respondents provided their location via full address or just their zip code. The majority of comments were received from Montgomery County, accounting for 78% (40), followed by Frederick County at 8% (4), Prince George's County at 6% (3), Baltimore City at 2% (1), Howard County at 2% (1), Carroll County at 2% (1), and Worcester County at 2% (1). Most comments were received from areas near Rockville, MD.

Through the online comment form, the public was able to express their support or opposition to various aspects of the recommended toll rate ranges. **Figure 1** shows the final breakdown of support and opposition for these topics. Responses received during the second comment period are comparable to responses received during the first comment period.

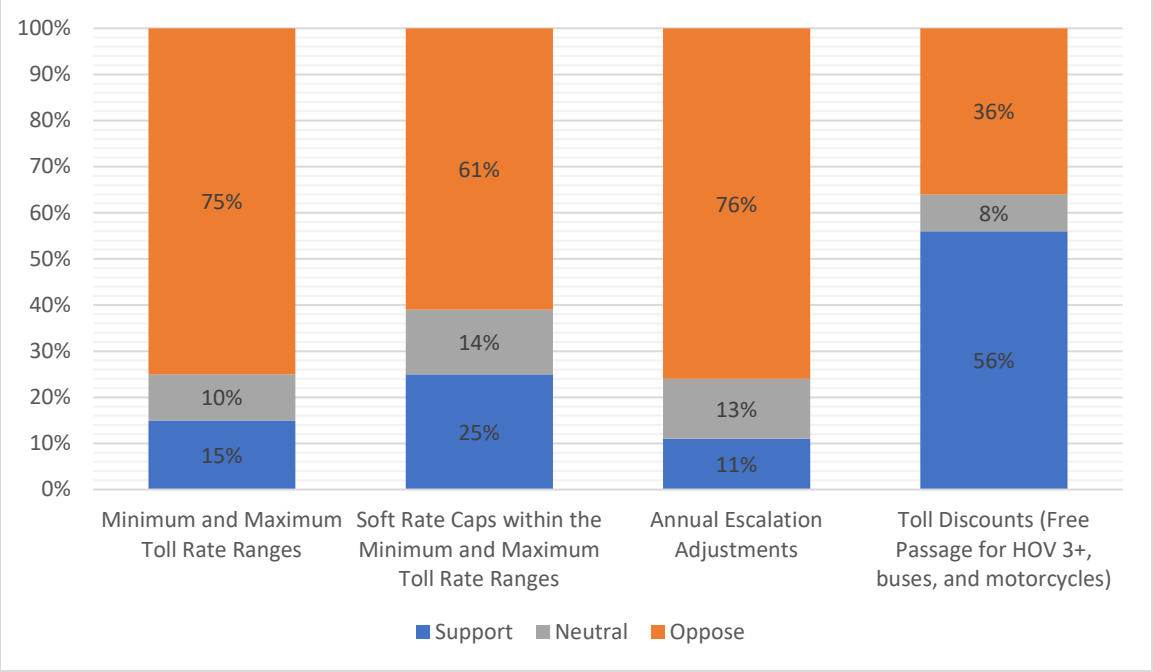

Figure 1 - Public Responses (Support, Neutral or Oppose) to Elements of the Recommended Toll Rate Ranges for Phase 1 South: American Legion Bridge I-270 to I-370

In addition, comments were submitted by the public outside of the scope of the Phase 1 South: American Legion Bridge I-270 to I-370 Toll Rate Range Setting Process. These included expressing opposition to the Managed Lanes Study's Preferred Alternative for Phase 1 South, concern over a Public Private Partnership (P3), and requests for the exploration of mass transit alternatives to adding toll lanes.

The following report covers in greater detail the process MDTA utilized to gather public comments and a summary of the comments received.

Table of Contents

I. Public Comment Process

On September 30, 2021, the Maryland Transportation Authority (MDTA) Board voted to open a second public comment period as part of the toll rate range setting process for proposed High Occupancy Toll (HOT) lanes for Phase 1 South: American Legion Bridge I-270 to I-370. The four-week public comment period began on September 30, 2021, and continued until 5PM, October 28, 2021.

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- The approved toll rate ranges are intended for the duration of the Phase 1 South agreement. For the toll rates to effectively manage demand and ensure reliability for users of the HOT lanes into the future, the maximum toll rate range, soft rate

cap and unregistered video surcharge will escalate over time to account for inflation, population employment, and income growth. The minimum per-mile toll rate and minimum toll are subject to escalation for inflation only. There are no changes from the May 20 proposal to the escalation factors.

A total of 164 comments from 95 respondents were received throughout the public comment period, which began on September 30, 2021, and continued until 5PM, October 28, 2021.

Submission Methods

Public comments for the official record could be submitted through a number of methods including an online comment form, U.S. mail, 24/7 voicemail, and email. All methods were advertised to the public. The distribution of submission methods is illustrated in **Figure 2**. A summary of the total comments received per each comment method is illustrated in **Figure 3**. The comment form is included as **Appendix A**.

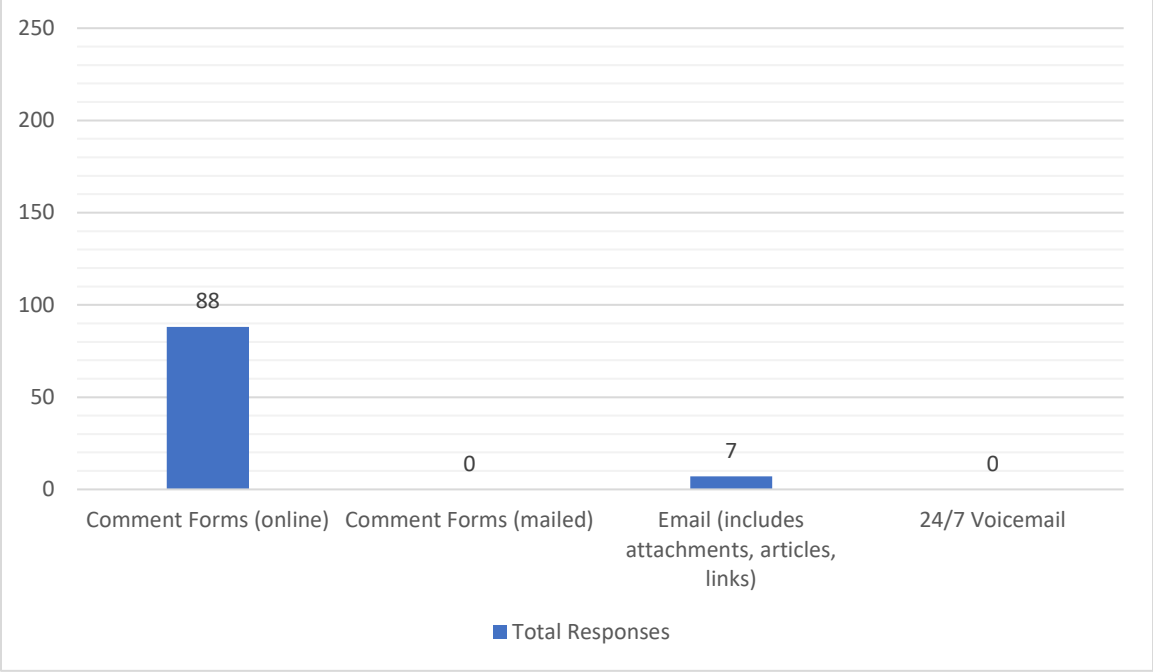


Figure 2- Responses by Comment Method (Total Responses, 95)

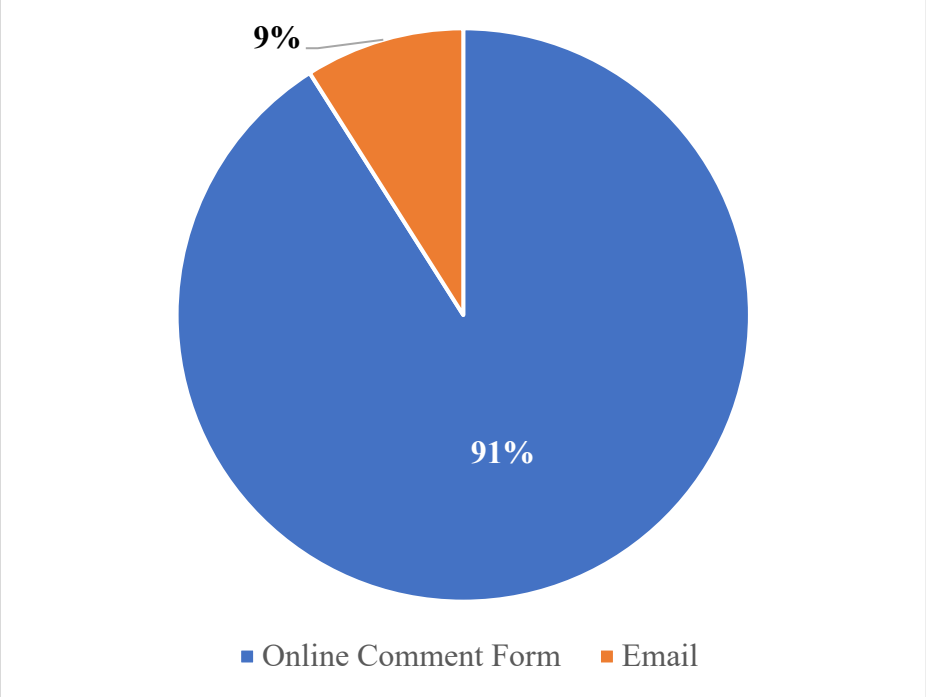


Figure 3- Percentage of Comments by Source (Total Comments, 164)

Comments received from respondents were categorized according to the element of the recommended toll rate ranges that was being commented on (**Table 1**). If a respondent provided multiple comments on several different elements of the recommended toll rate ranges those comments were counted individually. A total of 95 respondents provided 164 total individual comments. Most comments received 91% (150) were received via the online comment form. Comments received via email accounted for the other 9% (14).

Table 1– Total Number of Respondents and Comments by Method

Comment Method	Respondents (No.)	Comments (No. / % of Total)
Comment Form (online)	88	150 / 91%
Comment Form (hard copy)	0	0 / 0%
Email (attachments, letters, links)	7	14 / 9%
Voicemail (24/7 line)	0	0 / 0%
Total	**95**	**164**

Data Collection

To improve the quality of data collected and to better analyze the results of the specific responses, MDTA utilized Public Input Community Engagement Software (Public Input). A comment form was developed and made available to the public via the project website online

(via Public Input) and by hard copy. The online comment form could be completed electronically or downloaded to fill out and provide to the MDTA via email or U.S. Mail. The comment form was tailored to prompt respondents to select (via check boxes) whether respondents supported, were in opposition to, or were neutral towards each tolling element. The comment form also included space for respondents to provide written comments to expand further on their selection. In addition to elements of the recommended toll rate ranges, the comment form also requested information from respondents on how often and which MDTA facilities they utilize, how they pay tolls, and their zip code, which enabled improved data quality and better data analysis. It also reduced data entry by MDTA staff as submissions were entered by the public directly into the database used for analysis.

In addition to capturing comment form responses, Public Input also captured all emails sent to the project email address (ALB270TollSetting@mdta.maryland.gov).

Each comment received, regardless of method, was reviewed and categorized by MDTA staff.

II. Respondent Data Analysis

Respondent location information was not required to be provided with each comment; however, this data was requested from each of the comment form respondents and was able to be obtained from addresses provided in emails. Of the 95 total respondents, 51 respondents provided their location. All of the respondents who provided location data were from Maryland. **Figure 4** presents a map that indicates the location of comment respondents.

The majority of comments were received from Montgomery County, accounting for 78% (40), followed by Frederick County at 8% (4), Prince George's County at 6% (3), Baltimore City at 2% (1), Howard County at 2% (1), Carroll County at 2% (1), and Worcester County at 2% (1). Details of the comments provided by zip code can be found in **Appendix B**.

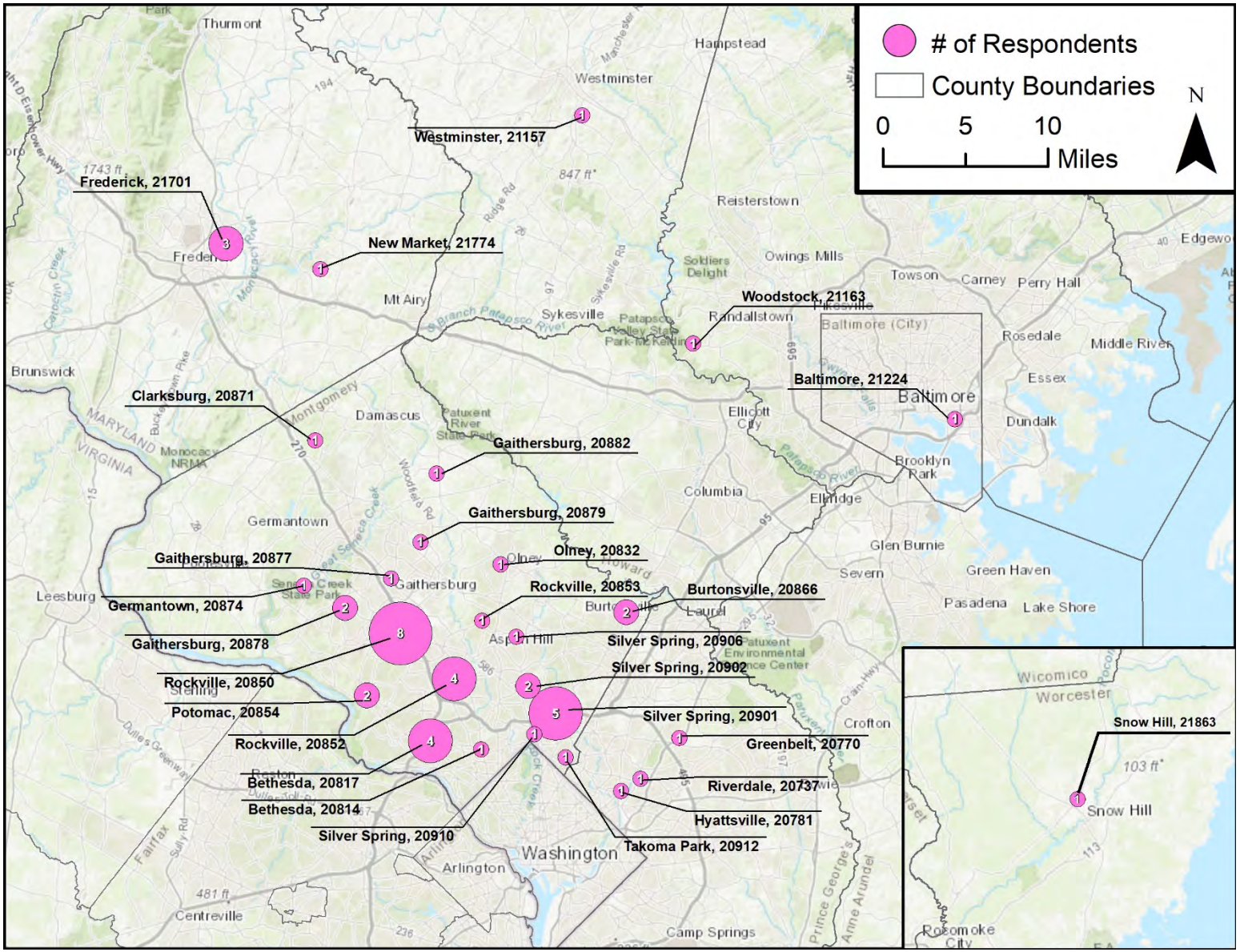


Figure 4- Public Comments by Zip Code

Of the 88 comment forms received, 75 respondents provided input on how often they regularly travel within the project limits. A majority of the respondents (44%) answered that they travel within the Phase 1 South: American Legion Bridge I-270 to I-370 limits three or more times a week. The total number of respondents for each usage frequency are displayed in **Figure 5**.

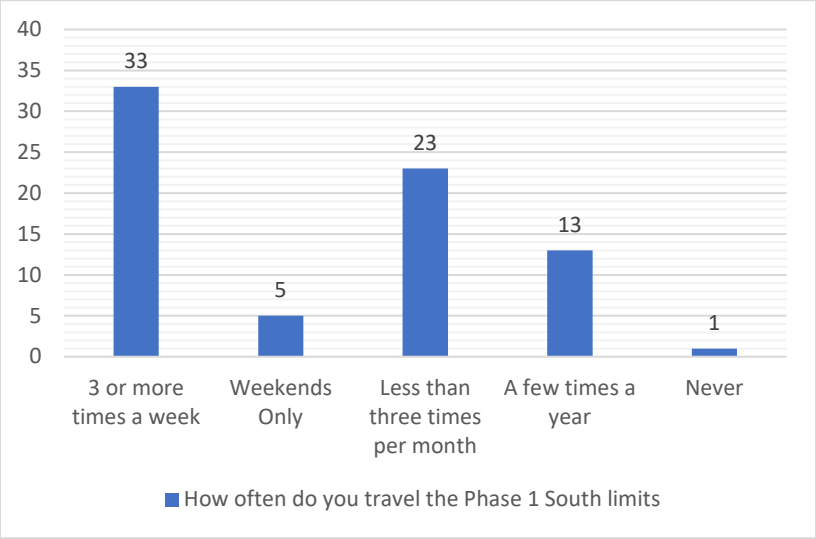


Figure 5- Frequency of Usage

In addition to location data and frequency of usage, the comment form requested specific information regarding how toll facility users pay their tolls. Of the 88 comment forms received, 75 respondents provided input on how they pay for tolls. A majority of the respondents (83%) answered that they pay using *E-ZPass*®. The total number of respondents for payment type are displayed in **Figure 6.**

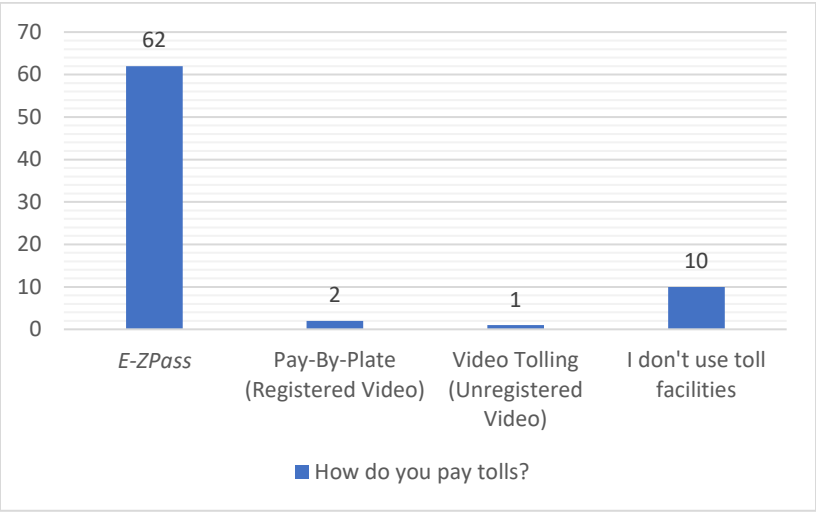


Figure 6- Payment Types

III. Comment Summary and Analysis

Public comments on the recommended toll rate ranges for Phase 1 South: American Legion Bridge I-270 to I-370 were solicited for each element, including minimum and maximum toll rate ranges, soft rate caps, annual escalation, and discounts. While the email comment method provided an opportunity for the public to provide feedback on the recommended toll rate ranges, comments received via email did not always address specific elements and were instead related to the general concept of tolling, public-private partnerships (P3s), and the Managed Lanes Study's Preferred Alternative. Conversely, the comment form provided more structure than the email method; however, respondents still often provided feedback on the comment form that was general in nature or provided the same response for all elements of the recommended toll rate ranges, such as, "no tolls." It should also be noted that with the comment form, some respondents checked off their selection for "support," "oppose" or "neutral" for each element but did not leave a written comment. Others left written comments for certain elements but did not check off their selection for "support," "oppose" or "neutral."

Respondents' selections for "support," "oppose" or "neutral" on the comment forms were not counted as comments; only written comments provided in the additional space on the comment form or via other methods (email) were counted as comments.

Given the various comment methods available, some respondents chose to provide comments through more than one method. For this analysis, comments were not counted in the totals if they were duplicative of a previously received comment by the same respondent. However, for example, if a respondent provided comments via both comment form (first) and email (second), any unique comments provided in the email that were not already captured by the comment form were counted in the totals shown in this summary report.

The discussion below shows results by recommended toll rate ranges element and a summary on the type of comments received:

Minimum and Maximum Toll Rate Ranges

Comment Form Results: Of the 88 comment forms received, 85 respondents selected a check box noting whether they support (15%), are neutral (10%), or oppose (75%) the recommended minimum and maximum toll rate ranges.

All Comments: Of the 164 total comments received (all methods), 33 provided an opinion regarding the recommended minimum and maximum toll rate ranges.

The most common themes provided included general opposition to tolls and that the recommended toll rates are too high.

Comment from 9/30/2021 @ 4:54pm states:

> "Toll rates only benefit those who have money to afford them. Thus, the lower working class will be affected and taxed the most."

Comment from 10/1/2021 @ 9:00am states:

> "The maximum toll rate is still too high. The maximum rate could be more than $45 for a one way trip. This is outrageous and gives no consideration to the hot lanes continuing past 370. Those living north of 370 could be hit with a $100 one way trip eventually. In addition, those working an hourly minimum wage job would be greatly impacted as although they can "chose" to use the general lanes at no charge they would be forced to sit in heavier traffic or spend 100% of their earnings on a commute. The maximum range should be reduced to under $2 per mile."

Comment from 10/21/2021 @ 8:06pm states:

> "No explanation of how these rates were set, except that the minimum toll supposedly is designed to cover costs of toll collection and monitoring. For both rates of how were they was calculated?; No Tolls. Highways are a public good and should be funded by the state thru its bonding authority. Get rid of the grifter Australian companies. They are just siphoning off funds from the system, with no benefits to drivers or taxpayers."

The following comment is from a respondent that provided their support for the recommended minimum and maximum toll rate ranges.

Comment from 10/22/2021 @ 6:30am states:

> "Rates should be charged based on vehicle cost/value. More expensive vehicles should pay higher rates with minimum and maximum rates."

Soft Rate Caps within the Minimum and Maximum Toll Rate Ranges

Comment Form Results: Of the 88 comment forms received, 72 respondents selected a check box noting whether they support (25%), are neutral (14%), or oppose (61%) the recommended soft rate caps within the minimum and maximum toll rate ranges.

All Comments: Of the 164 total comments received (all methods), 10 comments provided an opinion regarding the recommended soft rate caps. The most common themes that developed were general opposition to dynamic tolls, and that it is unclear how the soft rate cap will be implemented.

Comment from 10/21/2021 @ 8:06pm states:

> "How will the developer set rates between the minimum and the SRC? No explanation. How are they going to monitor the above "triggers"? Will they be placing cameras, videocams, and radar along each segment?"

Comment from 10/28/2021 @ 9:59am states:

> "Distracting signs that indicate costs per segment will undoubtedly cause accidents. I can imagine drivers will try to quickly change lanes when the threshold they have chosen to pay is exceeded or they see that the cost is what they are willing to pay. Perhaps the intent is to cause accidents to slow traffic so that the toll rates increase. What happens if there is an accident in the toll lane and the traffic moves as fast as the non-toll lane. Will drivers get reimbursed? This type of tolling is unnecessary! If you must charge, keep it simple!"

Comment from 10/28/2021 @ 11:26am states:

> "Although soft rate caps are supposed to be a good way to lessen the sticker shock of high toll rates, in fact, the demand factor climbs rapidly – it increases more than twice as fast than it decreases. It takes 25 minutes for the rate to max out, but it takes 50 minutes for the rate to settle all the way back down. This penalizes drivers for situations that have already cleared."

Comment from 10/26/2021 @ 12:34am states:

> "Even with minimums and maximums, I am opposed to variable toll rates. I do not believe they are fair. It punishes people who have to be on the road at certain times for something that is not always in their control. At the rates proposed, I would never use these lanes. I fear the lanes will not get enough use to pay for themselves, and they will take up space, keeping the non-HOT lanes just as packed, if not more packed as ever."

Comment from 10/22/2021 @ 10:21am states:

> "There should be HARD rate caps for tolls, not soft. I-66 inside the Beltway have had very high tolls close to $50 during rush hours. That's unaffordable for most commuters."

Annual Escalation Adjustments

Comment Form Results: Of the 88 comment forms received, 75 respondents selected a check box noting whether they support (11%), are neutral (13%), or oppose (76%) the recommended annual escalation adjustments.

All Comments: Of the 164 total comments received (all methods), 17 comments provided an opinion regarding the recommended annual escalation adjustments. The most common themes that developed were escalation should not be automatic, and escalation should be limited to the rate of inflation. Some examples of the reasons for opposing the recommended annual escalation adjustments included:

Comment from 9/30/2021 @ 4:54pm states:

> "There is no reason for toll rates to increase when the minimum wage does not increase annually. Again, this toll system is only to benefit the rich class of the community."

Comment from 10/1/2021 @ 12:12pm states:

> "Annual escalations simply give incentive for toll operators to "tease" consumers and elected officials with low initial tolls and then rapidly increase toll rates after construction is completed. Any rates should be set at fixed levels for several years, with public comment and oversight by elected officials before increases are approved. Otherwise we are just putting a veneer over the actual construction and operating costs to consumers and the public."

Comment from 10/24/2021 @ 12:53pm states:

> "In 2021 the CPI has risen 4 or 5% so far. Transurban's escalations start now, and each escalation is built on prior escalations. Even if we have deflation, the rates escalate by the other two factors. And Transurban is heartless and NOT interested in the good of the public, as their rapacious behavior in Australia has demonstrated."

The following comment is from a respondent that provides their support for the recommended annual escalation adjustments.

Comment from 10/22/2021 @ 10:18am states:

> "I support annual escalation adjustments, with a low percentage based cap."

Toll Discounts (Free passage for HOV 3+, buses and motorcycles)

Comment Form Results: Of the 88 comment forms received, 75 respondents selected a check box noting whether they support (56%), are neutral (8%), or oppose (36%) the recommended discounts.

All Comments: Of the 164 total comments received (all methods), 26 comments provided an opinion regarding the recommended toll discounts. The most common theme that developed was overall support for the recommended discounts, but concerned with which vehicle types and HOV classification should or should not receive a discount. Some examples include:

Comment from 10/1/2021 @ 12:31pm states:

> "If you discount these groups, the people that don't have this option would subsidize the discounts! and "Why in gods name would you support motorcycles"? one on the most dangerous forms of transportation which results in serious injury and death everyday. I would however support buses as a way to increase the use of mass transportation."

Comment from 10/4/2021 @ 8:45pm states:

> "I would like to see reduced passage for HOV 2+, and also free EZPass Plus devices rather than having to pay extra for the device that has the ability to turn on the HOV feature."

Comment from 10/22/2021 @ 10:21am states:

> "Most drivers on 495 and 270 are in single occupancy or double occupancy vehicles during rush hours. It's unrealistic to expect three or more people in such cases, which means drivers will have to pay high tolls in order to use the toll lanes. Discounts are definitely necessary, but it should be HOV-2 and not HOV-3."

Comment from 10/28/2021 @ 9:59am states:

> "There must be free passage for HOV3+ and buses. I do not think motorcycles should get a free ride. This is still encouraging single ridership. These vehicles tend to exceed speed limits and dangerously weave through traffic."

The following comments are from respondents that provided their support to the recommended discounts.

Comment from 10/22/2021 @ 2:22pm states:

> "I think the vehicles who meet this criteria shouldn't be charged any tolls at all."

Comment from 10/22/2021 @ 10:18am states:

> "I support free passage for public transit busses and privately run transit services, such as Greyhound, Trailways & Bolt and public transit contractors. Charter service busses should pay the same rates as similar freight haulers."

IV. Other Public Comments

Of the 164 total comments received (all methods) on the recommended toll rate ranges for Phase 1 South: American Legion Bridge I-270 to I-370, there were 78 comments (48%) submitted by the public on topics other than the specific recommended toll rate ranges elements. General themes from the "other" comments received are outlined below:

The most common theme was opposition to toll roads in general, and that they are economically unfair.

Comment from 10/5/2021 @ 1:30pm states:

> "No one should have to pay to use the roads. Money is tight as it is and to make anyone pay is a crime. There is no work around the roads like there is for the inter county

connector if you want to avoid a toll road. BAD idea charging...we pay our taxes to pay for the roads as it is. Not in favor of any toll road/lanes."

Comment from 10/21/2021 @ 9:42pm states:

"Everywhere we go it's a toll. I'm tired of paying tolls. We pay taxes already… tolls is just another form of taxes. People who own automobiles are paying through the nose."

Comment from 10/28/2021 @ 4:56pm states:

"Two weeks ago, on October 13, the Metropolitan Washington Council of Governments approved two resolutions that would "prioritize equity in transportation, housing and funding." Equity is a regional value, and it is violated by $50 toll lanes benefitting only the most affluent residents of the most affluent part of the region. MDOT has said that those driving on the toll lanes will have increased trip reliability and increased safety. That sets up a two-class system that people in Maryland don't want and don't buy into. On lanes right next to each other, only those who can afford the private lanes get a safer commute, with the general purpose lanes available to those who can't afford the toll lanes made less safe and even more congested than before.

We urge you to reconsider your role in supporting and legitimizing this unfortunate scheme and to increase transparency with the people of Maryland about this toll rate range setting exercise."

Comment from 10/24/2021 @ 12:53pm states:

"This process is a farce. Don't just say "We know the public wants this"! That isn't true. The public is very opposed to tolls in general, and outraged about tolls this high. They answer yes to congestion relief, but when you tell them about the actual proposed tolls they are vehemently opposed. And accurate polls depend on random sampling, which MDOT has not done. Lastly, the SDEIS shows that people in the general lanes are NOT helped by the toll road. They will sit in the same or worse evening congestion as if the toll road had not been built."

Comment from 10/21/2021 @ 11:11am states:

"Toll roads are regressive taxation that falls most heavily in those least able to pay. They detract from the goal of creating a just and equitable society. The only way I could possibly support this boondoggle is if tolls were applied only to vehicles owned by corporations, governments, and high income individuals."

Comment from 10/24/2021 @ 7:57pm states:

"The whole premise of the P3 is that wealthier people don't have to deal with traffic while most people have to sit in congestion. If the congestion is every relieved, the toll revenue disappears, along with the business model of the builder. Given that we need to

> cut greenhouse gas emissions, locking in auto travel for generations is a blunder of historic proportions."

Another theme is that respondents disagree with the involvement of a private company to manage the toll lanes.

Comment from 9/30/2021 @ 8:01pm states:

> "This whole P3 program is a bad deal and should be scrapped. Transurban should not get toll revenues from Marylanders. There is no way this deal is in Maryland's best interest."

Comment from 10/21/2021 @ 13:48pm states:

> "I am against Public/Private joint ventures on roads that were paid for by taxpayer's dollars. If private equity wishes to provide toll lanes then let them fund the entire project and not burden taxpayers. Also the pricing structure of Trans Urban tolls excludes use by low income motorists, there is a reason they are called "Lexus Lanes." They probably should be called Rolls Royce Lanes when you look at some of the prices on the signs."

Comment from 10/1/2021 @ 10:50am states:

> "Public road projects should be the job of state federal government. If you have to go to private investors you have failed at your job."

Another theme is that tolls will not fix congestion and that the State should consider other alternatives.

Comment from 9/30/2021 @ 4:56pm states:

> "We shouldn't be building lanes for cars. The only lanes that should be provided are train, bus and bike lanes. No more cars. This is not about commerce as most trucks will utilize free lanes no matter the congestion."

Comment from 9/30/2021 @ 2:02pm states:

> "Scrap the plan It is ridiculous. It will not work. It will be expensive to use. It s a waste of taxpayers money. Go back to the drawing board and figure out a way to bring the state into the 21st century. NYC and cities in Europe frown on cars. They have extensive public transportation that works! Monorail!! Young people do not want the burden of driving and neither does the planet. Thanks for your consideration."

Comment from 10/5/2021 @ 5:42pm states:

> "Proposed actions regarding changes to American Legion Bridge and I 270- I 370 are in reality two completely different projects and should not be linked. Widening access to and on The American Legion Bridge makes sense and should be pursued. Widening and adding to that portion of I 270 north to I 370 reflect deeply flawed logic and highly

> questioned reasons for action. I live adjacent to this portion of the highway and witness the traffic flow on a daily basis. Statements regarding the volume on this portion of the highway are highly questionable and seem to be opinions of those who have not actually witnessed traffic in this area. Simply stated there is very little congestion here. There are are four lanes which are joined by local lanes within a few minutes of passing the Beltway link which continue up to I 370. There is in fact heavy traffic but is is relatively free flowing until it reaches further north in the area of Germantown/ Clarksburg where the roadway narrows and becomes only two lanes. This is in fact where traffic regularly slows and jams and is where such construction is needed. Construction at the junction of I 270 and the Beltway up to I 370 has significantly greater negative impact on housing parklands and existing infrastructure than would be experienced to the north of Germantown. Why is such an aggressive effort underway to expand resources in this area and not further up county? Logic seems to suggest that there may be other reasons for this project not clearly stated in public statements. I request that construction efforts be abandoned on the southern end of I 270 and relocated to the north where they are more clearly needed and other proposals such as improved rapid rail be considered."

Comment from 10/22/2021 @ 2:22pm states:

> "Actually, employers should be incentivized to encourage/promote teleworking, thereby getting the cars off the road in the first place. There should also be major investments in public transportation - rail and bus. The monies being spent on this project should be redirected towards public transportation. Although I don't have a long commute, my husband commutes by car from Rockville to the other side of the Anacostia River, and these proposed toll lanes will be an enormous burden on him/us."

Comment from 10/22/2021 @ 7:41am states:

> "I oppose the toll plan. What people want is better public transit. We want a metrorail system that doesn't constantly break, and we want an express MARC train from Frederick to Union Station (or at least Silver Spring)."

V. Recommendations from the Public

The following comments, in addition to providing feedback, also included specific recommendations on various elements of the recommended toll rate ranges:

- Minimum and Maximum Tolls
  - "Subject: American Legion bridge toll KISS always KEEP IT SIMPLE SILLY charge .50 cents for every vehicle going south period. Everybody pays but two way trip is only .50 cents per round trip. Or better yet charge 1.00 for bridge from everyone and forgot the toll road fees altogether."
  - "Two-axle: $0.15 off peak; Two-axle: $0.20 peak"

- "The maximum toll rate is still too high. The maximum rate could be more than $45 for a one way trip. This is outrageous and gives no consideration to the hot lanes continuing past 370. Those living north of 370 could be hit with a $100 one way trip eventually. In addition, those working an hourly minimum wage job would be greatly impacted as although they can "chose" to use the general lanes at no charge they would be forced to sit in heavier traffic or spend 100% of their earnings on a commute. The maximum range should be reduced to under $2 per mile."
- "Rates should be charged based on vehicle cost/value. More expensive vehicles should pay higher rates with minimum and maximum rates."
- "There shouldn't be a maximum. There should be a minimum."

- Soft Rate Caps
  - "There should be HARD rate caps for tolls, not soft. I-66 inside the Beltway have had very high tolls close to $50 during rush hours. That's unaffordable for most commuters."
  - "Toll charges should be fixed and affordable to all users."
- Escalation
  - "Not to exceed 1% in any increase with possibility of no increase"
  - "Tie to CPI"
  - "I support annual escalation adjustments, with a low percentage based cap."
  - "The vendor should NOT get automatic escalations. Period."
  - "Escalation should not be considered until initial use statistics are processed."
- Discounts
  - "Residents of Montgomery and Fairfax Counties should be exempt from tolls."
  - "Should be hov2"
  - "Most drivers on 495 and 270 are in single occupancy or double occupancy "vehicles during rush hours. It's unrealistic to expect three or more people in such cases, which means drivers will have to pay high tolls in order to use the toll lanes. Discounts are definitely necessary, but it should be HOV-2 and not HOV-3."
  - "I would like to see reduced passage for HOV 2+, and also free EZPass Plus devices rather than having to pay extra for the device that has the ability to turn on the HOV feature."
  - "Also I would like you to use a method that I invented, whereby if a driver uses the HOV lane and pays for this, but there is an accident and the trip would have taken less or the same time on the regular lanes, then the driver gets a refund for the extra money paid to use the HOV lanes."

  - "But why give a discount to motorcycles? They are a hazard on any road, including highways. Eliminate the discount for motorcycles."
  - "HOV 2 Buses and Motorcycles free. Hybrids and electrics should not be exempt since they put the same wear and tare on the highway just like passenger cars."
  - "There must be free passage for HOV3+ and buses. I do not think motorcycles should get a free ride. This is still encouraging single ridership. These vehicles tend to exceed speed limits and dangerously weave through traffic."
- Tolls – General
  - "I agree that the ALB needs to be updated and perhaps widened some, but I think only one HOT lane each direction is necessary initially. If there is enough use, then an additional lane could be converted to HOT."
  - "Obviously a Bridge-Toll discount is acceptable for passenger-filled BUSES (not for empty buses). HOV3+ Vehicles can also get a Bridge-Toll reduction (vehicles must be camera and digitally monitored to assure compliance). I do NOT support Bridge-Toll discounts for Motorcycles or any other motorized vehicles using the Right-of-Way. All trucks should pay Bridge-Tolls based on standardized Truck weight limits and number of axles - monitored at Weigh-stations. Please charge a measurable Weigh-station regular highway Toll for heavy/multi-axle Trucks on I-495 and I-270 also."
  - "Just make it more affordable for all people. Don't punish those who make less (those jobs also support our local economy and help it go around) in the area and can't afford the tolls."
- Other
  - "Actually, employers should be incentivized to encourage/promote teleworking, thereby getting the cars off the road in the first place. There should also be major investments in public transportation - rail and bus. The monies being spent on this project should be redirected towards public transportation. Although I don't have a long commute, my husband commutes by car from Rockville to the other side of the Anacostia River, and these proposed toll lanes will be an enormous burden on him/us."
  - "Beltway expansion is a waste of money. Where is the Purple line???"
  - "We need two additional lanes in i270. I spent 3 hours on the road every day for 3 months from Rosalyn to Montgomery village. Hence, I moved to Howard County where traffic is not bad. If Montgomery County cares about its resident, they must support additional toll lanes."
  - "This entire toll lanes proposal deserves to die on the vine. Nobody wants it except Hogan, Transurban and Macquarie. P3s are problematical, especially for highways. Why isn't anyone listening to the folks concerned about the inequity,

the environmental harm, and the impracticality of this outdated proposal. Do transit instead."

- "HOV lanes are not proven to make commutes faster. I drive I-270 daily and there are always HOV riders that get in the lane just drive at the same speed as the rest of traffic. What is the point in that? Just to drive in the lane because you can? Encourage slower traffic to stay to the right and ENFORCE a minimum speed limit."

VI. Records Management

Public comments will be retained for further review and analysis as required. All public comments submitted during the public comment period, including public hearing transcripts from public hearings held during the first comment period (May 20 – August 12, 2021), are available for review online at mdta.maryland.gov/ALB270TollSetting. Please email ALB270TollSetting@mdta.maryland.gov, for further information.

Appendix A – Public Comment Form

COMMENT FORM

1. I wish to comment on the following elements of the recommended action (recommended toll rate ranges) as presented for review at mdta.maryland.gov/ALB270TollSetting/TollRateRangeSettingProcessandRecommendedAction* (check all that apply):

☐ Minimum and Maximum Toll Rate Ranges:
My comments as they relate to the above category: ☐ Support ☐ Oppose ☐ Neutral
Additional Comments:_____

☐ Soft Rate Caps within the Minimum and Maximum Toll Rate Ranges:
My comments as they relate to the above category: ☐ Support ☐ Oppose ☐ Neutral
Additional Comments:_____

☐ Annual Escalation Adjustments:
My comments as they relate to the above category: ☐ Support ☐ Oppose ☐ Neutral
Additional Comments:_____

☐ Toll Discounts (Free Passage for HOV 3+, buses and motorcycles):
My comments as they relate to the above category: ☐ Support ☐ Oppose ☐ Neutral
Additional Comments:_____

☐ Other Comments:

2. How often do you travel within the Phase 1 South limits (the American Legion Bridge to I-270, and I-270 to I-370)?
   - ☐ Three times or more per week
   - ☐ Weekends only
   - ☐ Occasionally (Less than three times per month)
   - ☐ Rarely (A few times a year)
   - ☐ Never

3. How do you pay tolls?
   - ☐ *E-ZPass®*
   - ☐ Pay-By-Plate (Registered Video, available at Maryland toll facilities only)
   - ☐ Video Tolling (Unregistered Video)
   - ☐ I don't use toll facilities

Optional: Please provide the following information:
Comments may be submitted anonymously; however, please consider providing your zip code as that will help MDTA identify locations where communities may have similar concerns.

Name: _____

E-mail Address: _____

Community/Organization (if applicable): _____

Street Address: _____

City: _____ State: _____ Zip: _____

Thank you for your comments! Comments may be submitted in a variety of ways during the second public-comment period from **September 30, 2021, through October 28, 2021, at 5:00 PM** in order to be included in the official record reviewed by the MDTA Board. Comments submitted on this form will be part of the official record. **Comments may be submitted by completing this comment form electronically at mdta.maryland.gov/ALB270TollSetting, sending this completed comment form via e-mail to ALB270TollSetting@mdta.maryland.gov, or by mailing this completed comment form via U.S. Mail to:**

Phase 1 South: American Legion Bridge I-270 to I-370
Toll Rate Range Setting Public Comment
Maryland Transportation Authority
2310 Broening Highway
Baltimore, MD 21224

The MDTA held an in-person public hearing on July 12 and a call-in public hearing on July 14 as part of the toll rate range setting process' first public-comment period for proposed High-Occupancy Toll (HOT) lanes within Phase 1 South: American Legion Bridge I-270 to I-370. The hearings provided an opportunity to comment on the toll rate range proposal for the official record through verbal public or one-on-one testimony or through written comment. ALL COMMENTS received, whether at the hearing or through other methods, will be given EQUAL CONSIDERATION.

**If you are unable to access the materials online, or if you require special accommodations under the Americans with Disabilities Act or require language translation services (free of charge), please contact the MDTA's Title VI Officer at mdtaeeo@mdta.maryland.gov or 410-537-6720.*

Appendix B – Comments by Zip Code

ZIP / Postal Code	Number of Comments	Mailing City	County	State
21224	1	Baltimore	Baltimore City	MD
20814	1	Bethesda	Montgomery	MD
20817	4	Bethesda	Montgomery	MD
20866	2	Burtonsville	Montgomery	MD
20871	1	Clarksburg	Montgomery	MD
21701	3	Frederick	Frederick	MD
20878	2	Gaithersburg	Montgomery	MD
20879	1	Gaithersburg	Montgomery	MD
20882	1	Gaithersburg	Montgomery	MD
20874	1	Germantown	Montgomery	MD
20770	1	Greenbelt	Prince George's	MD
20781	1	Hyattsville	Prince George's	MD
20877	1	Montgomery Village	Montgomery	MD
21774	1	New Market	Frederick	MD
20852	4	North Bethesda	Montgomery	MD
20832	1	Olney	Montgomery	MD
20738	1	Riverdale	Prince George's	MD
20850	8	Rockville	Montgomery	MD
20853	1	Rockville	Montgomery	MD
20854	2	Rockville	Montgomery	MD
20901	5	Silver Spring	Montgomery	MD
20902	2	Silver Spring	Montgomery	MD
20906	1	Silver Spring	Montgomery	MD
20910	1	Silver Spring	Montgomery	MD
21863	1	Snow Hill	Worcester	MD
20912	1	Takoma Park	Montgomery	MD
21157	1	Westminster	Carroll	MD
21163	1	Woodstock	Howard	MD

Total Respondents Providing Zip Codes = 51

Appendix C – Public Notice

Public outreach included the use of press releases; gov.delivery email; text bulletins to subscribers; the project webpage; social media posts to Facebook, Twitter and Instagram; and e-blasts to elected officials and other stakeholders. Outreach included contacting targeted environmental justice (low-income and minority) areas via email.

Appendix D – Comment Excerpts by Topic

There were a number of cases where the commentor provided specific recommendations either about elements of the recommended toll rate ranges or the overall project in general. Since the comments are instructive in the decision-making process, they have been extracted into this Appendix to make it easier for the Board Members to review. Comments received as part of the toll rate range setting process for Phase 1 South: American Legion Bridge I-270 to I-370 have been shared with the MDOT SHA project team as appropriate. Below, they are broken down by topic area.

- Transurban / P3
    - "Whatever rate schedule you choose the public needs to know how much profit the private enterprise in making and we need to have the asset returned to us (i.e., no toll) after it has been paid for. This should not become a profit center for some foreign fund."
    - "The tolls are insanely excessive and not affordable to just about everyone. That these profits will go to a foreign private business and its shareholders at the expense of Maryland residents is an abomination. There needs to be a fiscal analysis that considers other funding approaches that can be viable with the proper design."
    - "No explanation of how these rates were set, except that the minimum toll supposedly is designed to cover costs of toll collection and monitoring. For both rates of how were they was calculated?; No Tolls. Highways are a public good and should be funded by the state thru its bonding authority. Get rid of the grifter Australian companies. They are just siphoning off funds from the system, with no benefits to drivers or taxpayers."
    - "In 2021 the CPI has risen 4 or 5% so far. Transurban's escalations start now, and each escalation is built on prior escalations. Even if we have deflation, the rates escalate by the other two factors. And Transurban is heartless and NOT interested in the good of the public, as their rapacious behavior in Australia has demonstrated. Have you done your homework? Do you know who you are dealing with? Have you read the Australian newspaper and magazine articles deriding their unfettered profiteering? Please don't just listen to Gov. Hogan. Do your own research and do what is right for the citizens of Maryland and the whole metropolitan region. It is sad that Virginia allowed Transurban in - but please don't allow them in Maryland. Don't allow them to encircle Washington DC. IF a toll road HAS to be built (which I totally disagree with) let it be funded with state and federal bonds so that the "profits" will come back to US to support the needs of Marylanders."

- "It's not acceptable for a consortium that includes a for-profit company with a history of promoting large-scale boondoggle projects to get a free hand determining how much revenue it can extract from the public."
- "Definitely oppose the fact that non-USA company(ies)will be awarded the contract(s) if the project(s)get approved. I use the MD ICC toll lanes frequently. Why are you trying to put thru "Lexus Lanes" which would be extremely/TOO expensive for the normal DMV commuter?"
- "This whole P3 program is a bad deal and should be scrapped. Transurban should not get toll revenues from Marylanders. There is no way this deal is in Maryland's best interest."
- "I am against Public/Private joint ventures on roads that were paid for by taxpayer's dollars. If private equity wishes to provide toll lanes then let them fund the entire project and not burden taxpayers. Also the pricing structure of Trans Urban tolls excludes use by low income motorists, there is a reason they are called "Lexus Lanes". They probably should be called Rolls Royce Lanes when you look at some of the prices on the signs."
- "Every day there are articles about the high tolls and woes Transurban is causing in Australia. Look at these articles as a cautionary tale that should send a strong warning sign that the same will occur here, to the extreme detriment of Maryland and the transportation system serving our nation's capital. 1. NRMA calls for toll price transparency (riverineherald.com.au) 2. 'Cost outweighs benefit': Trucking giant's toll message to drivers (theage.com.au) 3. WestConnex: the toll road that ate Sydney (smh.com.au) Under the interagency agreement, it seems that MDTA designates MDOT SHA as its agent. Then the contract stipulates: "No Party shall interfere with or impede any other Party's performance of its obligations under this Agreement or any P3 Agreement." In other words, following execution of the tolling agreement, MDTA will have no real say in future rate increases and escalations, with its role confined to rubberstamping MDOT SHA requests. And, all individuals in the parties are indemnified, so no individual who participated in this agreement can be held accountable. Again, it is toll road users and Maryland residents who will pay the price for the errors that are virtually certain to occur."
- "I hope each member of MDTA will research the project and Transurban and then vote his or her conscious. Please do not be Gov. Hogan's puppets. That is not your purpose."

- Tolls are Inequitable
  - "Toll rates only benefit those who have money to afford them. Thus, the lower working class will be affected and taxed the most."
  - "I can't afford to pay tolls."

- "Rates should be charged based on vehicle cost/value. More expensive vehicles should pay higher rates with minimum and maximum rates."
- "The toll will be outrageously high if it's anything like similar tolls around the region. It is unrealistic for most ordinary drivers to be able to afford."
- "According to MDTA documentation, the median household income of those invited VOT study respondents who would take express lanes for work trips is $146,582. The median income of those who would take express lanes for non-work trips is $134,997. Both are far above the $108, 820 median household income in Montgomery County. MDTA's determination of the Value of Time shows the median and mean toll amounts that study participants would be willing to pay for work trips: Mean = $23.62; Median = $19.68. If MDOT's targeted drivers won't pay more than $23.62, they can only travel 6 miles per trip at MDTA's projected maximum rate of $4+/mile when the toll lanes open in 2026. That means MDOT and MDTA already know that the project will not meet its revenue target. They already know the current toll-setting proposal is nothing more than a placeholder for the higher tolls and State subsidies necessary to provide the promised revenue/profit to the contractor over the next 50 years. This is a total abdication of MDOT's and MDTA's responsibilities to the public."
- "In addition, we believe that this toll scheme is even more inequitable and costly for would- be toll lane users than what was proposed during the first toll rate range setting. Text in the August 26, 2021 "First Amended and Restated I-495 & I-270 Public-Private Partnership Program (P3) Interagency Agreement (IAA) between Maryland Department of Transportation (MDOT) State Highway Administration (SHA), MDOT and MDTA" reads: "If there is projected to be a Rate Covenant Shortfall (meaning the P3 Program revenues (including video surcharges, late payment fees, etc.) expected to be collected will be insufficient to cover the payments due to all Section Developers from the Operating Reserve Account and all principal and interest due on all MDTA Notes) in six or more consecutive months during the next 24 months, MDTA shall either (i) make administrative or operational changes that will eliminate the Rate Covenant Shortfall or (ii) if there are not administrative or operational changes that will eliminate the Rate Covenant Shortfall, then MDTA shall notify MDOT. Following such notification MDOT shall either (a) instruct MDTA to take no further action on the basis that MDOT elects to make supplemental payments at the time of the projected shortfall so that, if such supplemental payments were included as additional P3 Program Revenues in the calculation of the Rate Covenant calculation then no shortfall would exist or (b) instruct MDTA staff to present to the MDTA Board a toll proposal to commence the toll rate setting process intended to fix, revise, charge, and collect the tolls, fees or other charges in the P3 Program so that the Rate Covenant Shortfall is eliminated. Upon the

conclusion of the toll setting process the MDTA Board may approve, adjust or reject the toll proposal." This appears to mean that Maryland taxpayers and especially toll road users or would-be users will be penalized in the event MDOT's traffic projections are incorrect and for other agency errors. It appears to mean quality of service (in the form of "administrative or operational changes") provided by MDTA, a state agency, can be decreased in the interest of paying the developer (Australian toll lane giant Transurban) its promised profit, which it is owed even if the toll lanes are not well utilized. This scheme and contract appear strongly biased in favor of the private sector at the expense of Maryland residents."

- "First and foremost, I don't want to see Maryland turn into another Virginia. Moderate toll rates are acceptable as a road use tax but when they rise to the point that middle and lower income families can't afford it, this is no longer acceptable"
- "Just make it more affordable for all people. Don't punish those who make less (those jobs also support our local economy and help it go around) in the area and can't afford the tolls."
- "Tolls will prevent local low and moderate income from easily running errands."
- "I oppose toll roads of any kind because only rich people will be able to use them and they will not alleviate traffic. I can't even believe this is being considered as a solution to the gridlock in this region."
- "Two weeks ago, on October 13, the Metropolitan Washington Council of Governments approved two resolutions that would "prioritize equity in transportation, housing and funding." Equity is a regional value, and it is violated by $50 toll lanes benefitting only the most affluent residents of the most affluent part of the region. MDOT has said that those driving on the toll lanes will have increased trip reliability and increased safety. That sets up a two-class system that people in Maryland don't want and don't buy into. On lanes right next to each other, only those who can afford the private lanes get a safer commute, with the general purpose lanes available to those who can't afford the toll lanes made less safe and even more congested than before."
- "Toll roads are regressive taxation that falls most heavily in those least able to pay. They detract from the goal of creating a just and equitable society."
- "The only way I could possibly support this boondoggle is if tolls were applied only to vehicles owned by corporations, governments, and high income individuals."

- Notification / Education of Dynamic Tolls
  - "Dynamic pricing is supposed to decrease congestion in the HOT (toll and high occupancy toll-exempt) lanes. But how would any driver know, in advance, how

much toll they are going to have to pay for a given trip? They have to guess and gamble, which is an imprecise, haphazard way to manage demand for the HOT lanes."

- Toll Calculations
  - "Although soft rate caps are supposed to be a good way to lessen the sticker shock of high toll rates, in fact, the demand factor climbs rapidly – it increases more than twice as fast than it decreases. It takes 25 minutes for the rate to max out, but it takes 50 minutes for the rate to settle all the way back down. This penalizes drivers for situations that have already cleared."
  - "The new Recommended Preferred Alternative, i.e., "Phase 1 South: American Legion Bridge I-270 to I-370," will include a multi-use trail on the new American Legion Bridge (ALB) across the Potomac River. The Recommended Action proposal may clarify whether and how future users of the multi-use trail on the new ALB would pay tolls."
- Minimum and Maximum Tolls
  - "I think it should be affordable for all to use the lanes! Many industries don't pay high enough salaries for those who live in the area or may need to take the interstate so make it affordable so more people can use it! "
  - "Two-axle: $0.15 off peak; Two-axle: $0.20 peak"
  - "Disagree with higher rates based on amount of traffic within a toll segment"
  - "Tolls are too much for average person to afford. It's going to push traffic on to side streets"
  - "The maximum toll rate is still too high. The maximum rate could be more than $45 for a one way trip. This is outrageous and gives no consideration to the hot lanes continuing past 370. Those living north of 370 could be hit with a $100 one way trip eventually. In addition, those working an hourly minimum wage job would be greatly impacted as although they can "chose" to use the general lanes at no charge they would be forced to sit in heavier traffic or spend 100% of their earnings on a commute. The maximum range should be reduced to under $2 per mile."
  - "Totally oppose the proposed project & rates."
  - "Would never use the toll lanes since they will be so expensive."
  - "In general, the tolls are too high. In particular: 1. The Value of Time study results are flawed and are biased towards higher income drivers. 2. Tolling has only one explicitly stated goal – to maximize revenue, not to relieve congestion or help the environment. 3. Driving in the free lines must be badly congested enough to push drivers into paying to use the HOT lanes. Flaws in the Value of time study completely undermine the results. The sample is biased towards higher income and doesn't represent the resident or driving population. The entire P3 toll model

is explicitly designed to maximize revenue. Further, the model does not describe what happens in the free lanes when the HOT lanes are managed to maintain the desirable traffic and volumes that maximize revenue. The fundamental principle of the HOT lanes is that free lanes have to be very congested, because only then will drivers be pushed into paying high tolls for a privileged driving experience."

- "The tolls are too high"
- "There shouldn't be a maximum. There should be a minimum."
- "Estimating toll rate ranges without describing the improvements that those tolls are intended to finance is not a sound approach to requesting public comment. If tolls are intended to pay for improvements, the question is: what are the improvements? The guide provided with the request for comments describes reduced transit times."
- "I strongly OPPOSE an I-495/270 Toll Road in any form, especially the very 'tinny' and inadequately studied so-called 'Public/Private Partnership' that Governor and MDOT have rammed through by hook and by crook thus far. Thus, I do NOT agree to proposed Minimum & Maximum Toll Rate Ranges for any roadway-only express lanes or regular lanes."
- "I certainly support there being minimum and maximum rates, but I do not support the rate ranges proposed. The maximums are still set way too high for the distances they would apply to."
- "Some in the public may know the maximum planned rates per mile as $3.76—and $22.58 for most tractor trailers. Less well known is the 2.1% annual escalation (from 2021) plus inflation. The public should know the estimated hours and times per week when the actual toll will be at least 50% of the maximum toll."
- "I am outraged that despite huge public opposition to $4/mile peak tolls in 2026 and the huge built-in escalation factors in the first public comments period, the MDTA changed nothing. The 3 cents you took off the rate for driving on the toll road when there is no congestion means nothing. Who would drive on it when there is no congestion? So if you get zero public comments in this round, it will be because you have shown the public that you have absolutely no regard for their input."
- "The toll road is not a solution for a transportation problem. Tolls are unfair. MDOT has never provided an analysis of the benefit of the ICC. After 10 years, has the ICC paid for itself? Has it really improved I495 travel? Does any of the ICC money ever go to transportation? People don't use the ICC as much as predicted because it doesn't really save any time unless I495 is at a standstill. Saving 10 minutes of driving time doesn't outweigh the costs. The individuals who could not afford to live in the area near the Beltway chose to move to upcounty Montgomery County or Frederick or beyond. Why does MDOT believe

these folks will pay a daily outrageous toll to improve their commute by 5-10 minutes? Meanwhile, the individuals who live in the immediate vicinity of Phase 1 and use the road multiple times each day for errands to go perhaps 1 segment are penalized with outrageous tolls."

- "I find it interesting that a minimum toll is necessary to recover administrative costs! If you didn't propose such a complicated toll system, you wouldn't need to charge .17/mile."
- "Subject: American Legion bridge toll KISS always KEEP IT SIMPLE SILLY charge .50 cents for every vehicle going south period. Everybody pays but two way trip is only .50 cents per round trip. Or better yet charge 1.00 for bridge from everyone and forgot the toll road fees altogether."

- Rate Caps
  - "There should be HARD rate caps for tolls, not soft. I-66 inside the Beltway have had very high tolls close to $50 during rush hours. That's unaffordable for most commuters."
  - "How will the developer set rates between the minimum and the SRC? No explanation"
  - "How are they going to monitor the above "triggers"? Will they be placing cameras, videocams, and radar along each segment?"
  - "I do not support 'soft rate Caps' or any other easily mismanaged tolling devices. Only normal daytime, Rush Hours, and night-time toll rates for a Potomac Bridge crossing are acceptable."
  - "Toll charges should be fixed and affordable to all users."
  - "Even with minimums and maximums, I am opposed to variable toll rates. I do not believe they are fair. It punishes people who have to be on the road at certain times for something that is not always in their control. At the rates proposed, I would never use these lanes. I fear the lanes will not get enough use to pay for themselves, and they will take up space, keeping the non-HOT lanes just as packed, if not more packed as ever."
  - "I oppose the whole toll road. If it is approved, then heaven help us. But it sounds like the soft rate cap is a measure that might help restrain the tolls."
  - "Distracting signs that indicate costs per segment will undoubtedly cause accidents. I can imagine drivers will try to quickly change lanes when the threshold they have chosen to pay is exceeded or they see that the cost is what they are willing to pay. Perhaps the intent is to cause accidents to slow traffic so that the toll rates increase. What happens if there is an accident in the toll lane and the traffic moves as fast as the non-toll lane. Will drivers get reimbursed? This type of tolling is unnecessary! If you must charge, keep it simple!"

- Escalation
  - "Tie to CPI"
  - "We need no increase at this time the public is getting increased in every other area we simply can't afford a increase."
  - "Not to exceed 1% in any increase with possibility of no increase"
  - "There is no reason for toll rates to increase when the minimum wage does not increase annually. Again, this toll system is only to benefit the rich class of the community."
  - "Escalation is based only on economic factors, and toll rates are designed to maximize revenue. So, the use of escalation adjustments does not benefit drivers. It only benefits the concessionaire. In fact, the 2.1% increase in the max rate and soft cap will double those figures in 34 years. Also, the C in CPI stands for consumer. But there is non-consumer traffic (e.g., commercial vehicles) in the traffic mix. Is escalation even justified?"
  - "I support annual escalation adjustments, with a low percentage based cap."
  - "Except for the min and max rates, for which "escalation" (increase) in tolls is based only on inflation, all other rates increase based on not just inflation but other vague factors that have not been explained."
  - "The vendor should NOT get automatic escalations. Period."
  - "Annual escalations simply give incentive for toll operators to "tease" consumers and elected officials with low initial tolls and then rapidly increase toll rates after construction is completed. Any rates should be set at fixed levels for several years, with public comment and oversight by elected officials before increases are approved. Otherwise we are just putting a veneer over the actual construction and operating costs to consumers and the public."
  - "I don't see significant improvement(s) for there to be escalations. We already have significant increases in gas, food, etc."
  - "Salaries and pensions don't keep up with inflation. There is no reason to increase toll rates! You seem to have structured the escalation so that a private company will make more money off private citizens. I know Mr. Hogan promised money from the toll lanes will go into transportation, but this is a false promise that is not backed by any regulation. Don't escalate tolls unless MDOT DELIVERS transportation."
- Discounts
  - "Residents of Montgomery and Fairfax Counties should be exempt from tolls."
  - "As the plan is to replace the existing HOV lanes on I-270, the free passage should also extend to those with electric vehicles (with state permit) as they are currently authorized to use the HOV lanes regardless of occupancy. Otherwise,

this project effectively removes the only HOV lanes in Maryland other than US 50"

- "Most drivers on 495 and 270 are in single occupancy or double occupancy "vehicles during rush hours. It's unrealistic to expect three or more people in such cases, which means drivers will have to pay high tolls in order to use the toll lanes. Discounts are definitely necessary, but it should be HOV-2 and not HOV-3."
- "It will be helpful to explain why free toll applies to motorcycles."
- "Same as above but this is ridiculous because this policy will likely increase the number of commuters using motorcycles that have a high incidence of severe accidents on dangerous high speed roads."
- "Supposedly, special treatment for certain vehicles is a good thing, but how will HOV 3+ work? Does Maryland even have HOV 3+ lanes? Does Maryland have an EZ-Pass approach for HOV 3+? Wouldn't HOV 3+ lanes and infrastructure including new EZ-Pass transponders entail additional costs to Maryland taxpayers and drivers?"
- "I would like to see reduced passage for HOV 2+, and also free EZPass Plus devices rather than having to pay extra for the device that has the ability to turn on the HOV feature."
- "Also I would like you to use a method that I invented, whereby if a driver uses the HOV lane and pays for this, but there is an accident and the trip would have taken less or the same time on the regular lanes, then the driver gets a refund for the extra money paid to use the HOV lanes."
- "I support free passage for public transit busses and privately run transit services, such as Greyhound, Trailways & Bolt and public transit contractors. Charter service busses should pay the same rates as similar freight haulers.
- "No discount. A car is a car."
- "But why give a discount to motorcycles? They are a hazard on any road, including highways. Eliminate the discount for motorcycles."
- "Disagree with motorcycles being free (makes no sense). But the only upside of this disastrous scheme would be if it helped buses."
- "Obviously a Bridge-Toll discount is acceptable for passenger-filled BUSES (not for empty buses). HOV3+ Vehicles can also get a Bridge-Toll reduction (vehicles must be camera and digitally monitored to assure compliance). I do NOT support Bridge-Toll discounts for Motorcycles or any other motorized vehicles using the Right-of-Way. All trucks should pay Bridge-Tolls based on standardized Truck weight limits and number of axles - monitored at Weigh-stations. Please charge a measurable Weigh-station regular highway Toll for heavy/multi-axle Trucks on I-495 and I-270 also."

- "HOV 2 Buses and Motorcycles free. Hybrids and electrics should not be exempt since they put the same wear and tear on the highway just like passenger cars."
- "Tolls on roads, lanes, bridges, and tunnels are economically regressive for low income people. There should be waivers, exemptions, and discounts for low income users. Tolling databases can be linked to other databases that include low income people, such as EITC, school lunches, Sec. 8 housing vouchers, SNAP, LITC, TANF, WIC, etc."
- "If you discount these groups, the people that don't have this option would subsidize the discounts and "Why in god's name would you support motorcycles"? one on the most dangerous forms of transportation which results in serious injury and death everyday. I would however support buses as a way to increase the use of mass transportation"
- "We already have a serious problem with speeding and stunting motorcycles on the beltway. A free ride on a toll lane would just give some crotch rocket jockies a place to showcase their insanity and disregard for the law."
- "There must be free passage for HOV3+ and buses. I do not think motorcycles should get a free ride. This is still encouraging single ridership. These vehicles tend to exceed speed limits and dangerously weave through traffic."

- Tolls – General
  - "I'm opposed to the entire concept of tolls on the interstate highways, as well as adjustable toll lanes. I think they are very undemocratic and place additional burdens on the substantial number of people who live among us who are struggling financially!"
  - "Faulty data, public roads need to remain toll free."
  - "Everywhere we go it's a toll. I'm tired of paying tolls. We pay taxes already… tolls is just another form of taxes. People who own automobiles are paying through the nose."
  - "Most people commuting to work these days are those who provide direct services and largely impacted by the COVID 19 pandemic and layoffs, unlike federal and technology workers who can work from home. There should be no tolls or added lanes to I495 as the state has a record of no transparency about road planning efforts and most MD citizens can ill afford tolls when there are so many other economic and social needs that are more urgent. Plus a recent study suggests the time commuters will save by paying tolls is less than MD Transportation Authority reports."
  - "Building the toll lanes won't solve the traffic jam problem, but instead it will increase jam because very few people can afford the toll to use the toll lanes. It is also too costly. The taxpayers eventually have to pay the bill."

- "Within the scope of the toll setting process, the worst part is the sole reliance on maximizing revenue as the objective of tolling. Even given that, the flaws in sampling and the reliance on economic factors (except for the desired traffic and speed conditions for the privileged lanes) result in a tolling approach that is incomplete. There is no relationship to actual project costs. There is no relationship to overall traffic management and congestion. And, although this may be out of scope, there is no indication of how the generated revenues will be used. Although the "minimum toll rate is intended to cover toll capture, processing and collection costs," there is apparently no such cost analysis available to the public. MDTA should have used its expertise to examine the assignment it was given. It should have replied to MDOT with issues and criteria for a more responsible toll setting approach. Instead, MDTA only seems to have developed its toll setting approach based on the direction it was given – maximize revenue."
- "No toll lanes should be built. The project would enclose our Capitol with traffic lanes controlled by a potentially hostile entity"
- "MDTA's toll rate-setting process and calculations did not take into account and "fully load" the costs to the environment, global warming, climate change, and nearby communities. These costs can be estimated and should be taken into account. If they were, the tolls would be much higher than presently estimated, and would be prohibitive. How can you ignore these critical costs?"
- "No one should have to pay to use the roads. Money is tight as it is and to make anyone pay is a crime. There is no work around the roads like there is for the inter county connector if you want to avoid a toll road. BAD idea charging...we pay our taxes to pay for the roads as it is. Not in favor of any toll road/lanes."
- "I agree that the ALB needs to be updated and perhaps widened some, but I think only one HOT lane each direction is necessary initially. If there is enough use, then an additional lane could be converted to HOT."
- "Another big concern I have is how sensitive the toll detectors will be and whether there is a chance that those traveling in adjacent non-HOT lanes are at risk of accidental charges to their EZ-PASS accounts."
- "This process is a farce. Don't just say "We know the public wants this"! That isn't true. The public is very opposed to tolls in general and outraged about tolls this high. They answer yes to congestion relief, but when you tell them about the actual proposed tolls they are vehemently opposed. And accurate polls depend on random sampling, which MDOT has not done. Lastly, the SDEIS shows that people in the general lanes are NOT helped by the toll road. They will sit in the same or worse evening congestion as if the toll road had not been built."
- "But the toll road itself will create congestion by usurping highway space and leaving LESS free lanes, despite Gov. Hogan's promise that all free lanes remain

free. That is not true. I-270 between I-370 and Democracy Blvd. does not have 8 total lanes on each side in many places, thanks to MDOT's wonderful "Innovative Congestion Management" project which is nearly completed. There is essentially no congestion on that part of I-270 now. But taking away 4 lanes to make a toll road and leaving just 5 free lanes on each side will CREATE congestion. You will undo the $100 million project that is just being completed, and that WORKS! Don't take it away from us!!! Focus on improving congestion on I-270 NORTH of I-370! That is where there is a need. And do it NOT by expanding the highway, which just attracts more cars to the road, but by increasing transit options, which gets cars OFF the road. People are begging for transit that is efficient and affordable. Increasing MARC service with a third track would be a large long-term investment which would actually BENEFIT our grandchildren. This toll road project will just make congestion worse and be a chain around the necks of our children, grandchildren, great-grandchildren and more."

  - "We shouldn't be building lanes for cars. The only lanes that should be provided are train, bus and bike lanes. No more cars. This is not about commerce as most trucks will utilize free lanes no matter the congestion."

- Additional Studies and Information
  - "Beltway expansion is a waste of money. Where is the Purple line???"
  - "Toll lanes [hot rich people company lanes] is a WAIST OF MONEY, RESOURCES....AND TIME! Reversible rush hour lanes .... ARE JUST THE OPPOSITE!"
  - "We need two additional lanes in i270. I spent 3 hours on the road every day for 3 months from Rosalyn to Montgomery village. Hence, I moved to Howard County where traffic is not bad. If Montgomery County cares about its resident, they must support additional toll lanes."
  - "They will pull traffic into neighborhoods because of prohibitively expensive tools."
  - "Scrap the plan. It is ridiculous. It will not work. It will be expensive to use. It is a waste of taxpayers money. Go back to the drawing board and figure out a way to bring the state into the 21st century. NYC and cities in Europe frown on cars. They have extensive public transportation that works! Monorail!! Young people do not want the burden of driving and neither does the planet. Thanks for your consideration."
  - "HOV lanes are not proven to make commutes faster. I drive I-270 daily and there are always HOV riders that get in the lane just drive at the same speed as the rest of traffic. What is the point in that? Just to drive in the lane because you can? Encourage slower traffic to stay to the right and ENFORCE a minimum speed limit."

- "The toll road concept is a rip-off. The traffic study shows that the improvement in traffic flow due to the toll roads is only a marginal improvement in speed. The toll road does not help in any significant way and the toll road should be abandoned and the state should go back to the outer loop, that will work. The people in Potomac fought the outer loop and the governor caved into them versus helping the typical MD resident"
- "I oppose the toll plan. What people want is better public transit. We want a Metrorail system that doesn't constantly break, and we want an express MARC train from Frederick to Union Station (or at least Silver Spring)."
- "The toll will not fix things and it amounts to a tax on hard-working Marylanders who can barely afford to live especially in Montgomery County but also anywhere along the I-270 corridor within reasonable driving distance to their jobs in DC. Invest in better public transportation instead!!"
- "Proposed actions regarding changes to American Legion Bridge and I 270- I 370 are in reality two completely different projects and should not be linked. Widening access to and on The American Legion Bridge makes sense and should be pursued. Widening and adding to that portion of I 270 north to I 370 reflect deeply flawed logic and highly questioned reasons for action. I live adjacent to this portion of the highway and witness the traffic flow on a daily basis. Statements regarding the volume on this portion of the highway are highly questionable and seem to be opinions of those who have not actually witnessed traffic in this area. Simply stated there is very little congestion here. There are four lanes which are joined by local lanes within a few minutes of passing the Beltway link which continue up to I 370. There is in fact heavy traffic but is relatively free flowing until it reaches further north in the area of Germantown/ Clarksburg where the roadway narrows and becomes only two lanes. This is in fact where traffic regularly slows and jams and is where such construction is needed. Construction at the junction of I 270 and the Beltway up to I 370 has significantly greater negative impact on housing parklands and existing infrastructure than would be experienced to the north of Germantown. Why is such an aggressive effort underway to expand resources in this area and not further up county? Logic seems to suggest that there may be other reasons for this project not clearly stated in public statements. I request that construction efforts be abandoned on the southern end of I 270 and relocated to the north where they are more clearly needed and other proposals such as improved rapid rail be considered."
- "Before commenting on proposed tolls, I must make clear that, in light of the worsening climate crisis facing Maryland, the U.S. and the world, the massive toll lanes project is terrible policy because it will hasten the planet's move way past CO2 limits that must be observed to avoid ever greater tragedies befalling an even

larger share of the world's population. Those tragedies are summarized in an October 21 AP story: "Worsening conflict within and between nations. Increased dislocation and migration as people flee climate-fueled instability. Heightened military tension and uncertainty. Financial hazards." The story covers climate reports just released by the departments of Homeland Security and Defense, the National Security Council and the director of national intelligence. https://www.nytimes.com/2021/10/21/climate/climate-change-national-security.html The travel time between two points on the affected highways pales to insignificance when compared with the climate impacts this project will worsen."

- "The truck toll ensures that most big trucks will intensify congestion on the "free" lanes. Other than trucks with emergency situations, the only trucks likely using the toll lanes will be those where the driver has some agreement with the customer that an optional toll like this would be reimbursed. Since trucks do far more damage to highways than cars, a higher rate makes sense. But here, where Transurban's private, tolled lanes parallel the state's non-tolled lanes, the result just described is less than optimal. I understand the proposed car/truck ratio is similar to what is in place on the ICC, but that is a completely different situation since there are no "non-tolled" lanes for truckers to escape to, unless (for many trips) they want to add considerable mileage to their trip."

- Other
  - "Actually, employers should be incentivized to encourage/promote teleworking, thereby getting the cars off the road in the first place. There should also be major investments in public transportation - rail and bus. The monies being spent on this project should be redirected towards public transportation. Although I don't have a long commute, my husband commutes by car from Rockville to the other side of the Anacostia River, and these proposed toll lanes will be an enormous burden on him/us."
  - "I oppose this project and the state's attempts to ignore what citizens want. As a student of policy studies, this project is designed to prepare the Governor for a Presidential election rather than help MD citizens obtain safer, more environmentally friendly to commute."
  - "Houses will be taken, and daily life will be greatly interrupted. Also community members have not adequately been interviewed and considered."
  - "This entire toll lanes proposal deserves to die on the vine. Nobody wants it except Hogan, Transurban and Macquarie. P3s are problematical, especially for highways. Why isn't anyone listening to the folks concerned about the inequity, the environmental harm, and the impracticality of this outdated proposal. Do transit instead."

- "When will the P3-stupified current leadership of State of Maryland, especially MDOT learn from real-world experience with the Purple Line P3 debacle, and END this totally unstable, environmentally destructive, and clearly not at all 'free' approach to public ROW highway and 'Transit' construction and operations? Will our State Government ever Learn?"
- "Toll lanes should be decided by the voters after full financial disclosure. They should be put on the ballot bearing in mind most of the taxpayers will never see the toll lanes. I have never been on the "Inter County Connector) but I know some of my taxes were used to pay for its construction."
- "It is disappointing that this 28-day toll rate range setting comment period was scheduled to overlap with two other comment periods on the I-495 and I-270 toll lane project (one month for Section 106 and 45 days for the Supplemental Draft Environmental Impact Statement). It is also disappointing that this toll rate range setting comment period has no in-person or virtual public hearing during the comment period. These timing decisions, lack of public hearings, and minimal advertising of the toll rate range setting comment period prevent the public from participating meaningfully in the process."
- "In addition to the shortfall payments being a potential trigger for a new toll rate range setting process, the interagency agreement explicitly requires that MDTA not make any changes that could reduce P3 program revenues, saying: "MDTA agrees that it shall not (unless compelled to by law), reduce the civil penalty for late payment of tolls, citation fees, or enforcement fees applicable to the P3 Program, or take other rate setting action that causes P3 Program revenues to decrease." It is imperative that the public be told that this is just the first of the potential P3 toll rate range settings and that the only direction these tolls, fees, and escalations can go is up. These strings-attached agreements, which are not subject to public comment, some of which were or will be executed after the reviews required by the P3 law and after the Board of Public Works vote, undermine public trust in agency processes, agency authority, and transparency. Some of these arrangements will be made without any further opportunity for the public to comment or even be aware of future changes regarding the tolls. We believe that the Governor and MDOT have misled the public in repeated representations that the project risk would be transferred to the private sector. At each step, it is clear that the state is taking on more risk, including by changes made after the August 11, 2021 BPW vote. (e.g., "In connection with financial close of each Section, MDTA will issue bonds or notes to fund certain costs in which the State is best equipped to manage and reduce the overall risk," August 26, 2021 IAA.) The August 2021 P3 contract and August 26, 2021 interagency agreement have many examples of the state assumption of this financial risk. Still more than the state itself, it appears that the taxpaying public will be on the hook for dozens of

compensation and relief events, toll road subsidies, monopoly markups, billions in utility relocations, and then even shortfall payments for mistakes made by MDOT, MDOT SHA, MDTA, and Transurban. The toll payers themselves will surely pay for those mistakes."

- "I oppose having toll Lanes on I270 in Montgomery County. This is nothing more than a tax on Montgomery County residents who chose to live here while those who chose to live north of Montgomery County in lower tax districts get a free pass to the county and then we will be financing the road improvements for the other counties."
- "The whole premise of the P3 is that wealthier people don't have to deal with traffic while most people have to sit in congestion. If the congestion is every relieved, the toll revenue disappears, along with the business model of the builder. Given that we need to cut greenhouse gas emissions, locking in auto travel for generations is a blunder of historic proportions."

I. Approval to Accept Staff's Recommended Action (Recommended Toll Rate Ranges)

The recommended action (recommended toll rate ranges) for Phase 1 South: American Legion Bridge I-270 to I-370 will consist of minimum toll rates, soft toll rate caps, and maximum toll rates for the HOT lanes. The toll rate ranges will be set to ensure the HOT lanes operate to established operational metrics and provide managed lane users with a faster and more reliable trip. The rates will also include annual escalation factors to ensure the toll rate ranges are adequate to cover the full term of the P3 Phase Developer Agreement (anticipated to be 50 years). The recommendation also includes a free passage discount that will be granted along the Phase 1 South: American Legion Bridge I-270 to I-370 HOT lanes for HOV 3+, buses and motorcycles. Toll rates will be set dynamically, meaning they could change up to every five minutes based on traffic volumes in the HOT lanes to provide customers who choose to pay a toll a faster and more reliable trip. The actual toll rates will change based on real-time traffic at each tolling point. The following encompasses the full recommended action.

A. Minimum Toll Rates

The minimum toll rate is the lowest toll rate per mile that will be charged within any tolling segment for the HOT lanes or the lowest total toll a vehicle will pay regardless of how far they travel. The minimum toll rate is intended to cover toll capture, processing, and collection costs.

B. Soft Rate Caps

The soft rate cap is the toll rate amount that can only be exceeded when at least one of the following thresholds are met within a given tolling segment during the preceding five-minute period: the average traffic volume exceeds 1,600 passenger car equivalent vehicles per hour per lane (PCEphpl) or the average speed in a tolling segment is below 50 mph. The soft rate cap will always be lower than the maximum toll rate and can be exceeded only temporarily to provide customers who choose to pay a toll, a faster and more reliable trip. The soft rate cap will only be exceeded until the throughput and speed performance targets are achieved, and then the toll rate will gradually return to the soft cap or below.

C. Maximum Toll Rates

The maximum toll rate is the highest per-mile toll rate that may be charged within any tolling segment for the HOT lanes. The actual per-mile rate paid by customers is responsive to real-time traffic. The maximum rates cannot be exceeded under any circumstance. The maximum rate will only be realized under conditions where the soft rate cap is exceeded, which would be during times of deteriorating performance. In extremely rare circumstances, when traffic demand is very high and customers are experiencing decreased speeds in a given tolling segment, the toll rate may reach the maximum toll rate. The toll rate is determined on a segment-by-segment basis. The maximum toll rate is required for the most congested tolling segments and likely would not come into effect for many segments.

D. Escalation

The MDTA staff recommends the minimum and maximum per-mile toll rates, soft rate caps, minimum toll, and unregistered video surcharge escalate annually. The adjustments are necessary to ensure the toll rates will keep up with (1) the growing traffic demand for the HOT lanes, (2) annual inflation, and (3) the goal of providing a faster and more reliable trip for customers who choose to pay the toll. The minimum per-mile toll rate and minimum toll would be escalated based on inflation only.

E. Discounts

In addition, the recommended action includes discounts for qualifying vehicles—including HOV 3+ (including car-vanpools), buses and motorcycles.

F. Recommended Action (Recommended Toll Rate Ranges)

We are seeking the Board's approval to accept the final recommendation.

Maryland Transportation Authority
MDTA

Recommended Action (Recommended Toll Rate Ranges, Soft Rate Caps, Discounts & Free Passage)

VEHICLE TYPE	GENERAL PURPOSE LANES	HOT LANES					
		Payment Type	Recommended Toll Rate Ranges (2021$/mile)[3]			HOV3+ Vanpools Carpools	Buses Motorcycles
			Minimum Toll Rate Range[2]	Soft Cap Rate	Maximum Toll Rate Range		
Passenger Vehicle (2-axle)	Free	Electronic Toll Collection (ETC) (*E-ZPass*)	$ 0.17	$ 1.50	$ 3.76	Free	Free
Motorcycle			$ 0.00	$ 0.00	$ 0.00		
3-axle Light			$ 0.26	$ 2.25	$ 5.64		
3-axle Heavy			$ 0.34	$ 3.00	$ 7.53		
4-axle Light			$ 0.43	$ 3.75	$ 9.41		
4-axle Heavy			$ 0.51	$ 4.50	$ 11.29		
5-axle			$ 1.02	$ 9.00	$ 22.58		
6+-axle			$ 1.28	$ 11.25	$ 28.22		
Passenger Vehicle (2-axle)	Free	Pay-By-Plate (Registered Video) (1.25x ETC)	$ 0.21	$ 1.88	$ 4.70	Free	Free
Motorcycle			$ 0.00	$ 0.00	$ 0.00		
3-axle Light			$ 0.32	$ 2.81	$ 7.05		
3-axle Heavy			$ 0.43	$ 3.75	$ 9.41		
4-axle Light			$ 0.53	$ 4.69	$ 11.76		
4-axle Heavy			$ 0.64	$ 5.63	$ 14.11		
5-axle			$ 1.28	$ 11.25	$ 28.23		
6+-axle			$ 1.59	$ 14.06	$ 35.28		
Passenger Vehicle (2-axle)	Free	Video Tolling[1, 4] (Unregistered Video) (1.5x ETC)	$ 0.26	$ 2.25	$ 5.64	Free	Free
Motorcycle			$ 0.00	$ 0.00	$ 0.00		
3-axle Light			$ 0.38	$ 3.38	$ 8.47		
3-axle Heavy			$ 0.51	$ 4.50	$ 11.29		
4-axle Light			$ 0.64	$ 5.63	$ 14.11		
4-axle Heavy			$ 0.77	$ 6.75	$ 16.93		
5-axle			$ 1.53	$ 13.50	$ 33.86		
6+-axle			$ 1.91	$ 16.88	$ 42.33		

[1] Total unregistered video surcharge (difference between ETC toll and unregistered video toll amount) cannot exceed $15.00 per trip. The surcharge is subject to escalation as defined below.

[2] The minimum trip toll (not per mile) by payment type for all vehicle types would be $0.50 for customers using E-ZPass, $0.63 for customers using Pay-By-Plate (Registered Video), and $0.75 for customers using Video Tolling (Unregistered Video).

[3] Escalation formulas can be found at mdta.maryland.gov/ALB270TollSetting and in Section B below.

[4] Customers can receive an early payment discount of 15% off their toll up to $5 for unregistered video trips if paid before notice is mailed.

TAB 7

CLOSED SESSION

TAB 8

MEMORANDUM

TO: MDTA Board
FROM: Ms. Chantelle Green, Director of Finance
SUBJECT: Traffic and Revenue Forecast Update
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

To brief the Maryland Transportation Authority (MDTA) Board on the annual update to the Traffic and Revenue (T&R) forecasts for all facilities.

SUMMARY

Each fall, an update to the ten-year traffic and revenue forecast is prepared by independent consultants. The MDTA selected CDM Smith through a competitive process to provide the T&R forecast. The forecast is built on historical data from the MDTA's facilities and national, regional, and State socioeconomic data, such as population, employment, unemployment, real income per capita, real gross domestic product, inflation, and fuel prices. As noted in Table 4-1 of the T&R Report, the forecast also accounts for, amongst other things, anticipated construction projects, the backlog of unprocessed *E-ZPass* and video toll transactions, COVID-19 impacts, new vehicle classifications, and the re-initiation of certain business practices such as the Tax Intercept Program.

ANALYSIS

Legacy Facilities

Figures 1 and **2** compare the three most recent traffic forecast for the legacy facilities. Through Fiscal Year (FY) 2027, legacy facility transactions are forecasted to decline by 9.4 million compared to the November 2020 T&R forecast. By contrast, in-lane revenue is expected to increase by $113.6 million compared to the November 2020 forecast primarily due to the forecasted growth in commercial vehicle transactions. FY 2022 transactions are forecasted to increase significantly over FY 2021 due to ongoing processing of backlogged transactions from FY 2021. Once the backlog processing of *E-ZPass* transactions and invoicing of video toll transactions are completed (by the end of FY 2022), transactions and revenue are forecasted to

return to levels generally more consistent with pre-pandemic transactions and revenue. Some declines are forecasted to occur in FY 2024 to FY 2026 due to planned construction on certain legacy facilities which is expected to cause diversion to other MDTA Legacy facilities as well as diversion from the MDTA system due to customers foregoing trips or using non-tolled alternatives. After FY 2026, transactions and revenue are not assumed to be impacted by construction projects and show a normal progression through the end of the forecast period.

Intercounty Connector (ICC) & I-95 Express Toll Lanes (ETL) Facilities

Figures **3** and **4** compare the three most recent traffic forecast for the ICC and ETL facilities. Through FY 2027, total trips on these facilities are forecasted to decline by 1.9 million compared to the November 2020 T&R forecast. (Trips account for each vehicle traveling on the facility regardless of miles traveled/gantries crossed.) Similarly, in-lane revenue is forecasted to decline slightly by $4.4 million compared to the November 2020 forecast. Like the legacy facilities, FY 2022 is forecasted to be significantly higher than the November 2020 forecast due to increased collections from the FY 2021 backlog of transactions. Overall, the current forecast is generally in line with the prior year forecast.

Administrative Toll Revenue

Figure 5 shows the administrative toll revenue forecast through FY 2027. Revenue is expected to increase by $24.7 million compared to the November 2020 forecast. In FY 2021, actual other revenue came in higher than forecast. Like the toll facilities, near-term projected administrative toll revenue is impacted by the transaction backlog. Other revenue is forecasted to significantly increase in FY 2022 and FY 2023 due to increased civil penalty collections following the elimination of the transaction backlog.

All Facilities

Figure 6 provides a comparison of the three most recent traffic forecasts for the FY 2021-2027 forecast period for all facilities. In total, forecasted revenues through FY 2027 are expected to increase by $133.9 million, or 2.8 percent, compared to the previous forecast. The primary drivers behind the increase are stronger than anticipated commercial vehicle growth on the MDTA's legacy facilities and the better than anticipated recovery from COVID in FY 2021.

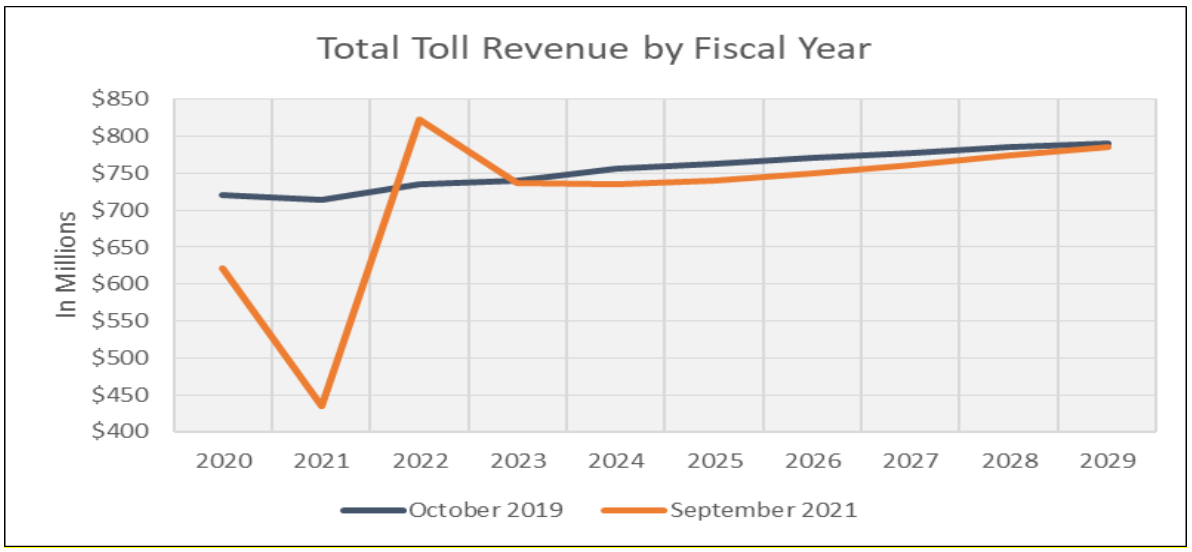
Future Outlook

COVID-19 directly impacted MDTA's annual revenue. While the current T&R forecast reflects improved stabilization from COVID-19, as illustrated by the MDTA's first quarter FY 2022 T&R results, some uncertainty remains. As shown in the table and graph below, when comparing the MDTA's current forecast to the most recent pre-COVID-19 forecast, revenues are expected to decline $392.1 million, or 5 percent, compared to the most recent pre-COVID forecast. The MDTA will continue to manage through the loss of these revenues in the years ahead.

MDTA Official Traffic and Revenue Forecasts

Fiscal Year	October 2019 Forecast	November 2021 Forecast	$ Change	% Change
	$ in millions			
2020	$ 720.9	$ 622.1	$ (98.8)	(14) %
2021 *	713.8	433.9	(279.9)	(39) %
2022 *	736.0	822.9	86.9	12 %
2023 *	740.0	736.1	(3.9)	(1) %
2024	756.4	735.7	(20.7)	(3) %
2025	762.4	740.6	(21.8)	(3) %
2026	771.2	749.2	(22.0)	(3) %
2027	777.5	761.3	(16.2)	(2) %
2028	785.4	774.4	(11.0)	(1) %
2029	789.9	785.3	(4.6)	(1) %
Total	$ 7,553.6	$ 7,161.5	$ (392.1)	(5) %

* Revenue shift between fiscal years



ATTACHMENT

- FY 2022 T&R Forecast Update Presentation
- Maryland Transportation Authority FY 2022 Traffic and Toll Revenue Forecast Update, November 2021, prepared by CDM Smith.

Figure 1

Traffic Legacy Facilities

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	98.9	86.3	71.5	(14.8)
2022	116.3	107.7	120.0	12.3
2023	117.0	112.1	112.0	(0.1)
2024	118.3	112.0	110.7	(1.3)
2025	118.7	111.0	109.5	(1.5)
2026	119.8	112.6	110.5	(2.1)
2027	120.6	114.3	112.5	(1.8)
Total	**809.7**	**756.1**	**746.7**	**(9.4)**

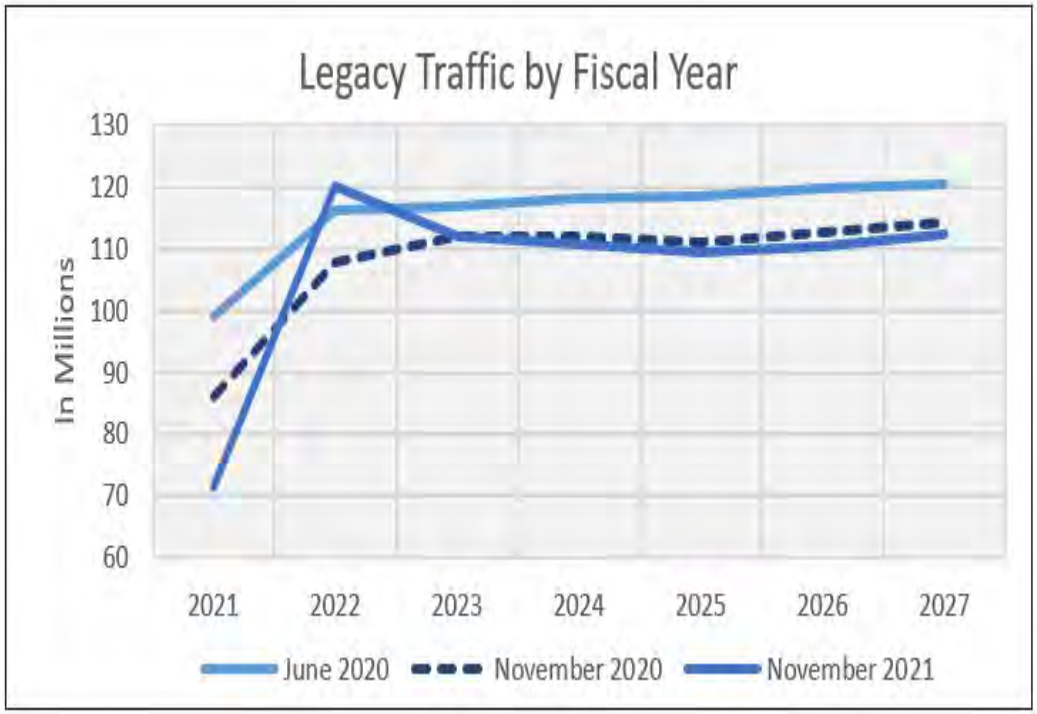


Figure 2

Legacy Toll Lane Revenue

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	512.5	453.6	387.5	$ (66.08)
2022	577.1	568.9	700.3	$ 131.44
2023	584.6	595.5	610.0	$ 14.47
2024	594.3	595.2	600.6	$ 5.40
2025	596.0	585.8	597.5	$ 11.70
2026	600.5	595.5	602.4	$ 6.88
2027	603.8	600.6	610.4	$ 9.80
Total	**4068.7**	**3995.1**	**4108.7**	**$ 113.61**

Figure 3

Traffic ICC & ETL Facilities

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	38.2	31.3	16.0	(15.3)
2022	47.3	45.6	56.9	11.3
2023	49.2	50.5	50.3	(0.2)
2024	50.2	51.7	52.1	0.4
2025	54.1	52.3	52.9	0.6
2026	56.5	53.1	53.7	0.6
2027	58.6	54.5	55.2	0.7
Total	**354.1**	**339.0**	**337.1**	**(1.9)**

Figure 4

ICC & ETL Toll Lane Revenue

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	67.6	53.0	27.7	$ (25.28)
2022	83.1	79.5	98.8	$ 19.33
2023	86.5	88.3	87.9	$ (0.38)
2024	88.4	90.5	90.7	$ 0.16
2025	94.7	93.2	94.0	$ 0.78
2026	98.7	96.9	97.4	$ 0.48
2027	101.7	99.6	100.1	$ 0.50
Total	**$ 620.6**	**$ 601.0**	**$ 596.6**	**$ (4.42)**

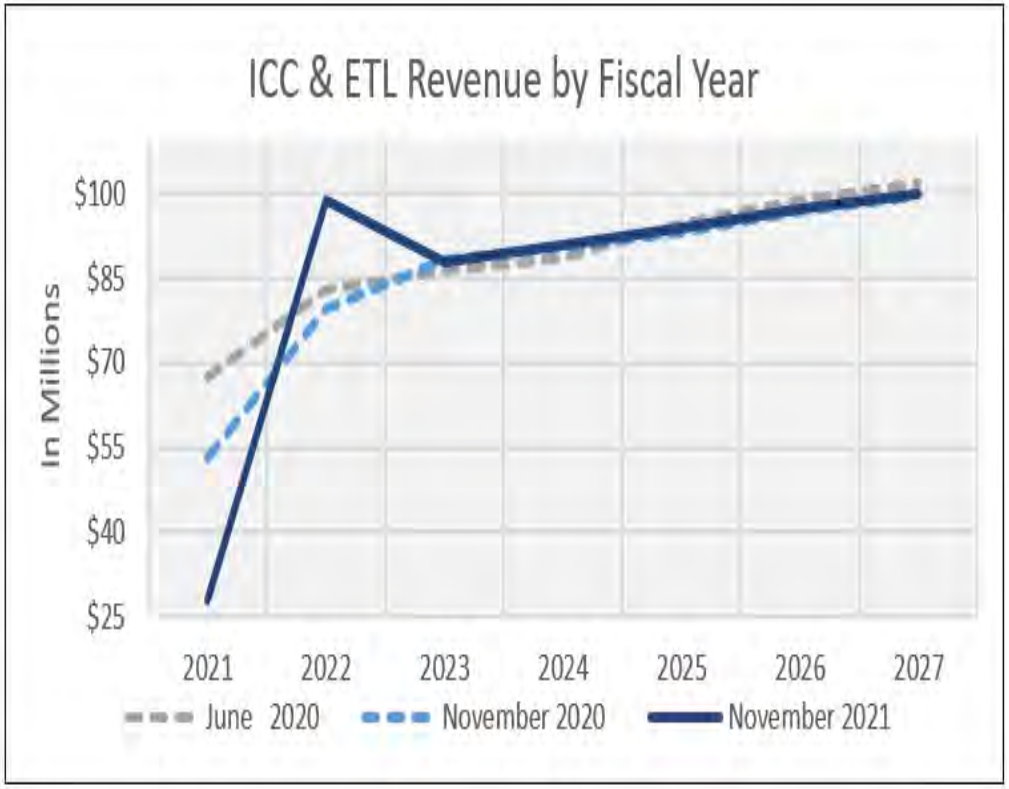


Figure 5

Toll Administrative Revenue (exclude Concession)

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	22.5	5.0	18.7	$ 13.66
2022	28.5	23.5	23.8	$ 0.31
2023	28.9	29.0	38.2	$ 9.24
2024	31.3	42.8	44.4	$ 1.63
2025	31.4	49.5	49.1	$ (0.42)
2026	32.4	49.8	49.4	$ (0.38)
2027	32.6	50.2	50.8	$ 0.65
Total	**$ 207.4**	**$ 249.7**	**$ 274.4**	**$ 24.70**

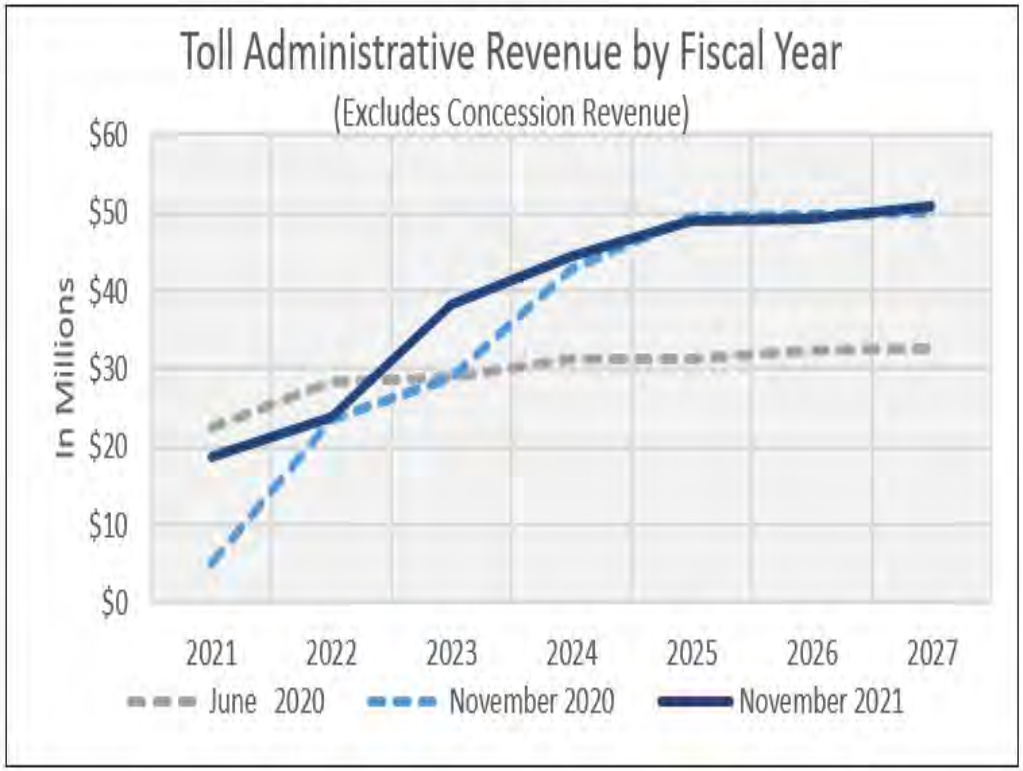
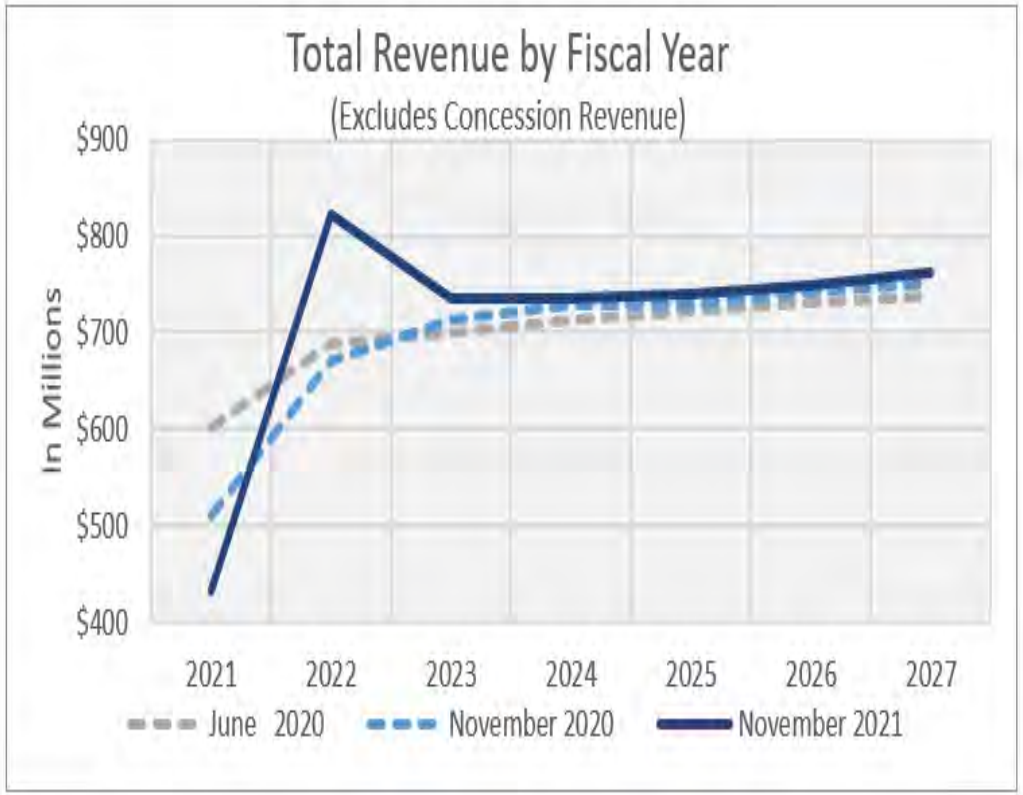


Figure 6

Systemwide Toll Lane & Toll Administrative Revenue

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	602.5	511.6	433.9	$ (77.71)
2022	688.6	671.8	822.9	$ 151.07
2023	699.9	712.8	736.1	$ 23.33
2024	714.0	728.5	735.7	$ 7.19
2025	722.1	728.5	740.6	$ 12.07
2026	731.6	742.2	749.2	$ 6.98
2027	738.0	750.4	761.3	$ 10.95
Total	**$ 4,896.8**	**$ 4,845.8**	**$ 4,979.7**	**$ 133.88**



FY 2022 T&R FORECAST UPDATE

NOVEMBER 2021

TRAFFIC & REVENUE FORECAST

Summary

- Investment grade forecast updated annually in October by T&R consultants
- Early update in August 2021 due to legislative forecast submission
- Current forecast totals $4.98B (FY 2021-2027), up $134M or 3% from November 2020
  - FY 2021 revenues impacted by delayed invoicing; toll revenues rebound in FY 2022

Key Forecast Assumptions

- COVID-19 impacts assumed for all facilities based on latest COVID-19 impact analysis
  - No future COVID-19 impacts assumed for legacy commercial vehicles
- Backlogged image tolls (systemwide) and electronic tolls (ICC) are fully collected by May 2022
- Video Tolls
  - Video toll invoicing is current by the end of FY 2022.
  - Lower than normal video payment rate assumed for FY 2022 due to the age of the transactions
  - Vehicle registration holds/suspensions and CCU tax intercept program resume in FY 2022
- 3G enhancements
  - Pay-by-Plate and Early NOTD payment available 4/29/21with a 2-year ramp up to full adoption levels
  - New vehicle classifications assumed to go into effect in late FY 2022

TRAFFIC & REVENUE FORECAST - REVENUE

In-lane & Administrative Toll Revenue All Facilities

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	602.5	511.6	433.9	$ (77.71)
2022	688.6	671.8	822.9	$ 151.07
2023	699.9	712.8	736.1	$ 23.33
2024	714.0	728.5	735.7	$ 7.19
2025	722.1	728.5	740.6	$ 12.07
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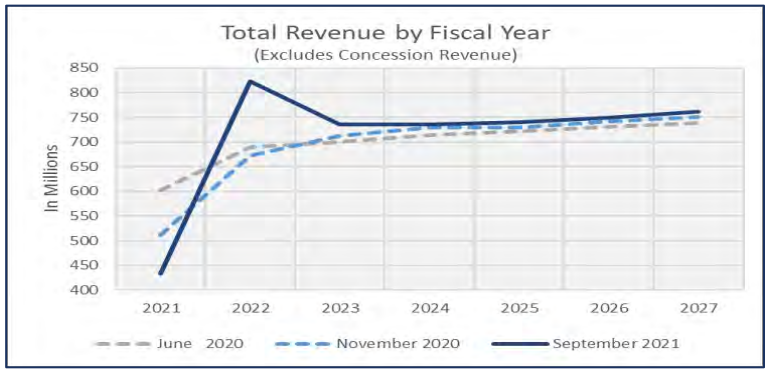
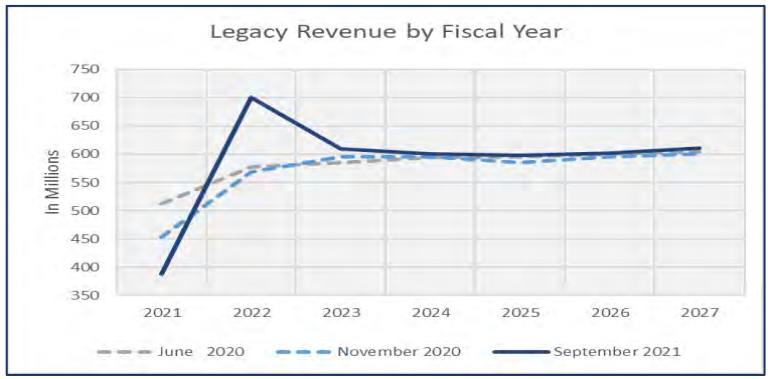
Total	**$ 4,896.8**	**$ 4,845.8**	**$ 4,979.7**	**$ 133.88**



- June 2020 Forecast: COVID-19 Driven
  - $422M↓
- November 2020 Forecast:
  - $62M↓
- October 2021 Forecast:
  - Stronger than anticipated commercial vehicle growth
  - Better than anticipated recovery from COVID in FY 2021
  - Total revenue increase: $134M↑

In-lane Toll Revenue Legacy Facilities

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	512.5	453.6	387.5	$ (66.08)
2022	577.1	568.9	700.3	$ 131.44
2023	584.6	595.5	610.0	$ 14.47
2024	594.3	595.2	600.6	$ 5.40
2025	596.0	585.8	597.5	$ 11.70
2026	600.5	595.5	602.4	$ 6.88
2027	603.8	600.6	610.4	$ 9.80
Total	**4068.7**	**3995.1**	**4108.7**	**$ 113.61**

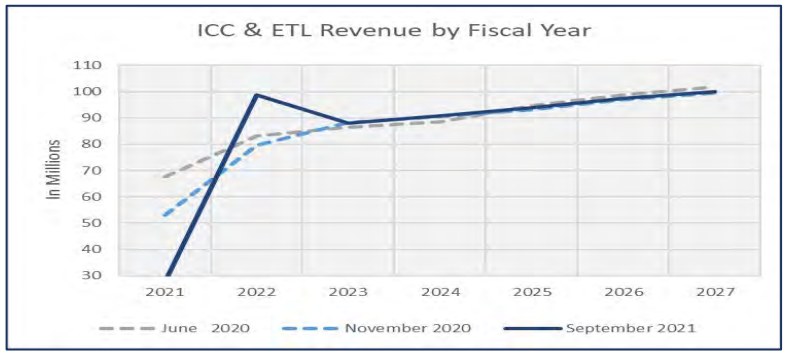


- June 2020 Forecast: COVID-19 Driven
  - $279M↓
- November 2020 Forecast:
  - $69M↓
- October 2021 Forecast:
  - Stronger than anticipated commercial vehicle traffic
  - Total revenue increase: $114M↑

TRAFFIC & REVENUE FORECAST – REVENUE (CONTINUED)

In-lane Toll Revenue ICC & ETL Facilities

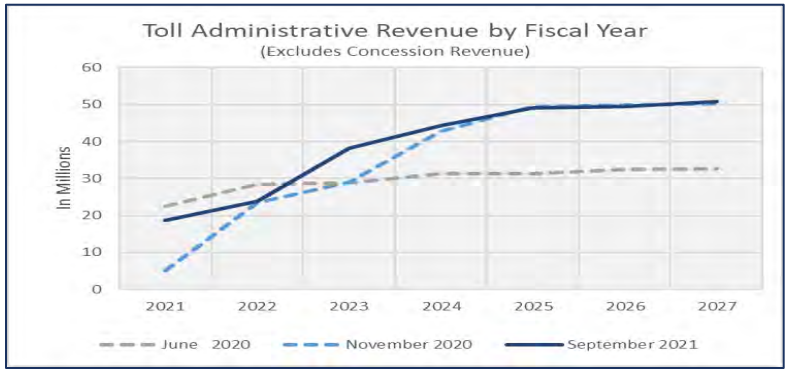
Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	67.6	53.0	27.7	$ (25.28)
2022	83.1	79.5	98.8	$ 19.33
2023	86.5	88.3	87.9	$ (0.38)
2024	88.4	90.5	90.7	$ 0.16
2025	94.7	93.2	94.0	$ 0.78
2026	98.7	96.9	97.4	$ 0.48
2027	101.7	99.6	100.1	$ 0.50
Total	**$ 620.6**	**$ 601.0**	**$ 596.6**	**$ (4.42)**



- June 2020 Forecast: COVID-19 Driven
  - $61M↓
- November 2020 Forecast:
  - $19M↓
- October 2021 Forecast
  - FY 2021 revenues significantly reduced on the ICC due to delay in billings
  - Total revenue reduction: $4M↓

Administrative Toll Revenue

Fiscal Year	June 2020	November 2020	November 2021	November 2020 to November 2021
2021	22.5	5.0	18.7	$ 13.66
2022	28.5	23.5	23.8	$ 0.31
2023	28.9	29.0	38.2	$ 9.24
2024	31.3	42.8	44.4	$ 1.63
2025	31.4	49.5	49.1	$ (0.42)
2026	32.4	49.8	49.4	$ (0.38)
2027	32.6	50.2	50.8	$ 0.65
Total	**$ 207.4**	**$ 249.7**	**$ 274.4**	**$ 24.70**



- June 2020 Forecast: Civil Penalty reduction
  - $83M↓
- November 2020 Forecast:
  - $27M↑
- October 2021
  - FY 2021 actuals higher than forecasted
  - Total revenue increase: $25M↑

TRAFFIC & REVENUE FORECAST – FUTURE OUTLOOK

MDTA Official Traffic & Revenue Forecasts

Fiscal Year	October 2019 Forecast	September 2021 Forecast	$ Change	% Change
	$ in millions			
2020	$ 720.9	$ 622.1	$ (98.8)	(14) %
2021 *	713.8	433.9	(279.9)	(39) %
2022 *	736.0	822.9	86.9	12 %
2023 *	740.0	736.1	(3.9)	(1) %
2024	756.4	735.7	(20.7)	(3) %
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2026	771.2	749.2	(22.0)	(3) %
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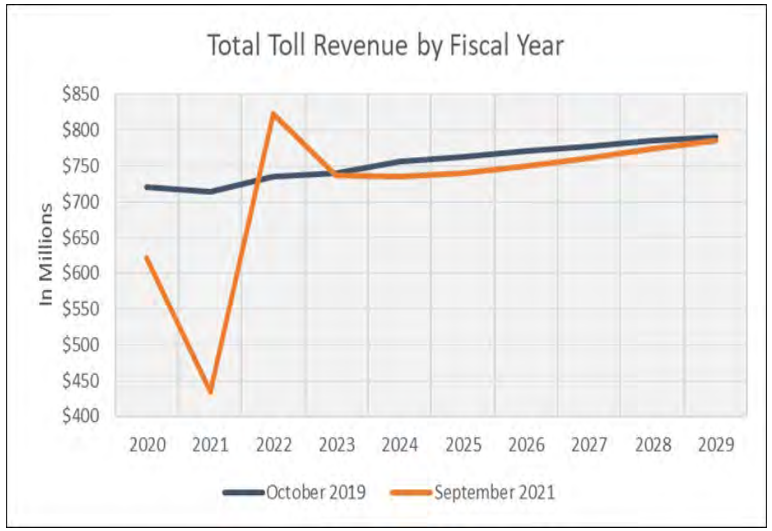
2028	785.4	774.4	(11.0)	(1) %
2029	789.9	785.3	(4.6)	(1) %
Total	$ 7,553.6	$ 7,161.5	$ (392.1)	(5) %

* Revenue shift between fiscal years

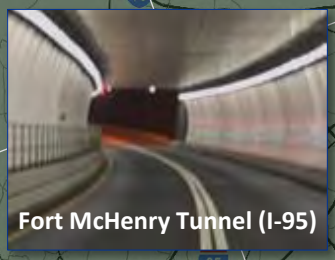


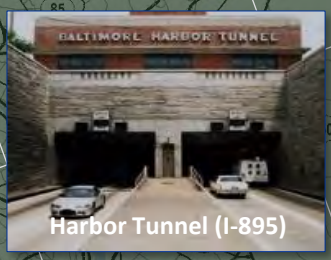
- Significant decline in revenue compared to Pre-COVID-19 T&R Forecast
  - $392.1M↓
- Some uncertainty remains
  - Revenue collection
  - Image processing

Maryland Transportation Authority FY2022 Traffic and Toll Revenue Forecast Update

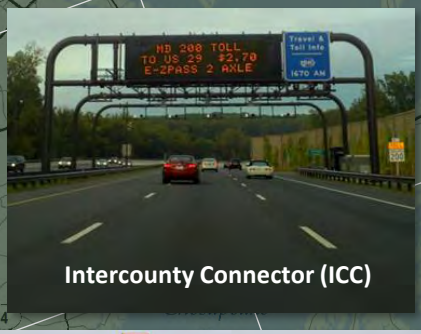

Kennedy Highway (I-95)


Hatem Bridge (US 40)


Fort McHenry Tunnel (I-95)



Harbor Tunnel (I-895)



Intercounty Connector (ICC)


Key Bridge (I-695)

I-95 Express Toll Lanes (ETL)


Nice/ Middleton Bridge (US 301)


Bay Bridge (US 50/301)

FINAL REPORT
November 4, 2021

MDTA

Maryland Transportation Authority

CDM Smith

Table of Contents

List of Figures

List of Tables

Chapter 1
Introduction

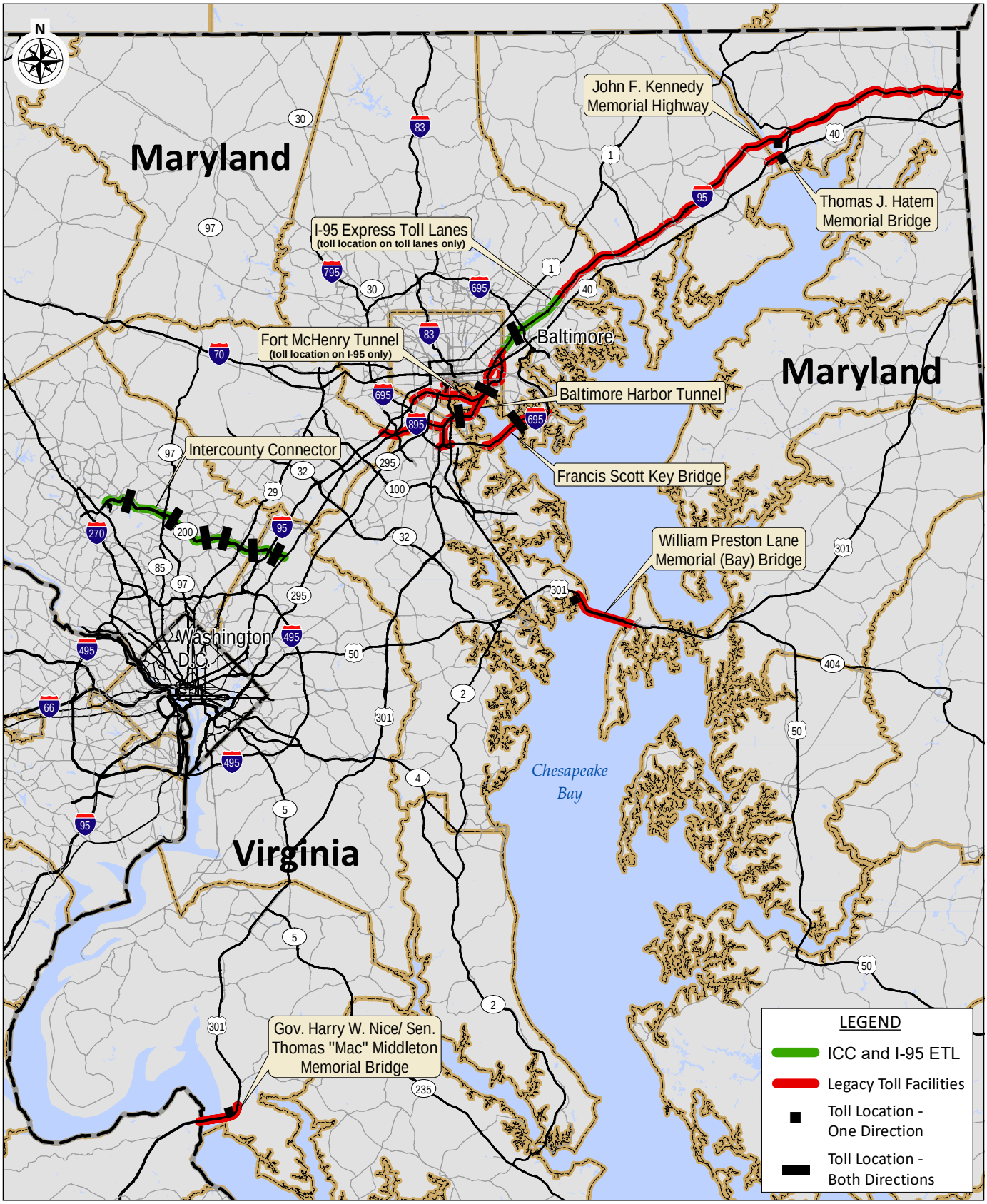
This letter report includes ten-year forecasts through FY 2031 for the seven "Legacy" toll facilities operated by MDTA, for the Intercounty Connector (ICC), and for the I-95 Express Toll Lanes (ETLs). It summarizes the study analysis, including a presentation of historical traffic and revenue trends, relevant socioeconomic conditions and forecasts, and the ten-year forecast results.

1.1 System Description

The nine facilities operated by MDTA are listed below. Collectively, the first seven facilities in the list below are referred to as the Legacy System.

- Thomas J. Hatem Memorial Bridge (Hatem Bridge, TJH)
- John F. Kennedy Memorial Highway, excluding the I-95 Express Toll Lanes (Kennedy Highway, JFK)
- Baltimore Harbor Tunnel (Harbor Tunnel, BHT)
- Fort McHenry Tunnel (Fort McHenry Tunnel, FMT)
- Francis Scott Key Bridge (Key Bridge, FSK)
- William Preston Lane Jr. Memorial Bridge (Bay Bridge, WPL)
- Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge (Nice/Middleton Bridge, HWN)
- Intercounty Connector (ICC/MD 200)
- I-95 Express Toll Lanes (I-95 ETLs)

Figure 1-1 shows the locations of the MDTA Legacy system, ICC, and I-95 ETLs toll facilities and toll gantries in a regional context. As can be implied by the geographic distribution of the different facilities, the MDTA system serves a variety of travel purposes within the regional transportation system and consequently has a diverse mix of traffic classes and payment types.



X:\TFT Group\Projects\MD Read Only (Moved to ProjectWise)\MD 236880 MDTA Task 24 - 2020 Legacy T&R Update\Graphics\ArcMAP\Legacy Facility Location Map - Fig 1-1_2020.mxd \ 5-20-20

FACILITY LOCATION MAP
MARYLAND TOLL FACILITIES

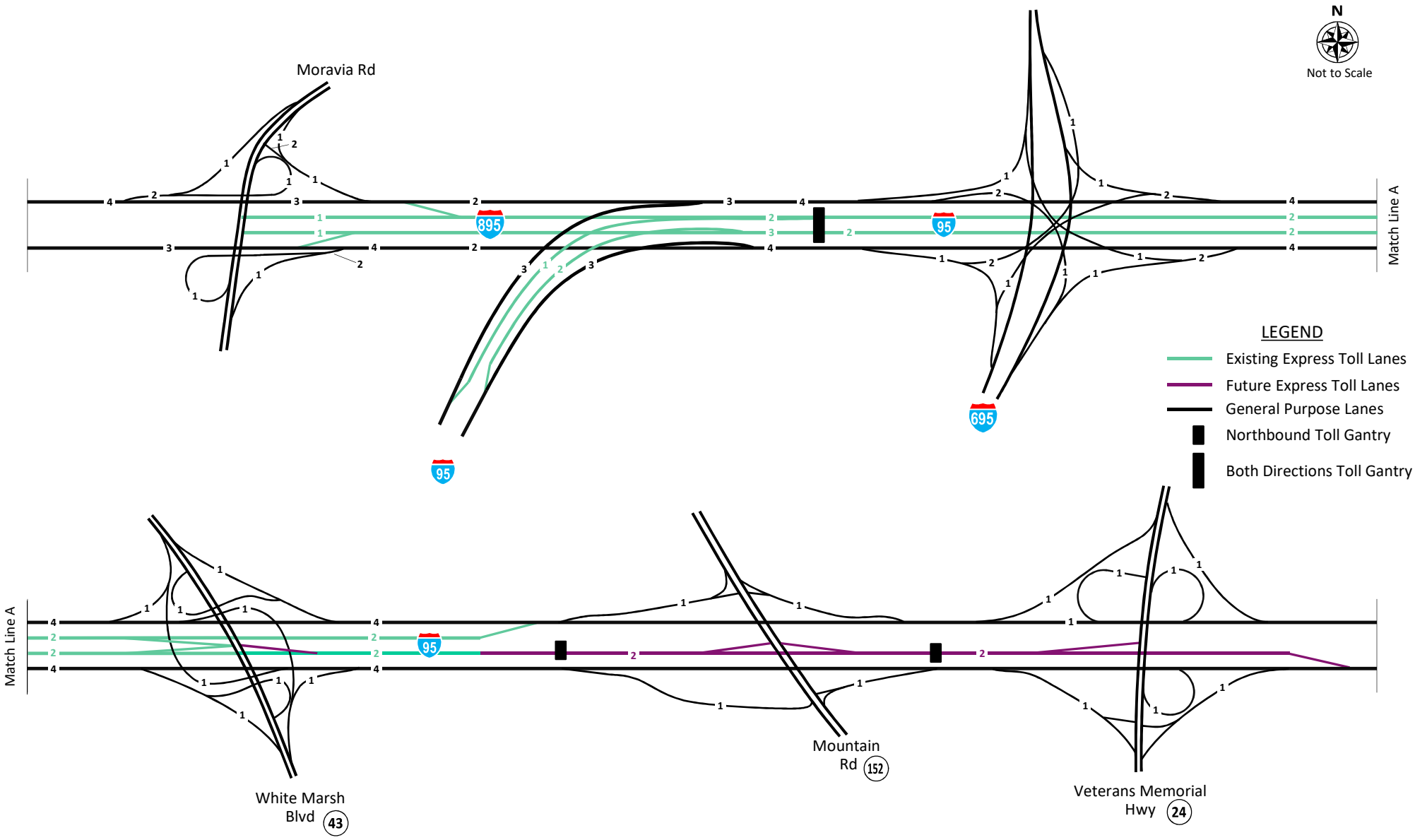
FIGURE 1-1

In the north, the Hatem Bridge and the Kennedy Highway form two parallel crossings of the Susquehanna River. The Hatem Bridge carries US 40 over the river and is the oldest of the MDTA's facilities, having been open to traffic since August 1940. The existing structure replaced an older bridge that first opened in 1910. The John F. Kennedy Memorial Highway is a 50-mile segment of I-95 that was opened in November 1963. It currently has one mainline toll plaza located just east of the Susquehanna River. The I-95 ETLs are a separate eight-mile toll facility on the Kennedy Highway between I-895 and MD 43 in Northeast Baltimore. The facility, which opened in December 2014, includes two express toll lanes in each direction in between the general purpose lanes on this segment of I-95. A northern extension of only the northbound I-95 ETL facility is planned to open in phases within the forecasting horizon of this report. The assumed opening dates of this extension are included in the assumptions in Chapter 4. **Figure 1-2** shows the assumed access and tolling points on the I-95 ETL extension.

There are three alternative MDTA toll routes that cross the Baltimore Harbor in the center of the region: the Baltimore Harbor Tunnel (I-895), the Francis Scott Key Bridge (I-695), and the Fort McHenry Tunnel (I-95), which are collectively referred to as the Baltimore Harbor crossings. The oldest of the three Baltimore Harbor crossings is the Harbor Tunnel which opened in November 1957. The Key Bridge was built to alleviate congestion and delays at the Harbor Tunnel and was opened in March 1977. The newest of these facilities, the Fort McHenry Tunnel, is an eight-lane crossing that opened in November 1985.

The ICC facility is in the northern Washington D.C. metro region and connects I-370 in the Gaithersburg area to I-95 and US 1 near Laurel. The ICC opened in phases. The initial segment between I-370 and MD 97 opened to traffic in February 2011 and began collecting tolls in March 2011. The segment from MD 97 to I-95 opened to traffic in November 2011 and began collecting tolls in December 2011, and the final segment between I-95 and US 1 opened and began collecting tolls in November 2014.

The southern region contains two facilities which carry US 301 to diverse destinations. The Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge was opened in December 1940, connecting Maryland with Virginia, thereby allowing travelers making regional through-trips to bypass the Washington DC area. The William Preston Lane Jr. Memorial (Bay) Bridge was first opened to traffic in July 1952 and crosses the Chesapeake Bay. Twenty-one years later in June 1973, a parallel span carrying westbound traffic was opened, with the original span carrying eastbound traffic. A Tier 1 National Environmental Policy Act (NEPA) Study, called the Chesapeake Bay Crossing Study, is ongoing. The study is considering alternatives to address congestion on the Bay Bridge. A Record of Decision (ROD) on the study is anticipated in winter 2021-2022. A Tier 2, project-level NEPA Study could proceed following the ROD. Final project design and construction would follow final agency decisions based on completion of Tier 2 NEPA Study documents. Currently, there is no timetable for construction of a new crossing.

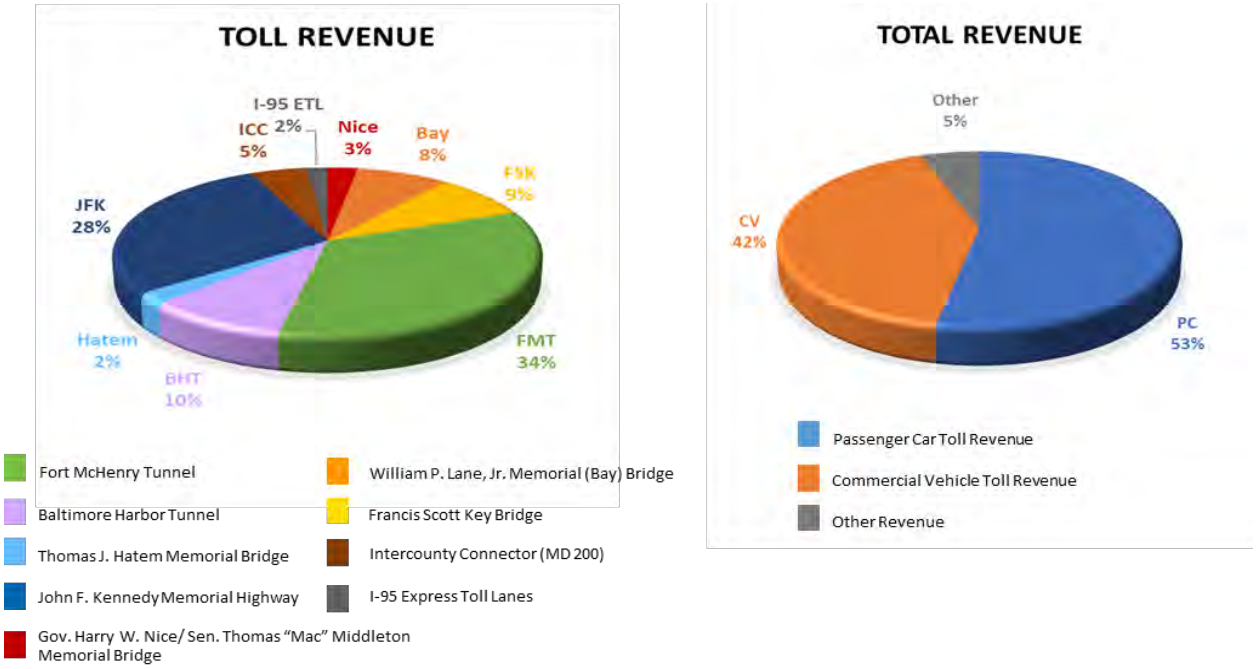


I-95 EXPRESS TOLL LANES (ETL)
EXISTING & FUTURE CONFIGURATION

FIGURE 1-2

For context in this letter report, **Figure 1-3** shows the share of MDTA toll revenue by facility and total revenue by type for the most recent full fiscal year. As shown, over three quarters of toll revenue is from the Kennedy Highway, Fort McHenry Tunnel, Harbor Tunnel, and Key Bridge, which make up the I-95 corridor and parallel Interstate crossings near downtown Baltimore. Total revenue includes about 42 percent commercial vehicle toll revenue, about 53 percent passenger car toll revenue, and about 5 percent other revenue. Other revenue includes a combination of revenue collected and revenue deductions from unused Commuter Plan and Shoppers Plan trips, transponder fees and sales, the Hatem Bridge E-ZPass program, violation recovery (civil penalties), and commercial vehicle fees and discounts (post-usage discount, high frequency discount, and over-sized permit fees). The shares of revenue for FY 2021 were atypical compared to previous years due to the COVID-19 pandemic, business rule changes associated with COVID-19, and the conversion to all electronic tolling (AET). Commuting facilities contributed a smaller share due to increases in remote working and commercial vehicles were a higher share since they recovered to typical traffic levels much faster than passenger cars during the pandemic.

Figure 1-3
FY 2021 MDTA Share of Toll Revenue by Facility and Total Revenue by Type



1.2 Toll Rate and Civil Penalty Structure

1.2.1 Standard Toll Rates

The toll rates described in this sub-section are standard toll rates. Several temporary toll rate changes were made in response to the COVID-19 pandemic and are described in the next sub-section.

Table 1-1 provides the standard Legacy system toll rates and toll collection direction. Toll rates vary by facility, method of payment, and vehicle class. The toll rates are grouped into three categories: Maryland E-ZPass, base toll rates which includes out-of-state E-ZPass and the pay-by-

plate payment method, and video payment. Pay-by-Plate was introduced as another payment option for customers on April 29, 2021, which allows customers to pre-register their vehicle's license plate for video payment and receive the prior cash toll rate. A discount for early payment of video tolls was also introduced on April 29, 2021. This allows customers to receive a 15 percent discount (up to $5.00) when they pay their video tolls before an invoice is mailed. Maryland E-ZPass toll rates apply to drivers who register for an E-ZPass account and receive a transponder from MDTA. These customers receive a discount compared to the base toll rate customers and can also enroll in discounts like the shopper and commuter rates and programs further described in **Table 1-2**. The base toll rate applies to out-of-state registered E-ZPass and pay-by-plate customers. Video customers pay a 50 percent surcharge over the base toll rate. Cash was a payment option at five of the seven Legacy facilities up until March 17, 2020 when cashless collection was initiated as a safety precaution related to the COVID-19 pandemic. The Hatem Bridge and Key Bridge facilities had already been converted to all-electronic tolling in October 2019. Permanent cashless tolling on these facilities that offered a cash payment option before the pandemic was announced on August 6, 2020.

Table 1-1
Standard MDTA Legacy System Toll Rates and Toll Collection Direction

Class	Hatem Bridge (Eastbound)	Kennedy Highway (Eastbound)	Harbor Facilities: FMT, BHT, FSK (Both)	Bay Bridge (Eastbound)	Nice/ Middleton Bridge (Westbound)
Maryland E-ZPass Payment Type					
Commuter[1]	$2.80	$2.80	$1.40	$1.40	$2.10
Shopper[1]	NA	NA	NA	$2.00	NA
2-axle	$6.00	$6.00	$3.00	$2.50	$5.40
3-axle	$11.20	$16.00	$8.00	$8.00	$12.00
4-axle	$16.80	$24.00	$12.00	$12.00	$18.00
5-axle	$48.00	$48.00	$24.00	$24.00	$36.00
6-axle+	$60.00	$60.00	$30.00	$30.00	$45.00
Base Toll Rates: Other E-ZPass Payment Type and Pay-By-Plate Payment Type[2]					
2-axle	$8.00	$8.00	$4.00	$4.00	$6.00
3-axle	$16.00	$16.00	$8.00	$8.00	$12.00
4-axle	$24.00	$24.00	$12.00	$12.00	$18.00
5-axle	$48.00	$48.00	$24.00	$24.00	$36.00
6-axle+	$60.00	$60.00	$30.00	$30.00	$45.00
Video Payment Type[3]					
2-axle	$12.00	$12.00	$6.00	$6.00	$9.00
3-axle	$24.00	$24.00	$12.00	$12.00	$18.00
4-axle	$36.00	$36.00	$18.00	$18.00	$27.00
5-axle	$63.00	$63.00	$36.00	$36.00	$51.00
6-axle+	$75.00	$75.00	$45.00	$45.00	$60.00

[1]Commuter and shopper programs for 2-axle vehicles only. Rates shown are if all trips are used

[2]ITOLs (video images matched to existing E-ZPass accounts) are charged the base toll rate.

[3]Customers that pay their video toll before an invoice is mailed are eligible for a 15% discount

Table 1-2 provides a description of the other MDTA Legacy system discount toll rate programs available to Maryland E-ZPass customers. The programs available for two-axle vehicles aim to provide discounts for drivers who use the MDTA facilities frequently. Commuter plans are available for the Baltimore Harbor crossings, the Nice/Middleton Bridge, and the Bay Bridge. These plans allow customers to complete a set number of trips within a 45-day period at a fixed price on specific facilities. Specific details of the commuter programs are shown in **Table 1-2**. In addition to the commuter plan at the Bay Bridge, there is a shopper plan that allows drivers to take ten trips Sunday through Thursday for $20 over a 90-day period on the Bay Bridge. The Hatem Bridge has two plans offered: Hatem Plan A and Hatem Plan B. Both plans provide unlimited trips for a flat annual fee of $20 and vary slightly in account setup and associated fees.

Two discount plans are offered for commercial vehicles with five-or-more axles: the post usage discount and supplemental rebate plan. The post usage discount reimburses business accounts a percentage of monthly tolls in the range of 10 to 20 percent based on the toll amount accrued in a 30-day period. The supplemental rebate program provides a similar structure for individual accounts by providing a discount in the range of 10 to 20 percent for accounts that make more than 60 trips per month. Also listed in **Table 1-2** are the Baltimore Harbor Tunnel Childs Street ramp and Key Bridge Broening Highway Turnaround tolls which are a lower toll rate for three-or-more axle vehicles using specific ramps near the Harbor Tunnel and Key Bridge

Tolls on the ICC differ from the Legacy system in that they're assessed on particular interchange-to-interchange movements, as shown in **Table 1-3.** The ICC is a cashless facility with E-ZPass, Pay-by-Plate or video payment options. This table provides the two-axle E-ZPass toll rates, which vary from $0.40 to $3.86 depending on the length of the trip and time of day. Higher toll rates are assessed on weekdays during the Peak Periods, which are 6:00 to 9:00 AM and 3:00 to 7:00 PM, compared to the Overnight (11:00 PM to 5:00 AM) and Off-Peak (all other hours) time periods. Tolls differ on the weekends for the Overnight and Off-Peak periods. E-ZPass toll rates are higher for commercial and recreational (boat and camper) vehicles based on the number of axles. Unlike toll rates on the Legacy system, E-ZPass rates are the same on the ICC for customers holding their accounts through MDTA and through other agencies. All video toll customers pay a 50 percent surcharge over the E-ZPass rate with a minimum of $1 and maximum of $15 above the E-ZPass rates. Pay-by-Plate customers pay a rate in between the video toll and E-ZPass customers.

Table 1-2
Other MDTA Legacy System Discount Toll Rate Programs and Rates

Program	Details
Baltimore Region Commuter Discount Plan	For E-ZPass Maryland accounts holders driving **two-axle vehicles**. The Baltimore Regional Plan is $70 for 50 trips on the Fort McHenry Tunnel, Harbor Tunnel, Key Bridge, Kennedy HIghway, or Hatem Bridge. Two "trips" are deducted for each crossing of the Kennedy Highway and Hatem Bridge . Plans end after 45 days or when all of the trips are used, whichever comes first.
Nice Bridge Commuter Discount Plan	For E-ZPass Maryland accounts holders driving **two-axle vehicles**. The Nice bridge plan is $52.50 and offers 25 trips. The plans ends after 45 days or when all of the trips are used, whichever comes first.
Bay Bridge Commuter Discount Plan	For E-ZPass Maryland accounts holders driving **two-axle vehicles**. The Bay Bridge Plan is $35.00 and offers 25 trips. The plan ends after 45 days or when all of the trips are used, whichever comes first.
Bay Bridge Shopper Discount Plan	For E-ZPass Maryland accounts holders driving **two-axle vehicles**. The Bay Bridge Shopper plan is $20.00 for ten two-axle trips that can be used Sunday through Thursday. The plan ends after 90 days or when all of the trips are used, whichever comes first.
Hatem Bridge Discount Plan A	An E-ZPass account with transponders valid only at the Hatem Bridge. This plan applies only to **two-axle vehicles**, and includes unlimited trips. This plan is subject to a flat annual fee of $20.00. There are NO account fees, prepaid toll deposits or account statements.
Hatem Bridge Discount Plan B	This discount plan is attached to a normal Maryland E-ZPass account. This plan applies only to **two-axle vehicles**, and includes unlimited trips. This plan is subject to a flat annual fee of $20.00. Account fees apply as with the normal Maryland E-ZPass account.
Post Usage Discount Plan	Business accounts operating **five-or-more-axle vehicles** qualify for an E-ZPass post-usage discount based on the tolls paid in every 30-day period, with a 10 percent discount offered for total monthly tolls of $150.00 to $1,999.99, 15 percent for total monthly tolls of $2,000.00 to $7,500.00 and 20 percent for total monthly tolls of over $7,500.00.
Supplemental Rebate Plan	A supplemental rebate program is offered to **five-or-more-axle vehicles** with individual transponders making 60 or more trips per month. As of July 1, 2015, a 10 percent discount is offered for five- or more-axle vehicle transponders making 60-79 trips per month, 15 percent for 80-99 trips per month, and 20 percent for 100 or more per month.
Baltimore Harbor Childs Street Ramps and Key Bridge Broening Highway Turnaround Toll	Vehicles with a valid E-ZPass Maryland account and transponder will pay $2 per axle for **3, 4, 5 and 6+ axle vehicles** to use the I-895/Childs Street ramps at the Baltimore Harbor Tunnel and when making the Broening Highway Turnaround on the Key Bridge.

Table 1-3
Intercounty Connector Two-Axle E-ZPass Toll Rates by Movement and Time Period

Entrance	Time Period[1]	Exit						
		I-370 / Shady Grove Rd.	SR 97 / Georgia Ave.	SR 182 / Layhill Rd.	SR 650 / New Hampshire Ave.	US 29 / Briggs Cheney Rd.	I-95	Konterra Dr. / US 1
I-370; Shady Grove Rd.	Peak		$1.24	$1.74	$2.37	$2.92	$3.52	$3.86
	Off-Peak		$0.96	$1.35	$1.83	$2.26	$2.72	$2.98
	Overnight		$0.40	$0.56	$0.75	$0.93	$1.12	$1.23
SR 97 / Georgia Ave.	Peak	$1.24		$0.50	$1.13	$1.68	$2.28	$2.61
	Off-Peak	$0.96		$0.40	$0.87	$1.30	$1.76	$2.02
	Overnight	$0.40		$0.40	$0.40	$0.53	$0.72	$0.83
SR 182 / Layhill Rd.	Peak	$1.74	$0.50		$0.62	$1.18	$1.78	$2.11
	Off-Peak	$1.35	$0.40		$0.48	$0.91	$1.37	$1.63
	Overnight	$0.56	$0.40		$0.40	$0.40	$0.56	$0.67
SR 650 / New Hampshire Ave.	Peak	$2.37	$1.13	$0.62		$0.55	$1.15	$1.49
	Off-Peak	$1.83	$0.87	$0.48		$0.43	$0.89	$1.15
	Overnight	$0.75	$0.40	$0.40		$0.40	$0.40	$0.47
US 29 / Briggs Cheney Rd.	Peak	$2.92	$1.68	$1.18	$0.55		$0.60	$0.94
	Off-Peak	$2.26	$1.30	$0.91	$0.43		$0.46	$0.72
	Overnight	$0.93	$0.53	$0.40	$0.40		$0.40	$0.40
I-95	Peak	$3.52	$2.28	$1.78	$1.15	$0.60		$0.44
	Off-Peak	$2.72	$1.76	$1.37	$0.89	$0.46		$0.40
	Overnight	$1.12	$0.72	$0.56	$0.40	$0.40		$0.40
Konterra Dr. / US 1	Peak	$3.86	$2.61	$2.11	$1.49	$0.94	$0.44	
	Off-Peak	$2.98	$2.02	$1.63	$1.15	$0.72	$0.40	
	Overnight	$1.23	$0.83	$0.67	$0.47	$0.40	$0.40	

[1]Time periods are:

Peak Period is defined as 6:00 to 9:00 AM and 4:00 to 7:00 PM on Weekdays (excluding federal holidays).

Off-Peak Period is defined as 5:00 to 6:00 AM, 9:00 AM to 4:00 PM, and 7:00 to 11:00 PM on Weekdays and 5:00 AM to 11:00 PM on Weekends and federal holidays.

Overnight is defined as 11:00 PM to 5:00 AM every day.

The I-95 ETLs are an express lane facility with a single tolling point in each direction. Similar to the ICC, toll rates vary by vehicle type and time period. It is a cashless facility with payment method options of E-ZPass, Pay-by-Plate, or video tolling. As shown previously in **Figure 1-2**, a northbound extension of the I-95 ETLs is also planned to open within the forecasting period. **Table 1-4** provides the toll rates by axle and payment type for the existing section from I-895 to MD 43, as well as the assumed toll rates for the two northbound extension tolling points, which extend through MD 24. Unlike toll rates on the Legacy system, E-ZPass rates are the same on the I-95 ETLs for customers holding their accounts through MDTA and through other agencies. Video toll customers pay a 50 percent surcharge over the E-ZPass rate with a minimum of $1 and maximum of $15 above the E-ZPass rates. Pay-by-plate customers pay a rate that is in between video toll and E-ZPass customers.

Table 1-4
I-95 Express Toll Lane Toll Rates

Class	Existing Section (I-895 to MD 43)			Northbound Extension Phase 1 (MD 43 to MD 152)			Northbound Extension Phase 2 (MD 152 to MD 24)		
	Peak	Off-Peak	Overnight	Peak	Off-Peak	Overnight	Peak	Off-Peak	Overnight
E-ZPass Payment Type									
2-axle	$1.54	$1.19	$0.49	$1.54	$1.19	$0.49	$0.66	$0.51	$0.21
3-axle	$3.08	$2.38	$0.98	$3.08	$2.38	$0.98	$1.32	$1.02	$0.42
4-axle	$4.65	$3.57	$1.47	$4.65	$3.57	$1.47	$1.99	$1.53	$0.63
5-axle	$9.24	$7.14	$2.94	$9.24	$7.14	$2.94	$3.96	$3.06	$1.26
6-axle+	$11.55	$8.93	$3.68	$11.55	$8.93	$3.68	$4.95	$3.83	$1.58
Video Payment Type									
2-axle	$2.54	$2.19	$1.49	$2.54	$2.19	$1.49	$1.09	$0.94	$0.64
3-axle	$4.62	$3.57	$1.98	$4.62	$3.57	$1.98	$1.98	$1.53	$0.85
4-axle	$6.93	$5.36	$2.47	$6.93	$5.36	$2.47	$2.97	$2.30	$1.06
5-axle	$13.86	$10.71	$4.41	$13.86	$10.71	$4.41	$5.94	$4.59	$1.89
6-axle+	$17.33	$13.39	$5.51	$17.33	$13.39	$5.51	$7.43	$5.74	$2.36

Time Periods:

Peak Period is defined as southbound from 6:00 to 9:00 AM Mon to Fri, northbound from 3:00 to 7:00 PM Mon to Fri, and both directions from 12:00 to 2:00 PM Sat and 2:00 to 5:00 PM Sun.

Off-Peak Period is defined as southbound from 5:00 to 6:00 AM/9:00 AM to 9:00 PM Mon to Fri, northbound from 5:00 AM to 3:00 PM/7:00 to 9:00 PM Mon to Fri, and both directions from 5:00 AM to 12:00 PM/2:00 to 9:00 PM Sat and 5:00 AM to 2:00 PM/5:00 to 9:00 PM Sunday.

Overnight is defined as 9:00 PM to 5:00 AM every day.

1.2.2 COVID-19 Toll Rates and Business Rules

On March 17, 2020 MDTA implemented systemwide cashless tolling until further notice. Most other larger toll agencies in the United States that had the capability to do so also converted to cashless (also called all-electronic) tolling around this time to prevent the potential spread of COVID-19 during exchanges of cash at toll booths. The MDTA cashless program was implemented by applying video tolling at cash toll rates at facilities where cash is normally accepted. The MDTA cashless tolling was applied to five facilities, the Kennedy Highway, Harbor Tunnel, Fort McHenry Tunnel, Bay Bridge, and Nice/Middleton Bridge. The other four MDTA facilities, the Hatem Bridge, Key Bridge, ICC, and I-95 ETLs, already operated with cashless tolling before the pandemic. The

Bay Bridge was already being planned to convert to cashless tolling before the pandemic. This facility officially converted to permanent cashless tolling on May 12, 2020.

The cashless tolling implemented during the pandemic was initially announced as temporary. Permanent cashless tolling on all facilities was announced on August 6, 2020 to provide convenience for motorists, less engine idling for better fuel efficiency and reduced emissions, decreased congestion, and increased safety. However, cash toll rates for video customers were still charged on the Kennedy Highway, Harbor Tunnel, Fort McHenry Tunnel, Bay Bridge, and Nice/Middleton Bridge until January 1, 2021 when video toll rates were reinstated. Additionally, mailing of Notice of Toll Due (NOTD) video invoices was paused in March 2020 but was resumed in the fall of 2020.

Another change due to the pandemic in March 2020 was the extension of the time limits required to use trips for the Commuter and Shopper plans. Limits on these plans were reinstated on November 1, 2020.

1.2.3 Upcoming Toll Rate Changes

New vehicle class toll rate categories are planned that include lower toll rates. These new classes are motorcycles and certain three and four-axle vehicles, specifically "light" vehicles towing one and two-axle trailers such as those towing watercraft or landscaping equipment. Motorcycles will pay a 50 percent lower toll than current two-axle rates. Three and four-axle light vehicles will pay 25 and 17 percent, respectively, lower toll than current three and four-axle rates. The assumed implementation schedule for the new toll rates is provided in the assumptions in Chapter 4.

Except for the changes listed in the previous paragraph, no other future toll rate changes were assumed in this MDTA system forecast for the forecasting period through FY 2031.

1.2.4 Civil Penalties

Before the pandemic MDTA assessed a $50 Civil Penalty per unpaid transaction for drivers that did not pay their video tolls within 45 days. A reduction in the Civil Penalty amount from $50 to $25 per unpaid transaction began for all civil penalties assessed in FY 2021. The $25 Civil Penalty was also assumed for the remainder of the forecast.

1.3 Report Structure

Chapter 2, Historical Traffic and Revenue Trends, provides a summary of historical trends and variations of traffic and revenue on the Legacy bridges, tunnels, and highways operated by the MDTA, including recent trends due to the COVID-19 pandemic. Trends in different payment shares are also provided.

Chapter 3, Socioeconomic Review, provides a summary of updated historical trends and forecasts of socioeconomic variables to provide the context for the traffic and revenue growth projections. The socioeconomic trend review consisted of data collection including the compilation and updating of pertinent variables such as population, employment, income, gasoline prices, and real gross regional product from a number of public and private sources.

Chapter 4, Forecasts by Facility, provides a summary of the underlying assumptions and methodology used in the traffic and revenue forecasting process. Also presented in this Chapter are the 10-year traffic and revenue forecasts by facility and vehicle class for each of the MDTA facilities, including forecasted other revenue.

Chapter 5, Total Forecast Results, summarizes the forecasts for the MDTA system.

Chapter 6, Forecast Comparisons, provides a comparison of the updated forecasts to previous forecasts for the MDTA facilities.

Chapter 2
Historical Trends

This chapter includes analysis of historical traffic, revenue, and payment type trends on the MDTA facilities. Analysis of traffic trends on other routes in Maryland is also provided for context. Recent historical data is especially important as an input to developing the updated forecast documented in this report. One factor in this forecast update is an assessment of the latest traffic impacts due to the ongoing COVID-19 pandemic. As such, this chapter begins with discussion and analysis of impacts on traffic on the MDTA system due to COVID-19.

2.1 MDTA Traffic Impacts Due to COVID-19

The COVID-19 pandemic is impacting nearly all aspects of society and the economy, including travel. Beginning in March 2020, the pandemic caused significant reductions in transactions and revenue on toll facilities around the U.S., including on the MDTA system. **Table 2-1** provides COVID-19 pandemic-related traffic impact factors that were observed statistically or anecdotally during the first year of the pandemic and apply to MDTA traffic. As the pandemic situation improved in spring 2021, certain factors shown in **Table 2-1** that were observed in the first year of the pandemic changed. Some of these are driven by a quicker than expected increase in demand for travel and leisure activities in late spring and early summer 2021. For example, fuel prices increased significantly in spring 2021 driven especially by increasing demand. Also, longer-distance domestic vacation and leisure travel began to rebound very quickly. Commercial shipping activity, which had recovered to pre-pandemic levels in many sectors even by fall 2020, continues to be strong. This is partially driven by significant growth in e-commerce during the pandemic.

Looking to the future, in the short term the Delta variant of COVID-19 has slowed the recovery in recent months and is expected to continue to do so in fall 2021. For example, many employers have delayed the implementation of new work from home and travel policies in the past month. Also, the rapid recovery of leisure and vacation travel observed in spring and early summer 2021 appears to be slowing. In the medium and long-term impacts of several of the factors continue to be actively discussed and researched in the transportation industry, including related to transit usage, e-commerce, telecommuting, and residential and job location patterns.

The COVID-19 pandemic and its impacts on underlying socioeconomic factors related to MDTA traffic is discussed in more detail in Chapter 3.

Table 2-1
Potential COVID-19 Impact Factors Related to MDTA Traffic

Positive Traffic Impacts		Negative Traffic Impacts		Uncertain Traffic Impacts	
Passenger Cars	Commercial Vehicles	Passenger Cars	Commercial Vehicles	Passenger Cars	Commercial Vehicles
• Health concerns with transit causing shifts to vehicular travel in urban areas • Lower fuel prices • On-demand delivery services using personal vehicles including food	• Accelerated trends in e-commerce growth	• Reduced travel due to stay at home orders • Employment losses • Telecommuting • Ongoing avoidance of less-critical travel due to health concerns • Accelerated trends in e-commerce growth • Lower population growth due to lower immigration	• Less shipping activitiy and deliveries related to declines in economic activity	• Shifts to relatively more local vacation and leisure activity • Shifts in residential and job location patterns	• Supply chain changes, for example related to international trade

CDM Smith performed analysis using daily in-lane data from each of the MDTA facilities to determine impacts due to the COVID-19 pandemic. For the Legacy system, which includes several facilities with significant commercial vehicle usage, the analysis was conducted separately for passenger cars and commercial vehicles. The analysis methodology used is described below:

- The most recent raw daily in-lane traffic data for each of the MDTA facilities was obtained.
- Data by day for 2020 before the COVID-19 impact (from January to early March) was compared to similar data by day for 2019 to estimate the most recent actual 2019 to 2020 growth rate by facility (and passenger car versus commercial vehicle). Note that the 2019 to 2020 comparison was made by shifting the comparison dates to the same day of week rather than the same exact date. For example, Sunday March 1, 2020 was compared to Sunday March 3, 2019.
- The 2019 to 2020 pre-COVID-19 growth rates were applied to data by day from 2019 to the days corresponding to the 2020 days after the COVID-19 impact. This resulted in an estimate of 2020 traffic without the COVID-19 impact.
- Adjustments were made when necessary to better compare data. For example, the estimated 2020 without COVID-19 traffic was adjusted to account for the Easter weekend occurring at a different time in 2019 than 2020 and for Labor Day occurring earlier in September in 2019 compared to 2020, and for the Bay Bridge construction starting in late September 2019.
- The estimated 2020 and 2021 traffic was compared with actual 2020 and 2021 traffic on a seven-day rolling average basis to estimate an impact due to COVID-19. The overall analysis methodology accounts for seasonal impacts on traffic, which are significant on some MDTA facilities.

The results of the impact analysis are shown in three figures below. **Figure 2-1** shows the results for Legacy system passenger cars, **Figure 2-2** for Legacy system commercial vehicles, and **Figure 2-3** for the ICC and I-95 ETLs.

The most severe negative COVID-19 traffic impacts on all MDTA facilities was reached mid-April 2020. From mid-April through early July 2020, a rapid partial recovery occurred as Maryland reopened in a phased manner. From July through the end of the first quarter of FY 2021, impacts remained relatively stable, with Legacy passenger cars at about an average negative 18 percent impact and Legacy commercial vehicles at about a negative 3 percent impact. Commercial vehicles fully recovered in October 2020. Passenger car impacts became slightly more severe at the end of November and through December, corresponding with rising rates of new COVID-19 cases. Since February 2021, passenger car impacts have continued to improve. In the fourth quarter of FY 2021, impacts improved from negative 10 percent in April to negative 4 percent in June. Increases in local and long-distance travel for the summer and reductions in cases likely contributed to the improvement in impacts.

Figure 2-1
Legacy System Passenger Car Seven Day Rolling Average Impacts due to COVID-19

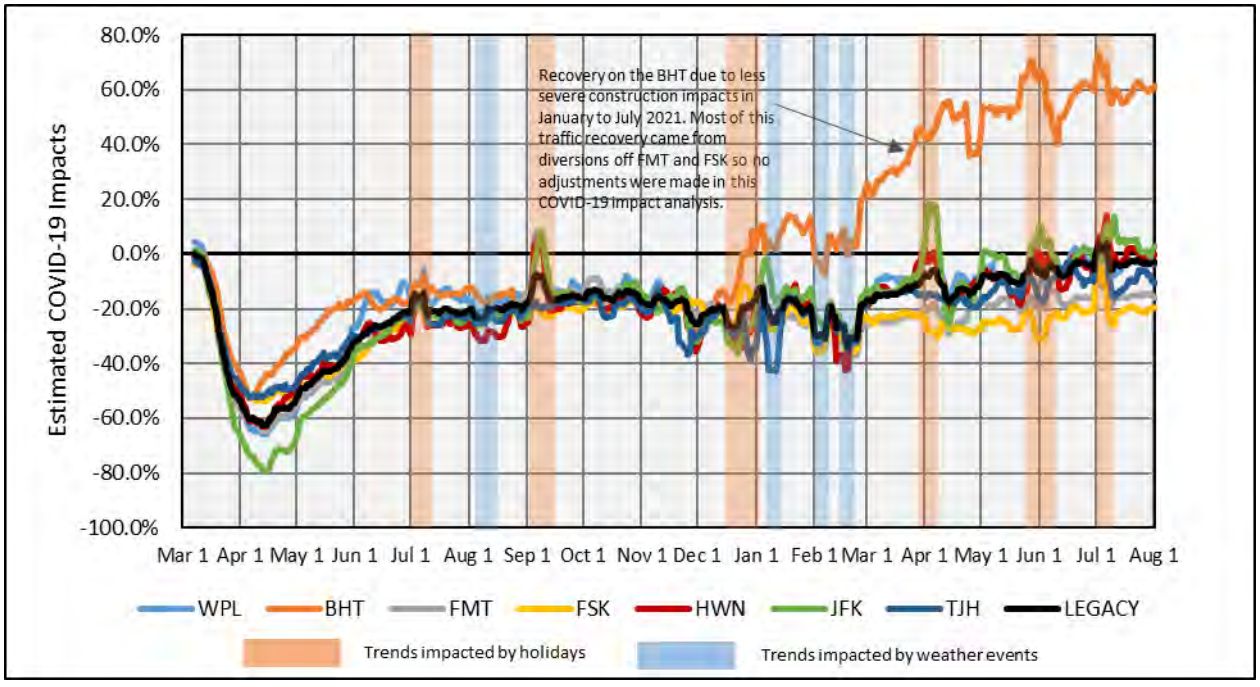


Figure 2-2
Legacy System Commercial Vehicle Seven Day Rolling Average Impacts due to COVID-19

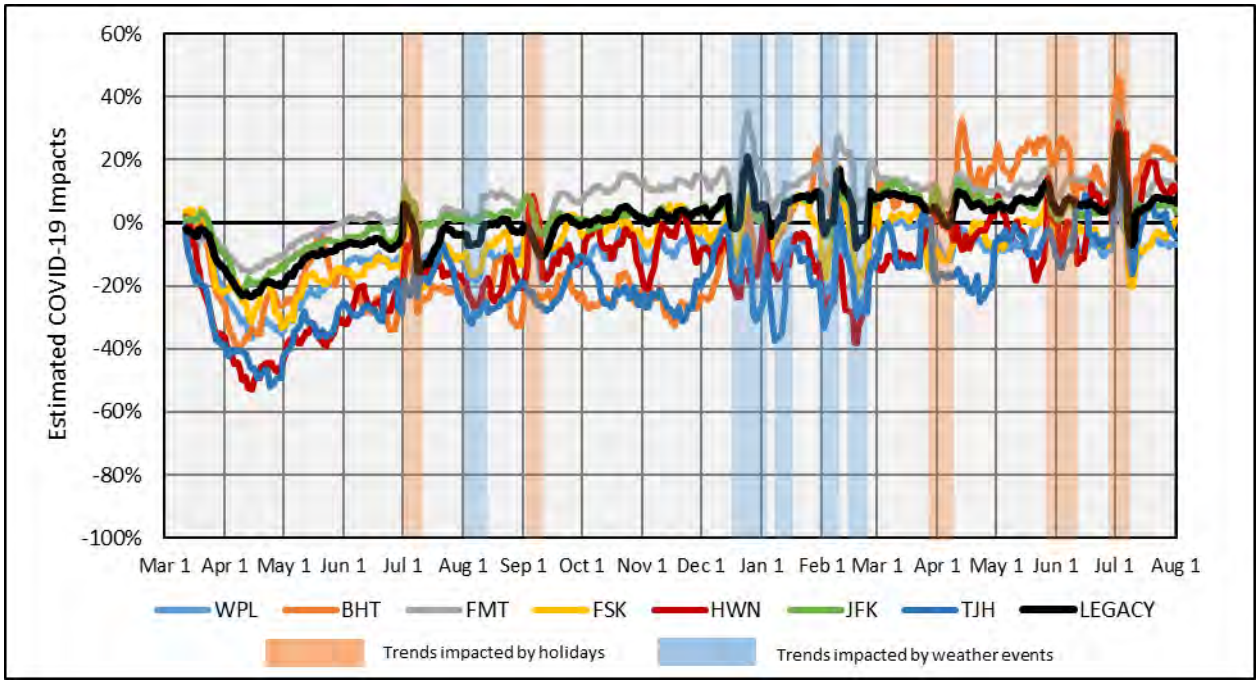
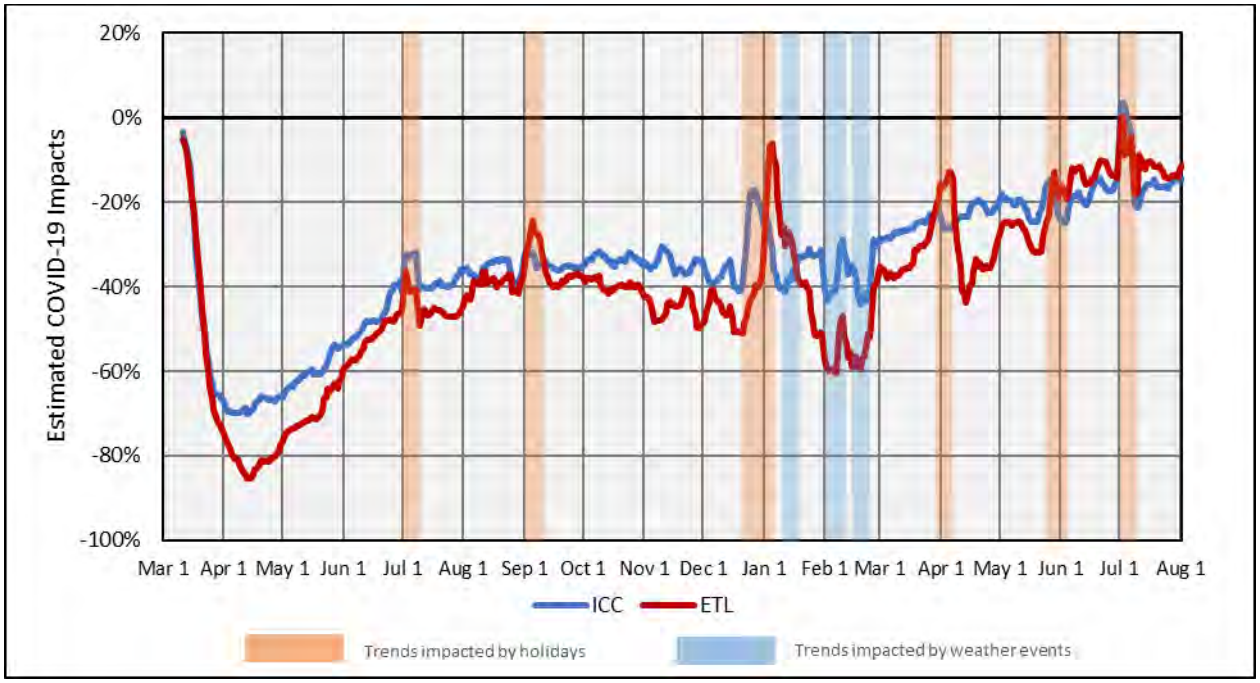


Figure 2-3
ICC and I-95 ETL Seven Day Rolling Average Impacts due to COVID-19



The ICC and I-95 ETL have experienced more severe negative impacts than the Legacy system through the duration of the pandemic. Relatively more severe impacts have also been observed on similar urban congestion relief-type facilities and priced managed lane-type facilities in other parts of the country. The ICC and I-95 ETLs showed a flattening of impacts through the first quarter of FY 2021, with the ICC averaging a negative 36 percent impact and the I-95 ETLs averaging a negative 40 percent impact. Similar to the Legacy facilities, there was an improvement in trends over the 4th of July and Labor Day holidays in 2020, primarily on the I-95 ETLs, which carries higher vacationing traffic due to its location on I-95/Kennedy Memorial Highway. Through the second quarter of FY 2021, impacts became more negative in December. Both facilities had a strong recovery in March, with the facilities averaging impacts of negative 26 and 33 percent for the ICC and I-95 ETLs, respectively. In the fourth quarter of FY 2021, both the ICC and I-95 ETLs had significant improvement in impacts, reaching negative 18 and negative 14 percent, respectively. Since March, the pace of recovery on these commuting-based congestion relief facilities has improved significantly, likely indicative of increasing return to work for employees who have been working remotely due to the pandemic and spring and early summer recreational travel.

Table 2-2 summarizes the average estimated COVID-19 impacts by month shown for each of the MDTA facilities.

Table 2-2
Summary of Estimated Average COVID-19 Impacts by Month

Calendar Year	Month	Legacy System Passenger Cars	Legacy System Commercial Vehicles	Intercounty Connector	I-95 ETL
2020	March	-19%	-4%	-27%	-29%
2020	April	-58%	-20%	-68%	-81%
2020	May	-43%	-11%	-60%	-70%
2020	June	-27%	-6%	-49%	-53%
2020	July	-20%	-5%	-38%	-45%
2020	August	-20%	-2%	-36%	-40%
2020	September	-14%	-3%	-35%	-35%
2020	October	-15%	2%	-33%	-40%
2020	November	-18%	2%	-35%	-45%
2020	December	-22%	6%	-33%	-45%
2021	January	-19%	5%	-34%	-32%
2021	February[(1)]	-27%	3%	-37%	-54%
2021	March	-14%	7%	-26%	-33%
2021	April	-12%	5%	-23%	-30%
2021	May	-8%	7%	-20%	-25%
2021	June	-5%	5%	-18%	-14%
2021	July	-2%	8%	-13%	-11%

[(1)] Impacts shown here for February 2021 were due to significant severe winter weather in addition to COVID-19.

2.2 Maryland Vehicle Miles Traveled

Vehicle miles traveled (VMT) trends were reviewed to better understand the general trends in traffic growth nationally and within Maryland. The Federal Highway Administration develops annual estimates of national and state-wide VMT by roadway type, which have been summarized in **Table 2-3** for years 2007 through 2020 for the United States (U.S.) and Maryland.

Total VMT growth trends for both Maryland and the U.S. have been generally similar during the Great Recession impacted years (2007 to 2009) and years following (2009 to 2019). In general, the trends indicate that total national and statewide Maryland VMT growth is similar. However, growth on Maryland's Interstate highways has been much lower than the U.S. average between 2009 and 2019, at 0.6 percent per annum versus 1.5 percent per annum, respectively. Growth in the last decade on the Maryland interstate system is still occurring, albeit at a lower rate than the nation. The percent of total VMT occurring on Interstate routes has remained relatively constant throughout the past 13 years. Approximately 25 percent of national VMT and 30 percent of Maryland VMT are made on interstate routes, which account for 2.5 percent and 3.9 percent of all roads in the nation and Maryland, respectively. In 2020, due to travel restrictions and stay-at-home mandates from the COVID-19 pandemic, interstate VMT in the United States and Maryland both declined by 15.8 percent.

These trends in VMT since 2007 are different from pre-2007 long-term historical trends (not shown on this table). Before the mid-2000s, VMT had been growing regionally and nationally by about 2 percent per year. In the years following the Great Recession VMT growth was about half of this, at 0.9 percent nationally and 0.8 percent in Maryland. These changes are indicative of changes in travel driven by underlying socioeconomic factors in Maryland and the U.S. Similar to the changes observed after the Great Recession, the potential for long-term changes in travel due to the ongoing COVID-19 pandemic will continue to be closely monitored.

Table 2-3

National and Statewide Trends in Vehicle Miles Traveled

Calendar Year	United States [1]					Maryland				
	Interstate			Total		Interstate			Total	
	VMT (Millions)	Percent Change	Percent of Total	VMT (Millions)	Percent Change	VMT (Millions)	Percent Change	Percent of Total	VMT (Millions)	Percent Change
2007	745,457	-	24.4	3,049,027	-	17,015	-	30.1	56,503	-
2008	725,078	(2.7)	24.2	2,992,705	(1.8)	16,710	(1.8)	30.4	55,023	(2.6)
2009	722,655	(0.3)	24.3	2,975,804	(0.6)	16,965	1.5	30.7	55,293	0.5
2010	729,015	0.9	24.4	2,985,854	0.3	17,040	0.4	30.4	56,126	1.5
2011	725,787	(0.4)	24.4	2,968,990	(0.6)	16,964	(0.4)	30.2	56,221	0.2
2012	735,915	1.4	24.6	2,988,021	0.6	17,054	0.5	30.2	56,475	0.5
2013	745,106	1.2	24.8	3,006,911	0.6	17,064	0.1	30.1	56,688	0.4
2014	756,374	1.5	24.9	3,040,220	1.1	17,057	(0.0)	30.2	56,432	(0.5)
2015	782,111	3.4	25.1	3,109,937	2.3	17,102	0.3	29.7	57,516	1.9
2016	810,264	3.6	25.4	3,188,972	2.5	17,584	2.8	29.7	59,137	2.8
2017	824,910	1.8	25.6	3,227,358	1.2	17,937	2.0	29.9	59,892	1.3
2018	833,803	1.1	25.6	3,255,347	0.9	17,928	(0.1)	30.0	59,775	(0.2)
2019	842,604	1.1	25.7	3,276,482	0.6	18,058	0.7	30.0	60,216	0.7
2020 [2]	709,091	(15.8)	25.1	2,829,705	(13.6)	15,202	(15.8)	30.0	50,703	(15.8)
Average Annual Percent Change										
2007 to 2009		(1.5)			(1.2)		(0.1)			(1.1)
2009 to 2019		1.5			1.0		0.6			0.8

2005-2019 VMT Data source: Table VM-2, Highway Statistics 1994-2017, USDOT FHWA Office of Policy Information.

2020 VMT Data source: Monthly Travel Volume Trends Reports, USDOT FHWA Office of Policy Information.

[1] Includes Puerto Rico.

[2] Interstate-level VMT data for Maryland unavailable for 2019, and was estimated on the average of 2017 and 2018 interstate miles as a percent of total VMT.

2.3 MDTA Traffic and Revenue Trends

2.3.1 Collected Transactions and Revenue

This section provides a review of the historical collected toll transaction/trip trends and toll revenue trends for each of the seven MDTA Legacy facilities, I-95 Express Toll Lanes (ETLs), and the Intercounty Connector (ICC). Toll revenue is the revenue that is collected by transponder or by various forms of video payment (and formerly by in-lane cash payment) for payment of published toll rates. Other revenue includes a combination of revenue collected and revenue deductions from unused Commuter Plan and Shoppers Plan trips, transponder fees and sales, the Hatem Bridge E-ZPass® program, violation recovery (civil penalties), and commercial vehicle fees and discounts (post-usage discount, high frequency discount, and over-sized permit fees). The historical transaction/trip and revenue trends by facility for passenger cars, commercial vehicles and total traffic are presented by fiscal year in **Table 2-4**, **Table 2-5**, and **Table 2-6**, respectively. The historical transaction/trip and revenue trends for total vehicles by facility are graphically presented in **Figure 2-4.** Despite a strong recovery for raw, in-lane traffic in FY 2021 from the pandemic as shown previously in the COVID-19 impact trends, collected transactions and revenue continued to be down due to collection challenges related to the back office transition.

Table 2-4
MDTA Passenger Car Historic Collected Transactions and Toll Revenue

Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL [1]	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
Passenger Car Transactions (in millions)																		
2007	5.286	-	12.874	-	24.891	-	40.945	-	10.970	-	12.409	-	3.112	-	-	-	-	-
2008	5.296	0.2	12.722	(1.2)	24.921	0.1	40.879	(0.2)	11.093	1.1	12.312	(0.8)	3.107	(0.2)	-	-	-	-
2009	4.942	(6.7)	12.794	0.6	24.795	(0.5)	39.851	(2.5)	10.601	(4.4)	11.902	(3.3)	3.097	(0.3)	-	-	-	-
2010	4.890	(1.1)	12.977	1.4	24.553	(1.0)	40.583	1.8	9.953	(6.1)	12.093	1.6	3.134	1.2	-	-	-	-
2011	4.961	1.4	13.565	4.5	25.397	3.4	42.704	5.2	10.587	6.4	12.608	4.3	3.181	1.5	-	-	-	-
2012	4.884	(1.5)	13.154	(3.0)	25.113	(1.1)	41.103	(3.7)	10.048	(5.1)	12.766	1.3	3.100	(2.5)	-	-	-	-
2013	4.391	(10.1)	12.912	(1.8)	23.414	(6.8)	40.116	(2.4)	9.982	(0.7)	11.865	(7.1)	3.071	(0.9)	-	-	-	-
2014	4.779	8.8	12.690	(1.7)	24.325	3.9	38.290	(4.6)	9.427	(5.6)	11.878	0.1	3.040	(1.0)	-	-	-	-
2015	5.064	6.0	13.022	2.6	26.517	9.0	38.353	0.2	9.632	2.2	12.008	1.1	3.095	1.8	-	-	-	-
2016	4.880	(3.6)	13.401	2.9	27.653	4.3	38.876	1.4	10.185	5.7	12.398	3.2	3.172	2.5	-	-	-	-
2017	4.893	0.3	13.745	2.6	26.974	(2.5)	41.381	6.4	10.257	0.7	12.692	2.4	3.209	1.2	31.758	-	8.614	-
2018	4.881	(0.2)	13.576	(1.2)	27.327	1.3	40.546	(2.0)	10.330	0.7	12.631	(0.5)	3.123	(2.7)	33.433	5.3	8.915	3.5
2019	4.869	(0.2)	13.316	(1.9)	20.254	(25.9)	43.955	8.4	11.674	13.0	12.706	0.6	3.104	(0.6)	35.231	5.4	9.331	4.7
2020	4.182	(14.1)	10.669	(19.9)	13.709	(32.3)	38.242	(13.0)	10.793	(7.5)	10.723	(15.6)	2.571	(17.2)	31.850	(9.6)	7.341	(21.3)
2021	2.868	(31.4)	7.287	(31.7)	11.489	(16.2)	25.709	(32.8)	7.490	(30.6)	7.799	(27.3)	1.591	(38.1)	10.511	(67.0)	4.783	(34.9)
Passenger Car Revenue (in millions of dollars)																		
2007	1.119	-	58.915	-	29.926	-	56.924	-	10.805	-	24.652	-	7.154	-	-	-	-	-
2008	1.242	11.1	58.013	(1.5)	30.320	1.3	56.381	(1.0)	10.822	0.2	24.452	(0.8)	7.055	(1.4)	-	-	-	-
2009	1.255	1.0	58.467	0.8	30.840	1.7	55.224	(2.1)	10.512	(2.9)	23.740	(2.9)	7.020	(0.5)	-	-	-	-
2010	1.468	16.9	59.246	1.3	31.141	1.0	57.211	3.6	10.299	(2.0)	24.510	3.2	7.190	2.4	-	-	-	-
2011	1.622	10.5	59.906	1.1	31.856	2.3	58.288	1.9	10.658	3.5	25.105	2.4	7.233	0.6	-	-	-	-
2012	2.354	45.1	67.640	12.9	42.558	33.6	75.089	28.8	13.800	29.5	31.786	26.6	8.589	18.7	-	-	-	-
2013	3.993	69.6	73.602	8.8	46.871	10.1	87.559	16.6	16.450	19.2	36.113	13.6	9.577	11.5	-	-	-	-
2014	5.007	25.4	94.931	29.0	69.466	48.2	114.982	31.3	22.863	39.0	54.346	50.5	14.616	52.6	-	-	-	-
2015	5.113	2.1	97.301	2.5	77.033	10.9	115.294	0.3	24.330	6.4	55.630	2.4	15.198	4.0		-	-	-
2016	5.279	3.2	98.677	1.4	80.650	4.7	115.994	0.6	24.474	0.6	35.598	(36.0)	15.156	(0.3)	54.197	-	10.054	-
2017	5.619	6.5	101.363	2.7	80.207	(0.5)	124.262	7.1	25.478	4.1	36.562	2.7	15.419	1.7	58.795	8.5	10.765	7.1
2018	5.215	(7.2)	100.008	(1.3)	81.602	1.7	121.604	(2.1)	25.670	0.8	36.294	(0.7)	14.947	(3.1)	61.320	4.3	11.055	2.7
2019	5.298	1.6	97.883	(2.1)	61.575	(24.5)	132.376	8.9	29.335	14.3	36.714	1.2	14.897	(0.3)	62.688	2.2	11.529	4.3
2020	4.852	(8.4)	77.730	(20.6)	40.715	(33.9)	113.816	(14.0)	26.513	(9.6)	30.174	(17.8)	12.012	(19.4)	51.830	(17.3)	8.820	(23.5)
2021	3.377	(30.4)	52.666	(32.2)	32.941	(19.1)	74.337	(34.7)	18.388	(30.6)	20.418	(32.3)	7.279	(39.4)	18.146	(65.0)	5.804	(34.2)

[1] Data for the ICC and I-95 ETL are presented beginning in FY 2017 for trips and FY 2016 for revenue due to vehicle class availability in data reporting. ICC transactions reported are trips.

Table 2-5
MDTA Commercial Vehicle Historic Collected Transactions and Toll Revenue

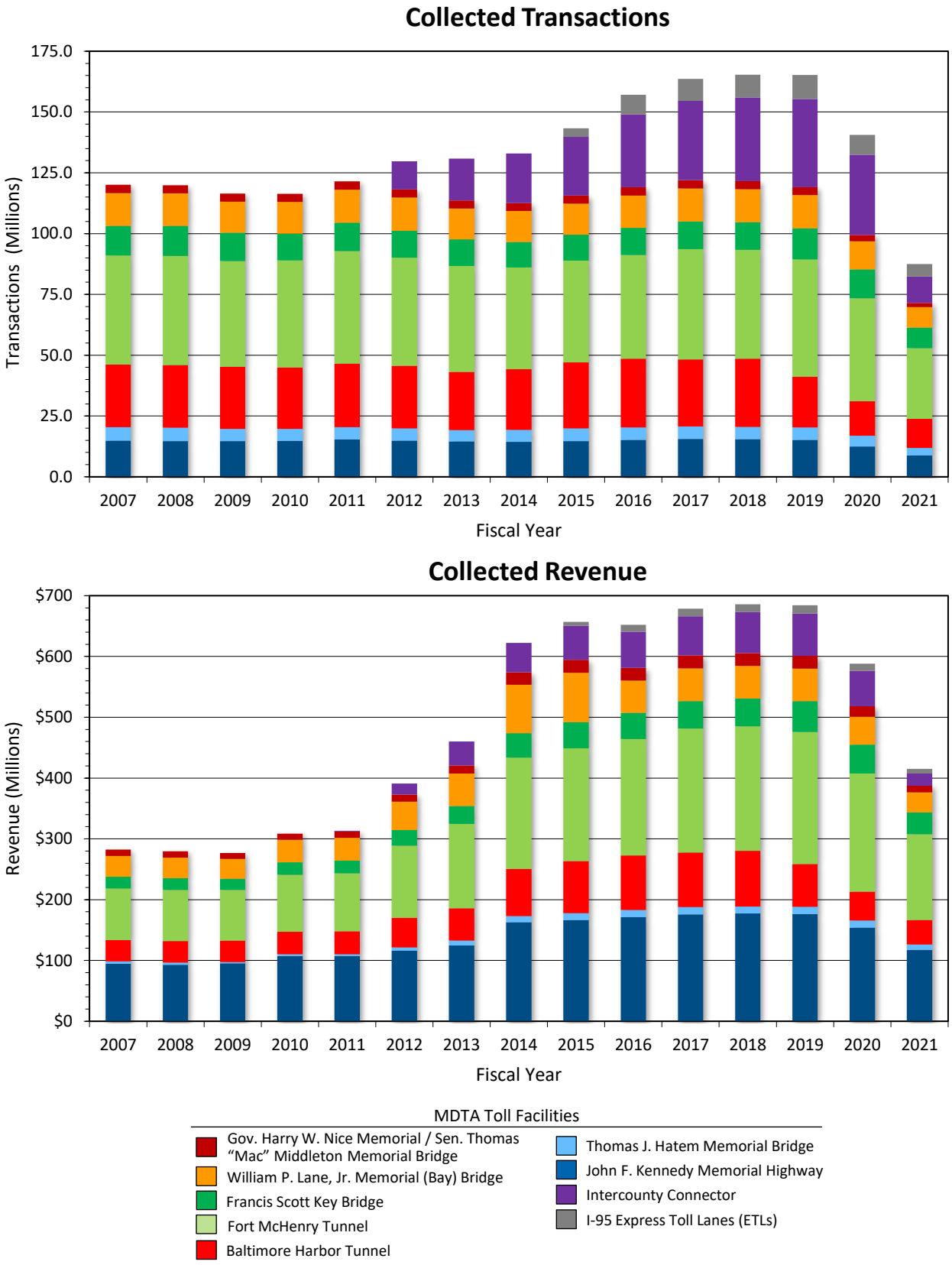
Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL [1]	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
Commercial Vehicle Transactions (in millions)																		
2007	0.276	-	1.966	-	0.849	-	3.909	-	1.233	-	1.086	-	0.306	-	-	-	-	-
2008	0.260	(5.6)	1.930	(1.8)	0.850	0.1	3.950	1.1	1.250	1.3	1.058	(2.5)	0.284	(7.3)	-	-	-	-
2009	0.098	(62.1)	1.848	(4.2)	0.739	(13.1)	3.595	(9.0)	1.087	(13.0)	0.850	(19.7)	0.250	(12.0)	-	-	-	-
2010	0.103	4.9	1.773	(4.1)	0.672	(9.0)	3.480	(3.2)	1.006	(7.5)	0.901	6.0	0.220	(12.1)	-	-	-	-
2011	0.110	6.3	1.810	2.1	0.720	7.1	3.590	3.2	1.060	5.4	0.950	5.4	0.220	0.1	-	-	-	-
2012	0.150	36.6	1.670	(7.7)	0.637	(11.6)	3.420	(4.7)	1.000	(5.7)	0.900	(5.3)	0.190	(13.6)	-	-	-	-
2013	0.172	15.0	1.670	-	0.558	(12.3)	3.460	1.2	0.940	(6.0)	0.871	(3.2)	0.190	-	-	-	-	-
2014	0.169	(1.8)	1.687	1.0	0.568	1.6	3.586	3.6	0.993	5.6	0.881	1.1	0.203	7.0	-	-	-	-
2015	0.182	7.3	1.668	(1.1)	0.580	2.2	3.494	(2.6)	0.995	0.2	0.847	(3.8)	0.211	3.5	-	-	-	-
2016	0.210	15.6	1.762	5.7	0.633	9.1	3.763	7.7	1.010	1.5	0.874	3.2	0.209	(0.6)	-	-	-	-
2017	0.210	(0.2)	1.803	2.3	0.639	0.8	3.999	6.3	1.054	4.4	0.895	2.4	0.210	0.5	0.875	-	0.400	-
2018	0.205	(2.3)	1.875	4.0	0.685	7.3	4.174	4.4	1.096	3.9	0.887	(0.8)	0.203	(3.7)	0.968	10.6	0.478	19.5
2019	0.220	7.3	1.889	0.7	0.585	(14.6)	4.292	2.8	1.153	5.2	0.887	(0.1)	0.211	4.0	1.056	9.1	0.538	12.5
2020	0.212	(3.7)	1.830	(3.1)	0.459	(21.5)	4.055	(5.5)	1.142	(0.9)	0.824	(7.1)	0.183	(13.3)	1.096	3.8	0.448	(16.6)
2021	0.185	(12.8)	1.542	(15.8)	0.442	(3.7)	3.328	(17.9)	0.947	(17.1)	0.656	(20.3)	0.123	(32.5)	0.366	(66.6)	0.359	(19.9)
Commercial Vehicle Revenue (in millions)																		
2007	2.699	-	35.704	-	5.183	-	27.761	-	8.437	-	9.741	-	3.277	-	-	-	-	-
2008	2.652	(1.7)	34.695	(2.8)	5.007	(3.4)	27.652	(0.4)	8.586	1.8	9.427	(3.2)	3.024	(7.7)	-	-	-	-
2009	0.811	(69.4)	36.671	5.7	4.770	(4.7)	27.746	0.3	8.051	(6.2)	8.770	(7.0)	2.750	(9.1)	-	-	-	-
2010	1.145	41.2	48.103	31.2	5.869	23.0	36.809	32.7	10.238	27.2	12.284	40.1	2.956	7.5	-	-	-	-
2011	1.197	4.5	47.484	(1.3)	5.995	2.1	37.029	0.6	10.117	(1.2)	12.512	1.9	2.916	(1.4)	-	-	-	-
2012	2.896	142.0	48.370	1.9	6.176	3.0	43.730	18.1	12.020	18.8	14.956	19.5	3.011	3.3	-	-	-	-
2013	3.972	37.2	51.104	5.7	6.203	0.5	51.125	16.9	13.170	9.6	17.263	15.4	3.588	19.1	-	-	-	-
2014	5.168	30.1	67.872	32.8	8.093	30.5	68.147	33.3	17.396	32.1	25.410	47.2	5.781	61.1	-	-	-	-
2015	6.076	17.6	69.234	2.0	8.505	5.1	70.486	3.4	18.645	7.2	25.529	0.5	6.214	7.5		-		-
2016	6.524	7.4	72.499	4.7	9.222	8.4	75.293	6.8	18.805	0.9	17.193	(32.7)	6.047	(2.7)	5.116	-	1.331	-
2017	6.468	(0.9)	74.448	2.7	9.254	0.3	79.920	6.1	19.464	3.5	17.399	1.2	6.046	(0.0)	5.522	7.9	1.713	28.7
2018	6.368	(1.6)	77.192	3.7	9.786	5.8	83.458	4.4	20.208	3.8	17.136	(94.9)	5.794	(4.2)	6.190	12.1	2.093	22.2
2019	6.874	8.0	78.103	1.2	8.690	(11.2)	85.073	1.9	21.196	4.9	17.030	(0.1)	6.072	4.8	6.627	7.1	2.392	14.3
2020	6.534	(5.0)	76.356	(2.2)	6.794	(21.8)	80.530	(5.3)	21.036	(0.8)	15.823	(7.1)	5.307	(12.6)	6.312	(4.8)	1.931	(19.3)
2021	5.806	(11.1)	64.566	(15.4)	6.906	1.6	67.193	(16.6)	17.360	(17.5)	12.625	(20.2)	3.532	(33.4)	2.463	(61.0)	1.871	(3.1)

[1] Data for the ICC and I-95 ETL are presented beginning in FY 2017 for trips and FY 2016 for revenue due to vehicle class availability in data reporting. ICC transactions reported are trips.

Table 2-6
MDTA Total Traffic Historic Collected Transactions and Toll Revenue

Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
Total Transactions (in millions)																		
2007	5.561	-	14.840	-	25.740	-	44.854	-	12.203	-	13.494	-	3.418	-	-	-	-	-
2008	5.556	(0.1)	14.652	(1.3)	25.771	0.1	44.829	(0.1)	12.343	1.1	13.370	(0.9)	3.391	(0.8)	-	-	-	-
2009	5.040	(9.3)	14.642	(0.1)	25.534	(0.9)	43.446	(3.1)	11.688	(5.3)	12.752	(4.6)	3.347	(1.3)	-	-	-	-
2010	4.993	(0.9)	14.750	0.7	25.226	(1.2)	44.063	1.4	10.959	(6.2)	12.994	1.9	3.354	0.2	-	-	-	-
2011	5.070	1.5	15.375	4.2	26.117	3.5	46.294	5.1	11.647	6.3	13.558	4.3	3.401	1.4	-	-	-	-
2012	5.034	(0.7)	14.824	(3.6)	25.750	(1.4)	44.523	(3.8)	11.048	(5.1)	13.666	0.8	3.290	(3.3)	11.562	-	-	-
2013	4.563	(9.4)	14.582	(1.6)	23.973	(6.9)	43.576	(2.1)	10.922	(1.1)	12.736	(6.8)	3.261	(0.9)	17.198	48.7	-	-
2014	4.948	8.4	14.377	(1.4)	24.893	3.8	41.875	(3.9)	10.419	(4.6)	12.759	0.2	3.243	(0.6)	20.476	19.1	-	-
2015	5.246	6.0	14.690	2.2	27.098	8.9	41.847	(0.1)	10.627	2.0	12.856	0.8	3.305	1.9	24.118	17.8	3.483	-
2016	5.090	(3.0)	15.163	3.2	28.287	4.4	42.639	1.9	11.195	5.3	13.272	3.2	3.381	2.3	29.975	24.3	8.048	131.0
2017	5.102	0.2	15.548	2.5	27.612	(2.4)	45.380	6.4	11.311	1.0	13.587	2.4	3.419	1.1	32.634	8.9	9.014	12.0
2018	5.086	(0.3)	15.451	(0.6)	28.012	1.4	44.720	(1.5)	11.425	1.0	13.518	(0.5)	3.325	(2.8)	34.401	5.4	9.393	4.2
2019	5.089	0.1	15.205	(1.6)	20.839	(25.6)	48.247	7.9	12.827	12.3	13.593	0.5	3.315	(0.3)	36.287	5.5	9.868	5.1
2020	4.394	(13.6)	12.499	(17.8)	14.168	(32.0)	42.297	(12.3)	11.935	(6.9)	11.547	(15.1)	2.753	(16.9)	32.946	(9.2)	7.789	(21.1)
2021	3.052	(30.5)	8.829	(29.4)	11.931	(15.8)	29.037	(31.3)	8.437	(29.3)	8.456	(26.8)	1.714	(37.8)	10.877	(67.0)	5.142	(34.0)
Total Revenue (in millions of dollars)																		
2007	3.817	-	94.619	-	35.109	-	84.685	-	19.243	-	34.393	-	10.432	-	-	-	-	-
2008	3.894	2.0	92.707	(2.0)	35.328	0.6	84.032	(0.8)	19.408	0.9	33.879	(1.5)	10.079	(3.4)	-	-	-	-
2009	2.066	(46.9)	95.138	2.6	35.610	0.8	82.970	(1.3)	18.563	(4.4)	32.510	(4.0)	9.770	(3.1)	-	-	-	-
2010	2.613	26.5	107.349	12.8	37.010	3.9	94.020	13.3	20.537	10.6	36.794	13.2	10.146	3.8	-	-	-	-
2011	2.819	7.9	107.390	0.0	37.851	2.3	95.316	1.4	20.775	1.2	37.617	2.2	10.149	0.0	1.474	-	-	-
2012	5.250	86.2	116.010	8.0	48.734	28.8	118.819	24.7	25.820	24.3	46.742	24.3	11.601	14.3	18.063	1,125.4	-	-
2013	7.966	51.7	124.706	7.5	53.074	8.9	138.684	16.7	29.619	14.7	53.376	14.2	13.165	13.5	39.586	119.2	-	-
2014	10.174	27.7	162.803	30.5	77.559	46.1	183.130	32.0	40.260	35.9	79.756	49.4	20.397	54.9	48.029	21.3	-	-
2015	11.189	10.0	166.535	2.3	85.538	10.3	185.780	1.4	42.975	6.7	81.159	1.8	21.412	5.0	56.018	16.6	6.146	-
2016	11.803	5.5	171.176	2.8	89.872	5.1	191.287	3.0	43.279	0.7	52.791	(35.0)	21.203	(1.0)	59.312	5.9	11.385	85.3
2017	12.087	2.4	175.811	2.7	89.461	(0.5)	204.182	6.7	44.942	3.8	53.960	2.2	21.465	1.2	64.317	8.4	12.478	9.6
2018	11.582	(4.2)	177.199	0.8	91.388	2.2	205.063	0.4	45.878	2.1	53.429	(1.0)	20.741	(3.4)	67.511	5.0	13.148	5.4
2019	12.172	5.1	175.987	(0.7)	70.265	(23.1)	217.449	6.0	50.531	10.1	53.744	0.6	20.968	1.1	69.316	2.7	13.921	5.9
2020	11.386	(6.5)	154.086	(12.4)	47.509	(32.4)	194.346	(10.6)	47.549	(5.9)	45.997	(14.4)	17.319	(17.4)	58.142	(16.1)	10.751	(22.8)
2021	9.184	(19.3)	117.231	(23.9)	39.847	(16.1)	141.531	(27.2)	35.748	(24.8)	33.042	(28.2)	10.811	(37.6)	20.609	(64.6)	7.675	(28.6)

[1] ICC transactions reported are trips.



HISTORICAL COLLECTED TRANSACTIONS AND COLLECTED TOLL REVENUE BY FACILITY

FIGURE 2-4

Table 2-7 summarizes the average annual percent change in passenger car and commercial vehicle transactions and revenue trends by facility during the Great Recession years (FY 2007 to 2009) and post-recession years (FY 2009 to 2019) for the Legacy facilities based on the data provided in **Table 2-4** and **Table 2-5**. For all facilities, including the ICC and I-95 ETL, average annual percent change in passenger car and commercial vehicles transactions/trips and revenue are shown for the period from 2017 to 2019 due to data by vehicle class availability for the ICC and I-95 ETLs. FY 2019 to 2021 is shown for all facilities to show the period impacted by the COVID-19 pandemic, cashless conversion, and back office transition.

Table 2-7
Average Annual Percent Change in Collected Transactions and Revenue by Facility

Fiscal Year	Hatem Bridge	Kennedy Highway	Harbor Tunnel	Fort McHenry Tunnel	Key Bridge	Bay Bridge	Nice/ Middleton Bridge	ICC [1]	I-95 ETL [1]
Passenger Car Transactions (in millions)									
2007 to 2009	(3.3)	(0.3)	(0.2)	(1.3)	(1.7)	(2.1)	(0.2)	-	-
2009 to 2019	(0.1)	0.4	(2.0)	1.0	1.0	0.7	0.0	-	-
2017 to 2019	(0.2)	(1.6)	(13.3)	3.1	6.7	0.1	(1.6)	5.3	4.1
2019 to 2021	(23.3)	(26.0)	(24.7)	(23.5)	(19.9)	(21.7)	(28.4)	(45.4)	(28.4)
Passenger Car Revenue (in millions of dollars)									
2007 to 2009	14.8	(1.0)	3.8	(3.8)	(3.4)	(4.7)	(2.4)	-	-
2009 to 2019	38.7	13.2	17.9	22.8	27.0	11.1	19.5	-	-
2017 to 2019	(2.9)	(1.7)	(12.4)	3.2	7.3	0.2	(1.7)	3.3	3.5
2019 to 2021	(20.2)	(26.6)	(26.9)	(25.1)	(20.8)	(25.4)	(30.1)	(47.0)	(29.0)
Commercial Vehicle Transactions (in millions)									
2007 to 2009	(40.2)	(3.0)	(6.7)	(4.1)	(6.1)	(11.5)	(9.7)	-	-
2009 to 2019	8.4	0.2	(2.3)	1.8	0.6	0.4	(1.7)	-	-
2017 to 2019	2.4	2.3	(4.3)	3.6	4.6	(0.4)	0.1	9.8	16.0
2019 to 2021	(8.3)	(9.7)	(13.1)	(11.9)	(9.4)	(14.0)	(23.5)	(41.1)	(18.2)
Commercial Vehicle Revenue (in millions of dollars)									
2007 to 2009	(112.9)	3.4	(10.2)	(0.1)	(5.8)	(12.8)	(21.0)	-	-
2009 to 2019	59.6	19.6	15.5	29.6	25.4	17.2	20.6	-	-
2017 to 2019	3.1	2.4	(3.1)	3.2	4.4	(1.1)	0.2	9.6	18.2
2019 to 2021	(8.1)	(9.1)	(10.9)	(11.1)	(9.5)	(13.9)	(23.7)	(39.8)	(11.6)

[1] AAPC for ICC and I-95 ETL transactions/trips and revenue presented beginning FY 2017 due to vehicle class data availability.

As shown in **Table 2-7**, between FY 2007 and FY 2009, the passenger car transactions decreased on all seven legacy facilities, with the largest decrease of 3.3 percent per annum on the Hatem bridge. The smallest decrease in passenger car transactions during this period was 0.2 percent per annum on the Harbor Tunnel and Nice/Middleton Bridge. The commercial vehicle transactions decreased significantly between FY 2007 and FY 2009 on all the legacy facilities, with the largest decrease of 40.2 percent per annum on the Hatem Bridge. Following these decreases associated with the Great Recession, continued economic uncertainty and several toll increases resulted in the total Legacy system transactions decreasing by 3.4 percent from 116.5 million in FY 2009 to 112.5 million in FY 2014. Due to the toll increases, the Legacy system revenue grew from about 277 million in FY 2009 to 595 million in FY 2015. Total transactions

increased by 2.8 percent in FY 2015 reaching FY 115.7 million, mostly due to the high growth on Hatem Bridge and Baltimore Harbor Tunnel, where transactions increased by 6.0 percent and 8.9 percent respectively, compared to FY 2014. Similarly, the Legacy system transactions grew by 2.9 percent in FY 2016 and 2.5 percent in FY 2017 compared to previous years. The revenue decreased in FY 2016 by 2.2 percent due to the toll decrease implemented on July 1, 2015. The traffic increases between FY 2015 and FY 2017 on the system were the result of strong economic performance and the FY 2016 toll decrease. This upward trend came to an end in FY 2018, when the system transactions decreased by 0.3 percent. In FY 2019, the transactions decreased further by 2.0 percent, driven especially by the 25.6 drop in transactions on the Baltimore Harbor Tunnel due to construction. Revenue followed a similar trend decreasing by 2.1 percent and 0.7 percent in FY 2018 and FY 2019 respectively. Overall, between FY 2009 and FY 2019, the total legacy system transactions increased by 0.2 percent per annum and revenue increased by 7.8 per annum. Beginning in March 2020, the COVID-19 pandemic caused significant reductions in traffic on the MDTA system. This has caused the FY 2020 Legacy system transaction to decrease by 16.5 percent and revenue to decrease by 13.8 percent compared to FY 2019. In FY 2021, ongoing pandemic impacts, back office transition collection issues, and the conversion to cashless tolling have caused a further 28.2 percent decline over FY 2020.

For the Intercounty Connector, tolling began on the second segment of the ICC from MD-97/Georgia Avenue to I-95 in FY 2012, making FY 2013 the first full fiscal year of I-370 to I-95 operations on the ICC. Trips then increased by 19.1 percent in FY 2014. This was due primarily to facility "ramp-up," when motorists adjust their travel patterns over time as they become aware of a new facility and the benefits that it offers over their current route of travel. This ramp-up period continued into FY 2015, with a 17.8 percent growth in trips and a 16.6 percent growth in toll revenue. FY 2015 growth also included the opening of the final segment of the ICC in November 2014; a 1.53-mile extension on the eastern end between I-95 and US 1. Trips in FY 2016 grew at a faster rate than FY 2015, which can be attributed in part to the toll reduction implemented on July 1, 2015. Toll revenue for FY 2016 was 5.9 percent higher than FY 2015, which reflects continued robust growth in trips offset in part by the negative revenue impact of the lower tolls. Trips growth for FY 2017 was strong at 8.9 percent. FY 2018 and FY 2019 had trips growth at 5.4 and 5.5 percent, respectively. This strong growth is likely due to increasing regional population and employment as well as the ICC serving as a congestion relief route as an uncongested facility in a region where congestion is growing. As was seen with the Legacy facilities, due to the COVID-19 pandemic, there was a 9.2 decrease in trips and 16.1 percent decrease in revenue in FY 2020 compared to FY 2019. FY 2021 transactions and revenue were 67 and 65.6 percent lower than FY 2021, respectively, due to ongoing pandemic impacts, back office transition collection issues, and the conversion to cashless tolling.

The I-95 ETLs opened in FY 2015, and FY 2016 was the first full fiscal year of operations. In FY 2017, transactions and revenue on the ETLs increased by 12.0 percent and 9.6 percent, respectively, compared to FY 2016. This was due primarily to facility ramp-up, the phenomenon that occurs with the opening of a new facility as explained above. This growth continued in FY 2018 and FY 2019, when transactions increased by 4.2 percent and 5.1 percent, respectively, over their previous years. Revenue grew at slightly higher levels than transactions with a 5.4 percent growth in FY 2018 and 5.9 percent growth in FY 2019. Due to COVID-19 pandemic, FY 2020 transactions and revenue decreased significantly by 21.1 percent and 22.8 percent, respectively,

compared to FY 2019. Ongoing pandemic impacts, back office transition collection issues, and the conversion to cashless tolling, caused FY 2021 transactions to be 34 percent lower than FY 2020 and revenue to be 28.6 percent lower.

2.3.2 In-Lane Traffic

This section provides a brief review of the historical raw in-lane traffic trends for each of the seven MDTA Legacy facilities, I-95 ETLs, and the ICC. Data shown is for traffic at the toll gantry locations. Data for the ICC, which has several toll gantries, is shown as the total in-lane traffic at all toll gantries. This is the same data that was used for estimating COVID-19 impacts shown earlier in this chapter. This data allows analysis of traffic trends without the impacts of recent collection related challenges. **Table 2-8** summarizes this data annually for FY 2019 through FY 2021 for passenger cars and commercial vehicles.

Considering FY 2020 had just three and a half months of COVID-19 impacted travel, FY 2021 made a strong recovery over FY 2020 particularly on the Kennedy Highway and the Bay Bridge for passenger cars. Due to the completion of construction on the Harbor Tunnel, passenger car traffic has increased significantly over FY 2020 and has pulled some traffic back that had diverted to the Fort McHenry and Francis Scott Key Bridge. Commercial vehicle traffic, as noted in **Section 2.1** above, has made a strong recovery and experienced significant growth over FY 2020 for all Legacy facilities.

The ICC and I-95 ETLs have not recovered at the same pace as the Legacy facilities due to their larger commuting share of traffic. This sector of traffic has dropped significantly as remote working continues through the pandemic, and will likely continue to recover at a slower pace as employees gradually return to work. Due to this, the ICC declined by 13.8 percent year-over-year in both FY 2020 and FY 2021 for passenger cars. The I-95 ETLs fared worse in FY 2021 and declined by almost 21 percent, compared to a decline of 17.5 percent in FY 2020. Commercial vehicles make up a very small portion of traffic on both of these facilities, but similar to the Legacy facilities they showed significant recovery in FY 2021, with the ICC experiencing an increase in traffic of 1.7 percent.

2.4 Historical Traffic on Other Major Highways

In order to better understand regional traffic growth patterns, historical traffic counts on select competing major routes were reviewed dating back to 2007. These roads include interstates and major highways that compete with or complement the MDTA Legacy facilities. The data presented in this section are based on calendar year average annual daily traffic volumes and associated growth rates at each location. Historical average annual daily traffic volumes and annual growth rates on six Maryland State Highway Authority (MSHA) roadways and one Virginia roadway through 2020 are presented in **Table 2-9**.

Table 2-8
MDTA In-Lane Traffic by Fiscal Year

Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL [1]	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
In-Lane Passenger Car Traffic (in millions)																		
2019	4.898	-	13.530	-	20.908	-	44.617	-	11.866	-	12.747	-	3.147	-	104.334	-	9.349	-
2020	4.450	(9.1)	11.367	(16.0)	15.189	(27.3)	40.757	(8.7)	11.821	(0.4)	11.703	(8.2)	2.803	(10.9)	89.920	(13.8)	7.709	(17.5)
2021	4.137	(7.0)	11.472	0.9	17.964	18.3	37.951	(6.9)	10.654	(9.9)	11.510	(1.6)	2.652	(5.4)	77.548	(13.8)	6.100	(20.9)
In-Lane Commercial Vehicle Traffic (in millions)																		
2019	0.228	-	1.995	-	0.794	-	4.535	-	1.209	-	0.915	-	0.215	-	3.595	-	0.558	-
2020	0.228	(0.3)	2.022	1.4	0.652	(17.8)	4.496	(0.8)	1.247	3.2	0.923	0.9	0.202	(6.4)	3.528	(1.9)	0.490	(12.1)
2021	0.249	9.4	2.210	9.3	0.681	4.5	4.907	9.1	1.305	4.6	0.943	2.2	0.215	6.4	3.588	1.7	0.478	(2.6)
Total In-Lane Traffic (in millions)																		
2019	5.126	-	15.525	-	21.702	-	49.151	-	13.075	-	13.662	-	3.363	-	107.930	-	9.907	-
2020	4.677	(8.8)	13.389	(13.8)	15.842	(27.0)	45.253	(7.9)	13.068	(0.1)	12.626	(7.6)	3.004	(10.7)	93.448	(13.4)	8.200	(17.2)
2021	4.386	(6.2)	13.682	2.2	18.646	17.7	42.858	(5.3)	11.959	(8.5)	12.453	(1.4)	2.866	(4.6)	81.136	(13.2)	6.578	(19.8)

Table 2-9
Average Annual Daily Traffic Trends on Major Highways

Calendar Year	US 1 E of Cedar Church Rd.		I-95 N of MD 100		I-97 N of MD 176		I-695 E of MD 146		MD 295 N of MD 100		US 301 S of MD 234		I-95 (Virginia) N of Courthouse Rd	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
2007	11,600	-	191,900	-	102,600	-	155,300	-	91,600	-	22,500	-	137,000	-
2008	11,100	(4.3)	188,000	(2.0)	100,600	(1.9)	152,200	(2.0)	88,900	(2.9)	21,400	(4.9)	133,000	(2.9)
2009	11,300	1.8	192,100	2.2	105,100	4.5	153,700	1.0	88,900	-	21,800	1.9	136,000	2.3
2010	10,100	(10.6)	192,900	0.4	105,500	0.4	150,900	(1.8)	89,400	0.6	22,500	3.2	136,000	-
2011	9,900	(2.0)	193,100	0.1	105,600	0.1	151,000	0.1	93,400	4.5	22,100	(1.8)	135,000	(0.7)
2012	9,900	-	191,300	(0.9)	106,200	0.6	151,800	0.5	92,600	(0.9)	22,100	-	135,000	-
2013	9,300	(6.1)	193,000	0.9	107,200	0.9	149,500	(1.5)	92,800	0.2	20,800	(5.9)	132,000	(2.2)
2014	9,300	-	192,800	(0.1)	107,100	(0.1)	149,300	(0.1)	107,700	16.1	20,800	-	131,000	(0.8)
2015	10,100	8.6	207,300	7.5	111,800	4.4	160,500	7.5	108,500	0.7	22,600	8.7	134,000	2.3
2016	11,500	13.9	201,600	(2.7)	108,700	(2.8)	150,200	(6.4)	103,300	(4.8)	21,900	(3.1)	136,000	1.5
2017	11,800	2.6	206,400	2.4	111,300	2.4	153,800	2.4	105,400	2.0	22,400	2.3	137,000	0.7
2018	11,700	(0.8)	205,200	(0.6)	121,100	8.8	152,900	(0.6)	104,500	(0.9)	22,200	(0.9)	136,000	(0.7)
2019	12,600	7.7	180,200	(12.2)	122,000	0.7	161,300	5.5	104,500	-	21,800	(1.8)	137,000	0.7
2020	10,971	(12.9)	145,051	(19.5)	98,182	(19.5)	129,811	(19.5)	87,223	(16.5)	18,031	(17.3)	127,000	(7.3)
Average Annual Percent Change														
2007 to 2009		(1.3)		0.1		1.2		(0.5)		(1.5)		(1.6)		(0.4)
2009 to 2019		1.1		(0.6)		1.5		0.5		1.6		-		0.1
2019 to 2020		(12.9)		(19.5)		(19.5)		(19.5)		(16.5)		(17.3)		(7.3)

As shown in **Table 2-9**, the traffic volumes on the northern region MSHA roadway, US 1 (east of Cedar Church Road), followed a more positive trend compared to the northern MDTA facilities, with a growth of 1.1 percent between 2009 and 2019. This compares to a transaction growth of 0.4 percent for passenger cars and 0.2 percent for commercial vehicles during this period on the Kennedy highway. Toll increases implemented during this period would contribute to the more modest growth trends on the MDTA facilities. In 2020, traffic decreased by 12.9 percent due to the COVID-19 pandemic.

The historical average annual daily traffic volumes and annual growth rates for the central region MSHA roadways are represented in **Table 2-9** by I-95 (N of MD 100), I-97 (N of MD 176) and I-695 (E of MD 146), which are all located in the Baltimore area. Traffic volumes on the MSHA facilities decreased by an average of 2.2 percent in 2008, most likely due to the impacts of the Great Recession, while traffic volumes on the Central Region MDTA facilities did not experience significant effects of the recession until 2009 with volumes decreasing by 2.7 percent. Traffic volume decreases on the central MDTA facilities also occurred in years 2012 and 2013 due to toll rate increases. Overall, during the great recession years (2007 to 2009), traffic decreased by an average of 0.1 percent and 1.3 percent per year on central region MSHA and MDTA facilities, respectively. During the 2009 to 2019 post-recession period, traffic has increased by 0.2 percent on the MDTA facilities and 0.5 percent on the MSHA facilities in the central region. In 2020 the central region MSHA facilities decreased by 19.5 percent compared to 2019.

The historical average annual daily traffic volumes and annual growth rates on one southern region MSHA roadway is represented by US 301 (South of MD 234) in **Table 2-9**. Due to the proximity of the Bay Bridge (US 50) to Virginia, one traffic count location in northern Virginia has also been included in the table. On an average, traffic volumes on the two southern region MDTA facilities (Bay Bridge and Nice/Middleton Bridge) have grown higher than the comparison locations. During the 2009 to 2019 post-recession period, traffic has increased modestly, averaging 0.5 percent per annum on the MDTA facilities and 0.1 percent on the combined MSHA and VDOT facilities. Traffic volume decreases on the southern MDTA facilities occurred in years 2012 and 2013 due to toll rate increases. Following this, both on the MDTA and on the combined Southern Region MSHA and Virginia facilities, traffic has grown at relatively higher levels. Between 2015 and 2017 growth averaged 2.1 percent on the two southern MDTA facilities and 1.6 percent on the MSHA and Virginia roads. Since then, traffic has been flat or declined on both southern region MDTA and MSHA facilities, before declining further in 2020.

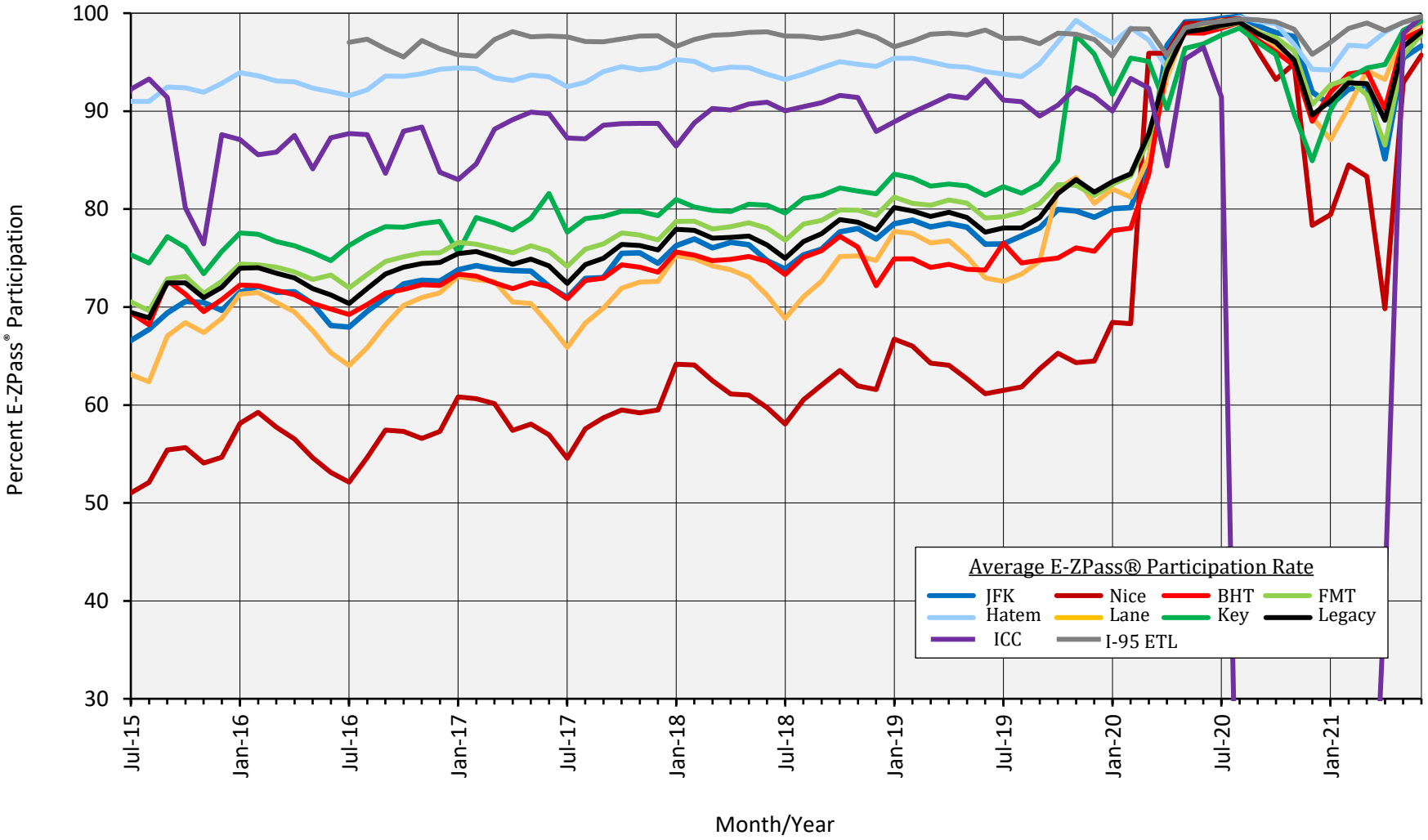
Trends over the past 13-year period for both the MDTA system and the other major highways were used as a guide in estimating the ten-year traffic growth for the traffic and revenue forecasts presented in Chapter 4.

2.5 MDTA E-ZPass® Market Share

In recent years, electronic toll collection has played an increasingly important role in transaction processing for toll agencies across the nation. MDTA collects electronic tolls via E-ZPass®. **Figure 2-5** provides a graphic summary of the E-ZPass® market share for each of the seven Legacy facilities, the total Legacy system, the Intercounty Connector, and the I-95 Express Toll Lanes (ETL) from July 2008 through June 2020 for collected transactions.

From July 2019 to February 2020, E-ZPass® transactions accounted for an average of 80.8 percent of the total Legacy system transactions, an increase of 2.9 percent over the same period in FY 2019. Of these, 66.8 percent were made by Maryland E-ZPass® customers, including in-state E-ZPass® customers, commuter plans, shopper plans and Hatem Bridge plans. Over the same time period, in terms of individual facilities, the Thomas J. Hatem Memorial Bridge had the greatest percentage of E-ZPass® customers at 96.3 percent of total transactions over this time period, primarily due to the Hatem Bridge Toll Plans and its conversion to cashless tolling prior to March. The Governor Harry W. Nice Memorial/Senator Thomas "Mac" Middleton Bridge had the lowest percentage of E-ZPass® transactions during this time period at 64.4 percent. On a total system basis, between July 2019 and February 2020, cash transactions accounted for a combined 17.0 percent of all transactions, a decrease of 3.3 percent over same period in FY 2019. Video transactions accounted for 2.1 percent of all transactions made between July 2019 and February 2020.

On March 17, 2020 MDTA implemented systemwide cashless tolling to prevent the potential spread of COVID-19 during exchanges of cash at toll booths. Additionally, mailing of Notice of Toll Due (NOTD) video invoices was paused until October 2020. Due to these changes and other collection challenges related to the back-office transition, E-ZPass® transactions accounted for 94 percent of all Legacy system transactions in April 2020 and about 98 percent of the total transactions in May and June 2020. The pause of the NOTD invoicing mailings and the back-office transition caused FY 2021 E-ZPass® trends to be more volatile than previous years. In particular, the ICC shows a significant drop in E-ZPass® marketshare due to challenges with trip reconstruction related to the back-office transition. By the end of the fiscal year in July, E-ZPass® marketshare for all facilities was returning to levels seen initially after transition to all-electronic tolling.



Note: Intercounty Connector toll revenue collection impacted by delay in trip reconstruction.

Collected Transaction E-ZPass® Marketshare Trends by Facility

FIGURE 2-5

Chapter 3

Corridor Growth Review

3.1 Introduction

Trips on Maryland's tolled facilities are made for many purposes, including commuting, business, commerce, and recreation. Preparing facility traffic forecasts requires evaluating socioeconomic data that drive trip purposes, such as population, employment, and income. Therefore, historical and projected socioeconomic data are important in developing traffic forecasts. Socioeconomic data are provided by public and private sources for different geographies and time periods. This introduction overviews the socioeconomic data reviewed. COVID-19 impacts are discussed specifically in the next section of this chapter.

Variables – Variables reviewed include population, employment, unemployment rates, real per capita income, real gross domestic product (GDP), gross regional product (GRP), inflation, and fuel prices.

Geographies – Geographies profiled include national and census divisions (U.S., Mid Atlantic, South Atlantic), as well as Maryland and six sub-state regions, as mapped in **Figure 3-1**.

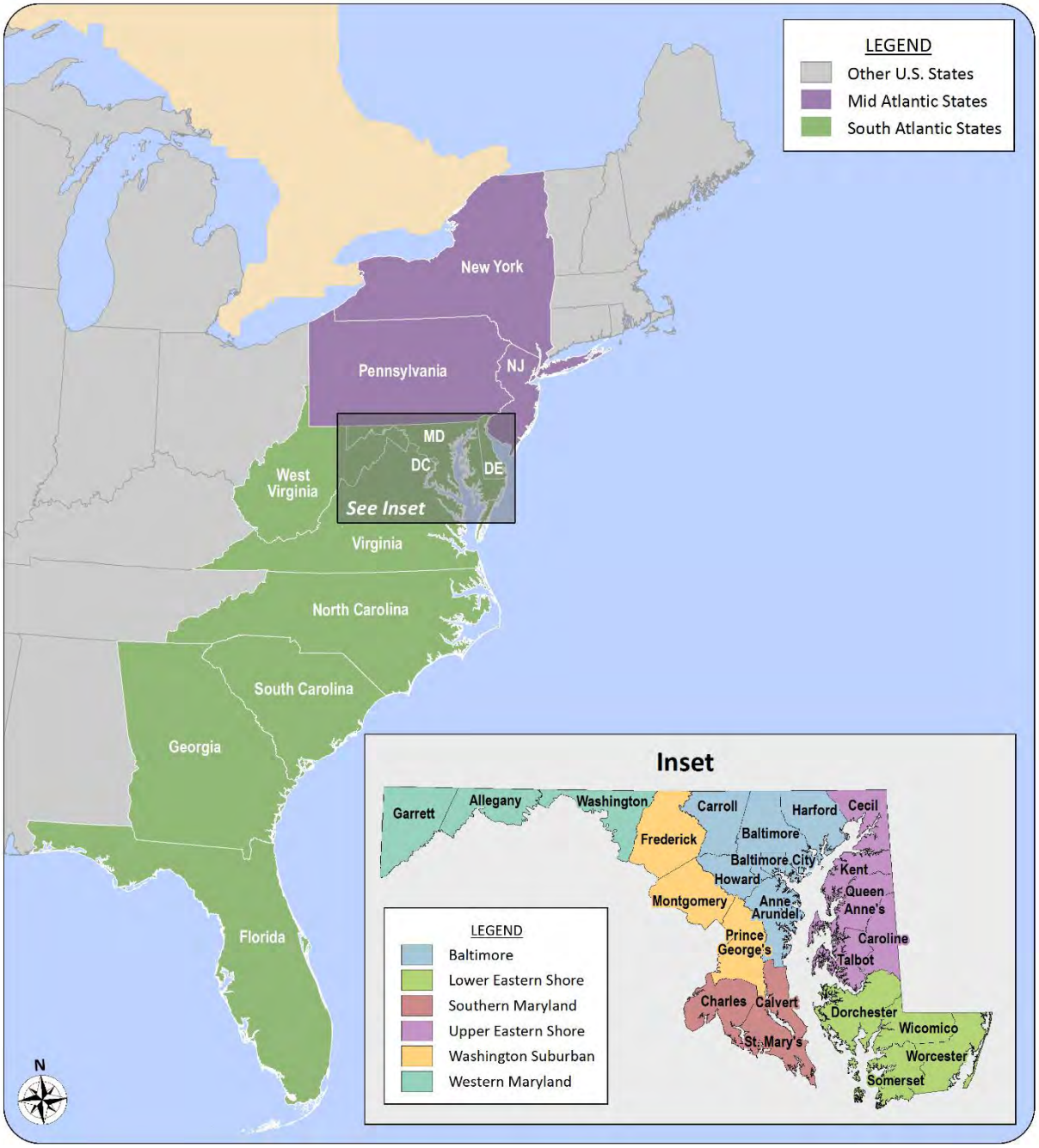
Sources – Government and private sector data sources include:

- United States Bureau of Economic Analysis (BEA)
- United States Bureau of Labor Statistics (BLS)
- Congressional Budget Office (CBO)
- United States Census Bureau (Census)
- Energy Information Administration (EIA)
- Federal Open Market Committee (FOMC)
- Office of Management and Budget (OMB)
- The State of Maryland Department of Planning State Data Center (MD SDC)
- Moody's Analytics (Moody's)
- Woods & Poole Economics, Inc., 2021 Complete Economic and Demographic Data Source (WP21)[1]

Analysis Horizon – Historical socioeconomic data are presented annually, including annual growth rates, and compound annual growth (CAGR) in the preceding decade. Forecasts are provided for the next decade in five-year increments (2021-2026 and 2026-2031), as available.

[1]Woods & Poole Economics, Inc. Washington, D.C. Copyright 2021. Woods & Poole does not guarantee the accuracy of this data. The use of this data and the conclusion drawn from it are solely the responsibility of CDM Smith.

Figure 3-1
Geographies Profiled



3.2 Recent Growth Trend Explanatory Factors

3.2.1 COVID-19 Pandemic Timeline

COVID-19 has resulted in significant short-term volatility and future uncertainty. Given the importance to this forecast, impacts observed are discussed herein before the socioeconomic data discussion. Future pandemic considerations, including risk factors, are discussed in the final section of this chapter, **3.4 Summary of Risks and Conclusion**.

COVID-19 continues to pose systemic economic and transport risks. Individual and collective behavior changes have occurred, especially relating to physical interaction, travel, and the economy.

Beginning in March 2020, COVID-19 triggered withdrawals from most physical interactions to stem contagion, with tremendous initial economic and transportation impacts. Governments closed borders, restricted migration, shuttered nonessential industries, and ordered quarantines, stay-at-home, and other restrictions. Businesses furloughed or laid-off millions of employees. Telecommuting was implemented in many industries. Individuals self-isolated, retrenching from "normal" activities, including sports, social and family gatherings, vacations, conferences, and discretionary spending.

Beginning in May 2020, many states and local authorities, including in Maryland, began gradually easing restrictions. The pandemic also brought unprecedented policy responses from fiscal and monetary authorities. Significant recovery occurred in summer and early fall 2020, followed by a notable viral peak in the winter prior-to extensive vaccinations in spring 2021. Most recently vaccination rates have slowed and the Delta variant has caused widespread contagion resurgence, especially in the unvaccinated. As of late summer/early fall 2021, activity is still not entirely at pre-COVID-19 levels, with an uneven recovery and some industries recovering or exceeding pre-pandemic levels while others remain far below pre-pandemic levels.

Table 3-1 identifies COVID-19 events, mandates, and announcements that have impacted the MDTA traffic recovery. On March 17, 2020, MDTA implemented cashless tolling; this and other MDTA-related COVID-19 changes are further discussed in **Section 1.2.2** of **Chapter 1**. The most recent events shown are that Maryland achieved about 70 percent adult vaccination rates (at least one vaccine dose) in late May 2021 and that the state of emergency was lifted on July 1, 2021.

Table 3-1 – National, Maryland, and MDTA COVID-19 Mandates

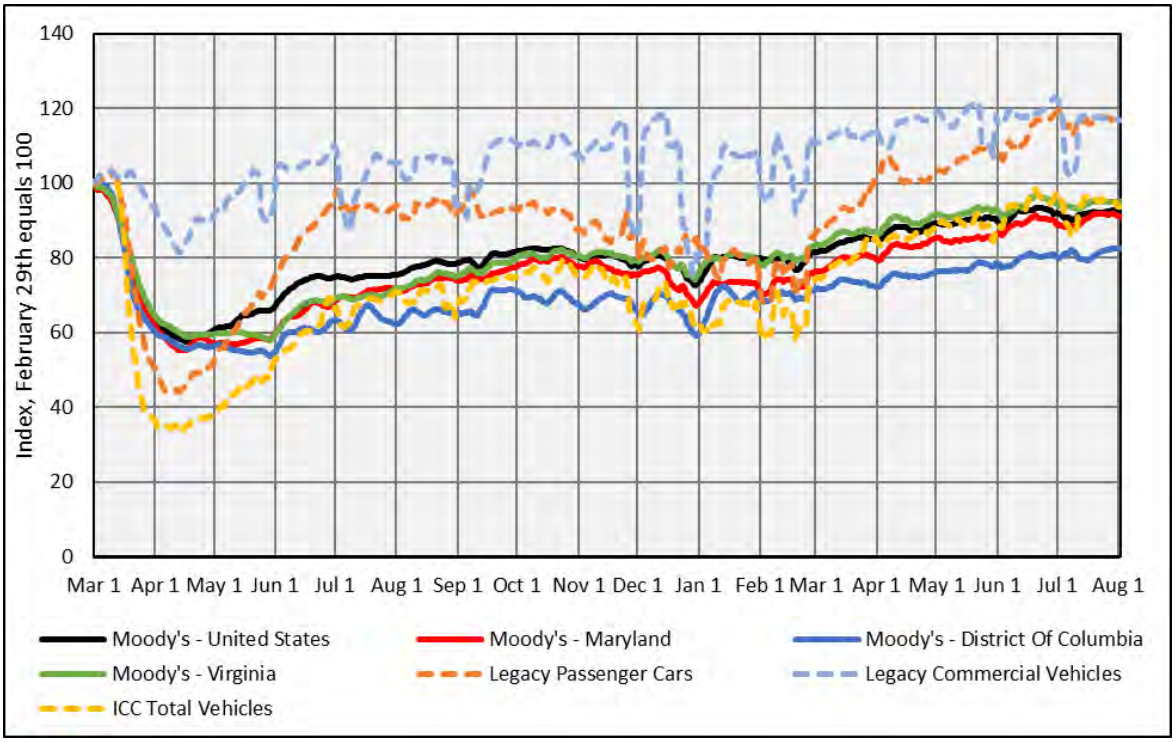
Calendar Year	Date	Location	Description
2020	March 11	USA	- International travel is halted (excluding Great Britain)
2020	March 12	MD	- Gatherings of more than 250 people banned - Schools closed until March 27th
2020	March 13	USA	- National Emergency declared
2020	March 16	MD	- Gatherings of more than 50 people banned - All bars and restaurants closed
2020	March 17	MDTA	- MDTA implements all-electronic (cashless) tolling statewide until further notice
2020	March 18	MDTA	- All E-ZPass® Maryland customer service centers closed until further notice. Motorists can still open accounts online and have their transponder mailed to them
2020	March 18-20	USA	- U.S./Canada and U.S./Mexico borders closed for non-essential travel
2020	March 19	MD	- Gatherings of more than 10 people banned - Transit for essential travel only
2020	March 23	MD	- Non-essential businesses closed
2020	March 27	MDTA	- Paused mailing for all Notices of Toll Due (NOTD) and assessing civil penalties on unpaid NOTDs. Customers can pay online rather than waiting for NOTDs to be mailed - Due dates extended until 30 days after the state of emergency is lifted for previously mailed NOTDs that have a due date of March 17, 2020 or later - E-ZPass® customers who replenish their accounts with cash have 30 days after Maryland's state of emergency is lifted to add funds to their accounts - Expiration dates for Commuter Plans were extended from 45 to 90 days and for Shoppers Plans from 90 to 150 days to give drivers more time to use their remaining trips. These expiration dates were eventually extended through November 1. These plan holders may also change or cancel their plans due to COVID-19 - Referrals of unpaid tolling accounts to the Central Collections Unit and to the Motor Vehicle Administration for registration flagging are on hold until 30 days after the state of emergency is lifted
2020	March 30	MD	- Residents ordered to stay-at-home indefinitely, persons traveling into Maryland are required to self-quarantine for 14 days.
2020	April 17	MD	- Schools closed through May 15th
2020	April 18	MD	- Residents ordered to wear face masks in public settings
2020	May 6	MD	- Schools closed through the end of the academic year
2020	May 15	MD	- Statewide Stay at Home order replaced by Safer at Home advisory. Some jurisdictions began Stage One of "Maryland Strong: Roadmap to Recovery" program but most social distancing measures generally remain in place.
2020	June 5	MD	- Maryland began moving to Stage Two of "Maryland Strong: Roadmap to Recovery" with the opening of businesses including manufacturing, construction, retail shops, speciality vendors, wholesalers, warehouses, and professional offices. Additionally, personal services(including salons, massage, and tattoo parlors) resumed operations at 50 percent capacity and the state government returned to more normal operations
2020	June 12	MD	- Additional Stage Two openings occurred including indoor dining and pools at 50 percent capacity and outdoor amuements at full capacity
2020	June 15	MDTA	- MDTA E-ZPass customer service centers reopen with limited capacity
2020	June 19	MD	- Additional Stage Two openings occurred including indoor fitness activities at 50 percent capacity and casinos, arcades, and malls at full capacity. Schools and child care centers also began partial reopening
2020	July 29	MD	-Maryland's reopening plan put on hold. Out-of-state travel advisory involving nine states is issued and the statewide face mask order is expanded
2020	August 27	MD	- All schools in Maryland authorized to reopen

Table 3-1 – National, Maryland, and MDTA COVID-19 Mandates (Continued)

Calendar Year	Date	Location	Description
2020	August 6	MDTA	- All-Electronic Tolling made permanent at all MDTA Facilities Statewide
2020	September 4	MD	- Maryland began moving to Stage Three of the "Maryland Strong: Roadmap to Recovery" with additional safe and gradual openings. Effectve September 4th at 5 PM, outdoor venues may open to general public at 50% capacity or 250 people, whichever is less. Capacity for retail establishments and religious facilities increased from 50 to 75 percent. Indoor theaters may open to the general public at 50% capacity, or 100 people per auditorium—whichever is less
2020	September 21	MD	- Expanded capacity for indoor dining, from 50 to 75 percent, was put into place
2020	September 24	MDTA	- MDTA started accepting proactive toll payments for trips made on or before June 30, 2020 - MDTA announced that standard plan cycles will resume for discount plans on November 1 - MDTA announced that mailing of NOTDs will resume in mid-October
2020	October 1	MDTA	- Capacity limits on child care facilities lifted; indoor visitings allowed at nursing homes
2020	October 15	MDTA	- Mailing of Notices of Toll Due (NOTD) resumes, beginning with unpaid transactions for trips made from March through June 2020.
2020	November 1	MDTA	- E-Zpass Maryland commuter discount plan and shoppers plan resumed.
2020	November 5	MD	- Maryland enters red zone for coronavirus case rates; Travel advisory to avoid travel to and from states with positivity rates for 10% or higher renewed.
2020	November 20	MD	- Hospital visitations restricted until further notice. Nursing home visitations limited to compassionate care visits. - Retail businesses and religious institutions back to Stage Two 50% capacity restrictions. Restaurants and Bars to close by 10 PM. - Fans restricted at any professional or collegiate stadiums and racetracks.
2020	December 14	MD	- First COVID-19 vaccine administered in Maryland
2021	January 1	MDTA	- Standard Video Toll rates to apply for any trips not paid with a valid E-ZPass account at all toll facilities statewide.
2021	January 18	MD	- Maryland moves to Phase 1B of the COVID-19 vaccine protocols to include all Marylanders 75 and older, as well as anyone of any age living in assisted living or independent living facilities and developmental disabilities and behavioral health group homes, K-12 teachers, education staff and child care providers.
2021	January 25	MD	- Maryland moves to Phase 1C of the COVID-19 vaccine protocols to include adults 65 and older, U.S. Postal Service employees and essential workers in manufacturing and agriculture.
2021	March 23	MD	- Maryland moves to Phase 2A of the COVID-19 vaccine protocols to include all Marylanders, aged 60 and older.
2021	March 12	MD	- Capacity limits lifted on outdoor and indoor dining, retail businesses, religious facilities and personal services. - Large Outdoor and Indoor venues may operate at up to 50% capacity. - Quarantine requirements lifted on out of state travel.
2021	March 30	MD	- Maryland moves to Phase 2B of the COVID-19 vaccine protocols to include all Marylanders, aged 16 and older.
2021	April 6	MD	- COVID-19 vaccine eligibilty opens for all Marylanders, aged 16 and older at any of the state's mass vaccination sites.
2021	April 12	MD	- COVID-19 vaccine eligibilty opens for all Marylanders, aged 16 and older at any vaccine provider in the state.
2021	April 28	MD	- Maryland's statewide outdoor mask mandate lifted
2021	May 15	MD	- All remaining capacity restrictions lifted on all indoor entertainment venues and conventions, and all outdoor entertainment, art, and sports venues, including all ticketed events. - All remaining capacity and distancing restrictions lifted on indoor and outdoor dining. - Maryland's indoor mask mandate lifted except for public transportation, health care settings and schools.
2021	May 31	MD	- 70% of adults in Maryland have received at least one dose of the COVID-19 vaccine.
2021	June 15	MD	- State of emergency in Maryland lifted with most pandemic-related orders ending as of July 1, 2021.

Various metrics are available to quantify the pandemic impacts on society. For example, **Figure 3-2** shows Moody's/CNN Business "Back-to-Normal Index" (BNI) illustrating COVID-19 policy impacts on recovery. The index composites 37 indicators, including real GDP (Moody's), seated restaurant diners (OpenTable), Workplace Mobility Index (Google), airline traveler throughput (TSA), small businesses hours worked (Homebase), new home listings (Zillow), petroleum products supplied (EIA), railroad traffic (AAR), unemployment insurance claims, etc. The composite is indexed to February 29, 2020 equaling one. MDTA Legacy Facilities' passenger cars, commercial vehicles, and ICC data are also similarly indexed in **Figure 3-2** for comparison. Both the BNI and MDTA indices showed steep declines through mid-April 2020. BNI experienced gradual recovery, while MDTA traffic showed rapid improvement between mid-April and late June 2020. In the fall and particularly the winter months declines occurred in passenger car impacts due to weather impacts and a "second wave" of COVID-19 cases which the BNI showed smaller impacts during this period. It should also be noted that seasonal trends may influence these variations in impacts seen in Legacy passenger cars compared to the BNI. From March 2021 through the end of July, impacts have continually improved for Legacy system passenger cars at a faster pace than the BNI.

Figure 3-2
Moody's/CNN Business Back-to-Normal and MDTA Traffic Indexes

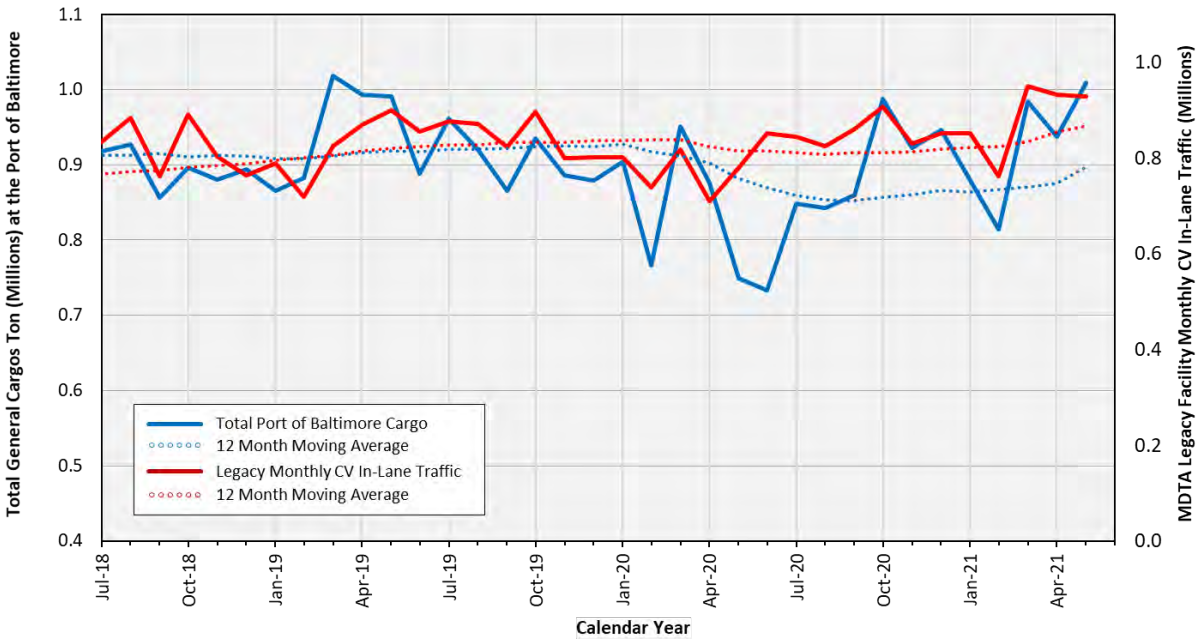


3.2.2 Port of Baltimore Cargo Trends

Shipping and port activity has been impacted by the pandemic. A factor that in the past has been found to be correlated to growth in commercial vehicle transactions on the Legacy facilities, particularly at the Central Region facilities, is cargo activity at the Port of Baltimore. **Figure 3-3** provides a comparison of cargo activity at the port of Baltimore to total Legacy commercial vehicle in-lane traffic from July 2018 through May 2021. The Port of Baltimore showed large

initial declines in cargo activity in the few months immediately into the pandemic (April and May 2020). Cargo activity recovered during summer 2020 and returned to more typical levels in the fall, around the same time as the COVID-19 pandemic impacts were estimated to have fully recovered for Legacy system commercial vehicles. Since the second quarter of FY 2021, commercial vehicle transactions and port activity have been exhibiting similar trends.

Figure 3-3
Comparison of Monthly Port of Baltimore Total General Cargo in Tons and MDTA Legacy Facilities Commercial Vehicle In-Lane Traffic, FY 2018 – 2021

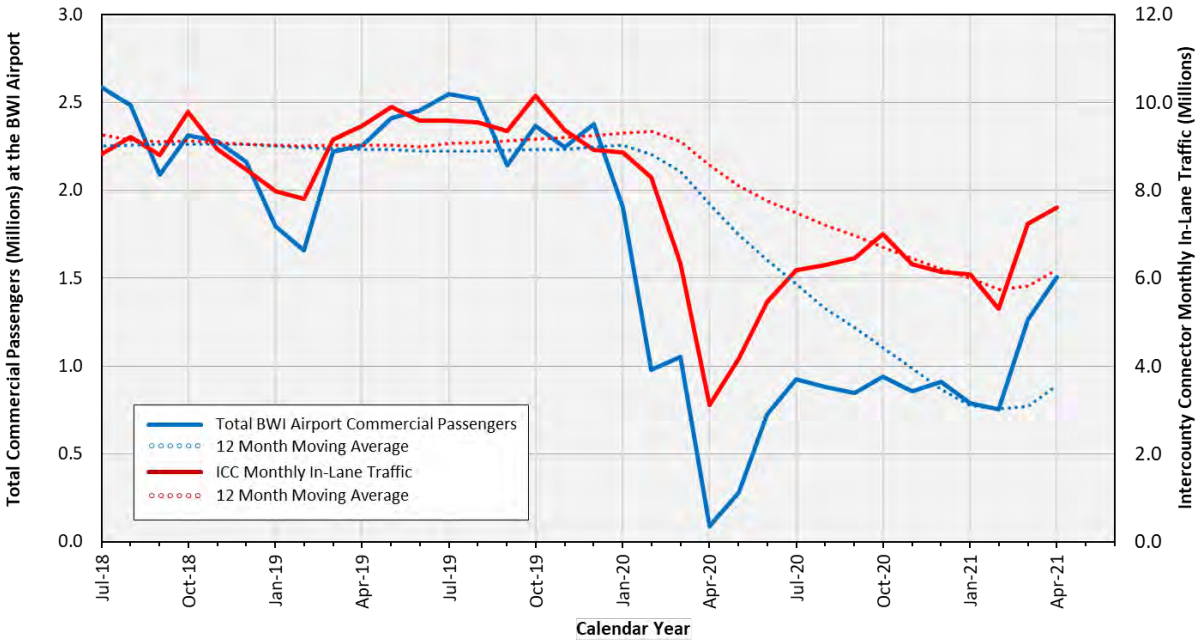


Source: Maryland Department of Transportation Port Administration.

3.2.3 Baltimore/Washington International Airport (BWI) Enplanement Trends

Another transportation metric being tracked in relation to leisure and business travel is airport activity. The Baltimore/Washington International Airport (BWI) enplanement data was analyzed against the Intercounty Connector monthly transactions. **Figure 3-4** shows the total passengers at BWI and the ICC toll transactions from July 2018 through April 2021. When all domestic and international travel was halted in April 2020, enplanements dropped significantly more than toll transactions. While some local travel was still occurring on the roadways, nearly all air travel was stopped except for emergency purposes. However, the direction of the trend since the first few months of the pandemic has been very similar. Travel increased last summer, but was dampened in the winter as cases increased, which is apparent in both metrics. February 2021 had winter storm impacts which impacted both road and air travel, but spring 2021 had a very strong recovery.

Figure 3-4
Comparison of Monthly Baltimore Washington International (BWI) Airport and MDTA Intercounty Connector In-Lane Traffic, FY 2018 - 2021



Source: Baltimore/Washington International (BWI) Airport

3.3 Socioeconomic Variables

Table 3-2 shows historical and forecast socioeconomic variable sources, terms and release dates. **Subsections 3.3.1-3.3.7** discuss historical and forecast trends for population, employment, unemployment rates, real per capita personal income, real gross domestic/regional product, inflation, and fuel prices. Note that the latest available MD SDC data are from 2015 for employment and income, which is several years old, although population was recently updated.

Table 3-2
Socioeconomic Variables: Terms and Sources

Variable	Term(s)	Historical Data	Forecast Data
Population	Persons	U.S. Census Bureau	Woods & Poole, 2021 Moody's, Jul. 2021 MD SDC, Dec. 2020
Employment	Persons	U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics	Woods & Poole, 2021 Moody's, Jul. 2021 MD SDC, Jan. 2015
Unemployment	Percentage	U.S. Bureau of Labor Statistics	CBO, Feb. 2021 FOMC, Jun. 2021 OMB, Feb. 2021 Moody's, Jul. 2021
Real Per Capita Income	2020$	Woods & Poole, 2021	Woods & Poole, 2021 Moody's, Jul. 2021 MD SDC, Jan. 2015
Real Gross Domestic/Regional Product	2020$	U.S. Bureau of Economic Analysis, Woods & Poole, 2021	CBO, Feb. 2021 FOMC, Jun. 2021 OMB, Feb. 2021 Moody's, Jul. 2021 Woods & Poole, 2021
Inflation	Annual Percentage Change	U.S. Bureau of Labor Statistics	CBO, Feb. 2021 FOMC, Jun. 2021 OMB, Feb. 2021 Moody's, Jul. 2021
Fuel Prices	Price per Gallon, Price per Barrel	Energy Information Administration	Moody's, Jul. 2021

3.3.1 Population

Historical

Table 3-3 shows U.S. Census Bureau population for 2010 to 2020 (July 1st estimates). National population increased from 309.3 to 329.5 million, equating to 0.6% CAGR; the South Atlantic, which includes Maryland, grew faster at 1.0% annually, and Mid Atlantic growth was effectively flat, at 0.0% annually.

Maryland's population grew 267,000, from 5.8 to almost 6.1 million, reflecting a 0.5% CAGR. The most populous sub-state region, Baltimore, grew 0.3% annually while Southern Maryland grew relatively fastest, at 0.9%. Annual growth in Maryland's other regions ranged from a low of 0.1% CAGR contraction in Western Maryland to a high of 0.7% in Washington Suburban.

Population growth has decelerated in Maryland, dropping from 0.9% in 2011 to 0.0% in 2020, effectively plateauing. Baltimore's population decelerated earlier than the state, with effectively no growth since 2015.

Table 3-3
Historical Population

Geography	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'10-'19
Population (Thousands)												
United States	309,327	311,583	313,878	316,060	318,386	320,739	323,072	325,122	326,838	328,330	329,484	19,003
Mid Atlantic	40,911	41,076	41,189	41,264	41,313	41,317	41,298	41,277	41,245	41,153	41,002	242
South Atlantic	59,941	60,518	61,161	61,752	62,412	63,154	63,955	64,670	65,288	65,871	66,393	5,930
Maryland	5,789	5,840	5,888	5,925	5,960	5,989	6,007	6,028	6,042	6,055	6,056	266
Baltimore	2,668	2,686	2,707	2,720	2,732	2,742	2,746	2,750	2,753	2,753	2,749	85
Lower Eastern Shore	210	211	211	211	211	211	212	212	213	214	214	4
Southern Maryland	342	346	349	352	355	357	360	364	367	370	372	28
Upper Eastern Shore	240	241	241	241	241	241	241	242	243	244	244	4
Washington Suburban	2,076	2,103	2,128	2,148	2,169	2,185	2,196	2,209	2,216	2,223	2,227	147
Western Maryland	253	254	253	253	252	251	251	251	251	251	250	-2
Annual Percent Change												
United States		0.7%	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.5%	0.5%	0.4%	0.7%
Mid Atlantic		0.4%	0.3%	0.2%	0.1%	0.0%	0.0%	-0.1%	-0.1%	-0.2%	-0.4%	0.1%
South Atlantic		1.0%	1.1%	1.0%	1.1%	1.2%	1.3%	1.1%	1.0%	0.9%	0.8%	1.1%
Maryland		0.9%	0.8%	0.6%	0.6%	0.5%	0.3%	0.4%	0.2%	0.2%	0.0%	0.5%
Baltimore		0.7%	0.8%	0.5%	0.4%	0.4%	0.1%	0.1%	0.1%	0.0%	-0.2%	0.4%
Lower Eastern Shore		0.4%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.3%	0.4%	0.0%	0.2%
Southern Maryland		1.2%	0.9%	0.9%	0.7%	0.7%	0.9%	0.9%	0.9%	0.9%	0.6%	0.9%
Upper Eastern Shore		0.3%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.5%	0.3%	0.2%	0.2%
Washington Suburban		1.3%	1.2%	0.9%	1.0%	0.8%	0.5%	0.6%	0.3%	0.3%	0.1%	0.8%
Western Maryland		0.3%	-0.2%	-0.2%	-0.3%	-0.3%	0.0%	-0.1%	0.0%	-0.1%	-0.2%	-0.1%

Forecast

Table 3-4 shows average annual population growth forecasts through 2031 by Woods & Poole (WP21), Moody's, and the Maryland State Data Center (MD SDC).

WP21 projects 0.7% National annualized growth between 2021 and 2031, slightly higher than Moody's 0.4%. WP21 predicts Mid-Atlantic CAGR of 0.2% and South Atlantic at 0.9%. As with National forecasts, Moody's projects Mid-Atlantic and South Atlantic growth slightly lower than WP21's, at -0.1% and 0.8%, respectively.

Both WP21 and MD SDC project Maryland's population growth at around 0.6% and that Southern Maryland will grow relatively faster than other regions, at 1.0%, similar to recent history. In Baltimore and Washington Suburban, the two major metro areas, WP21 projects 0.5% and 0.7% CGAR, respectively. MD SDC projects slightly lower growth at 0.4% and 0.6%, respectively. Maryland and sub-regional forecasts from WP21 and MD SDC appear optimistic given actual population growth (plateauing) observed in recent years. This will continue to be monitored.

Table 3-4
Forecast Population Growth

	Historical	WP21			Moody's			MD SDC		
Geography	'10-'19	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31
United States	0.7%	0.7%	0.7%	0.7%	0.5%	0.4%	0.4%	-	-	-
Mid Atlantic	0.1%	0.2%	0.2%	0.2%	0.0%	-0.2%	-0.1%	-	-	-
South Atlantic	1.1%	1.0%	0.9%	0.9%	0.8%	0.8%	0.8%	-	-	-
Maryland	0.5%	0.6%	0.6%	0.6%	-	-	-	0.6%	0.5%	0.5%
Baltimore	0.4%	0.5%	0.5%	0.5%	-	-	-	0.4%	0.4%	0.4%
Lower Eastern Shore	0.2%	0.5%	0.5%	0.5%	-	-	-	0.9%	0.9%	0.9%
Southern Maryland	0.9%	1.0%	1.0%	1.0%	-	-	-	1.1%	1.0%	1.0%
Upper Eastern Shore	0.2%	0.5%	0.5%	0.5%	-	-	-	0.8%	1.0%	0.9%
Washington Suburban	0.8%	0.7%	0.6%	0.7%	-	-	-	0.6%	0.6%	0.6%
Western Maryland	-0.1%	0.3%	0.3%	0.3%	-	-	-	0.6%	0.7%	0.6%

3.3.2 Employment

Historical

Employment (civilian nonfarm) data in **Table 3-5** are from the U.S. Bureau of Economic Analysis (BEA) through 2019, with 2020 derived via the Bureau of Labor Statistics' 2020/2019 growth. Between 2010 and 2019, employment increased faster than population, but notably declined in 2020 due to COVID-19. Growth in the South Atlantic was 1.4% CAGR, higher than the Mid-Atlantic (0.5%) and nationally (1.0%). Mid-Atlantic exhibited the relatively steepest employment decline in 2020 compared to the South Atlantic and the Nation.

Historical growth in Maryland was 1.4% CAGR from 2010 to 2019, with a decline in 2020 slightly greater than the Nation, at 6.3% versus 6.0%. Maryland's annual employment growth was higher than population growth, except for in 2020. Growth in Baltimore and Washington Suburban metro areas both were stronger than other substate regions, and Western Maryland had the relatively weakest growth, actually declining in 2020 and prior-to COVID-19.

Table 3-5
Historical Employment

Geography	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'10-'19
Employment (Thousands)												
United States	172,902	176,092	178,980	182,325	186,234	190,326	193,379	196,337	200,284	203,810	191,519	30,908
Mid Atlantic	23,086	23,530	23,771	24,103	24,507	24,913	25,244	25,501	25,966	26,383	24,386	3,297
South Atlantic	32,872	33,546	34,027	34,673	35,561	36,541	37,333	38,180	39,206	40,002	37,760	7,130
Maryland	3,345	3,395	3,439	3,494	3,538	3,603	3,656	3,693	3,751	3,804	3,566	459
Baltimore	1,624	1,655	1,685	1,712	1,732	1,765	1,789	1,809	1,840	1,863	1,748	240
Lower Eastern Shore	114	114	116	116	117	118	119	120	121	123	115	9
Southern Maryland	150	151	152	153	155	159	163	164	164	167	159	17
Upper Eastern Shore	115	115	117	120	121	122	124	124	126	128	119	13
Washington Suburban	1,206	1,221	1,230	1,253	1,272	1,297	1,320	1,334	1,359	1,382	1,293	176
Western Maryland	136	138	139	140	140	141	141	140	140	140	131	4
Annual Percent Change												
United States		1.8%	1.6%	1.9%	2.1%	2.2%	1.6%	1.5%	2.0%	1.8%	-6.0%	1.8%
Mid Atlantic		1.9%	1.0%	1.4%	1.7%	1.7%	1.3%	1.0%	1.8%	1.6%	-7.6%	1.5%
South Atlantic		2.1%	1.4%	1.9%	2.6%	2.8%	2.2%	2.3%	2.7%	2.0%	-5.6%	2.2%
Maryland		1.5%	1.3%	1.6%	1.3%	1.8%	1.5%	1.0%	1.6%	1.4%	-6.3%	1.4%
Baltimore		2.0%	1.8%	1.6%	1.2%	1.9%	1.4%	1.1%	1.7%	1.3%	-6.2%	1.5%
Lower Eastern Shore		0.2%	1.1%	0.7%	0.6%	1.0%	0.9%	0.8%	0.7%	1.4%	-6.2%	0.8%
Southern Maryland		0.8%	0.1%	1.0%	1.2%	2.4%	2.5%	0.6%	0.1%	2.0%	-5.1%	1.2%
Upper Eastern Shore		0.2%	1.5%	2.1%	1.4%	0.7%	1.6%	0.3%	1.6%	1.3%	-6.8%	1.2%
Washington Suburban		1.2%	0.7%	1.9%	1.5%	2.0%	1.7%	1.1%	1.9%	1.7%	-6.5%	1.5%
Western Maryland		1.1%	1.3%	0.2%	0.1%	0.9%	-0.1%	-0.5%	0.0%	0.0%	-6.3%	0.3%

Forecast

Table 3-6 shows the national employment growth forecast of 1.2% CAGR through 2031, per WP21; Moody's expects similar growth through 2026, but it decelerates to 0.4% after. According to Moody's, the South Atlantic forecast CAGR (1.0%) is expected to be higher than the U.S. (0.8%) and Mid-Atlantic (0.4%). Similar relative growth is projected by WP21, with relatively faster growth in the South Atlantic. Forecasts from WP21 and Moody's are slightly decelerated from the historical growth observed pre-COVID-19.

According to the MD SDC, Maryland's employment forecast is 0.6% through 2031; however, such data were published in 2015 and are antiquated. WP21's forecast is 1.2% CAGR with a slight deceleration over the decade. For Baltimore and Washington Suburban, WP21 projects 1.3% and 1.1%, respectively, with Southern Maryland as the relatively fastest region, at 1.5%. In effect, the next decade is generally projected to resume pre-pandemic growth, albeit slightly decelerated.

Table 3-6
Forecast Employment Growth

	Historical	WP21			Moody's			MD SDC		
Geography	'10-'19	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31
United States	1.8%	1.3%	1.2%	1.2%	1.2%	0.4%	0.8%	-	-	-
Mid Atlantic	1.5%	1.1%	1.0%	1.0%	1.1%	-0.2%	0.4%	-	-	-
South Atlantic	2.2%	1.5%	1.4%	1.5%	1.3%	0.6%	1.0%	-	-	-
Maryland	1.4%	1.2%	1.1%	1.2%	-	-	-	0.6%	0.5%	0.6%
Baltimore	1.5%	1.3%	1.2%	1.3%	-	-	-	0.6%	0.4%	0.5%
Lower Eastern Shore	0.8%	0.9%	0.8%	0.8%	-	-	-	0.6%	0.5%	0.6%
Southern Maryland	1.2%	1.5%	1.4%	1.5%	-	-	-	1.1%	0.7%	0.9%
Upper Eastern Shore	1.2%	1.2%	1.2%	1.2%	-	-	-	1.0%	0.6%	0.8%
Washington Suburban	1.5%	1.1%	1.0%	1.1%	-	-	-	0.7%	0.5%	0.6%
Western Maryland	0.3%	0.7%	0.6%	0.7%	-	-	-	0.8%	0.4%	0.6%

3.3.3 Unemployment

Historical

Figure 3-5 shows annual unemployment rates from 2000 to 2020 from the BLS. Maryland's rate was universally lower than both the Mid-Atlantic and Nation albeit paralleling very closely. In 2020, with the COVID-19 onset, unemployment rates unprecedentedly spiked very quickly, jumping enormously in April 2020, and then steadily declining in the following months. On an annualized basis, national unemployment was 8.1% in 2020, with Maryland at 6.8%.

Figure 3-5
Historical Unemployment Rates (Macro Geographies)

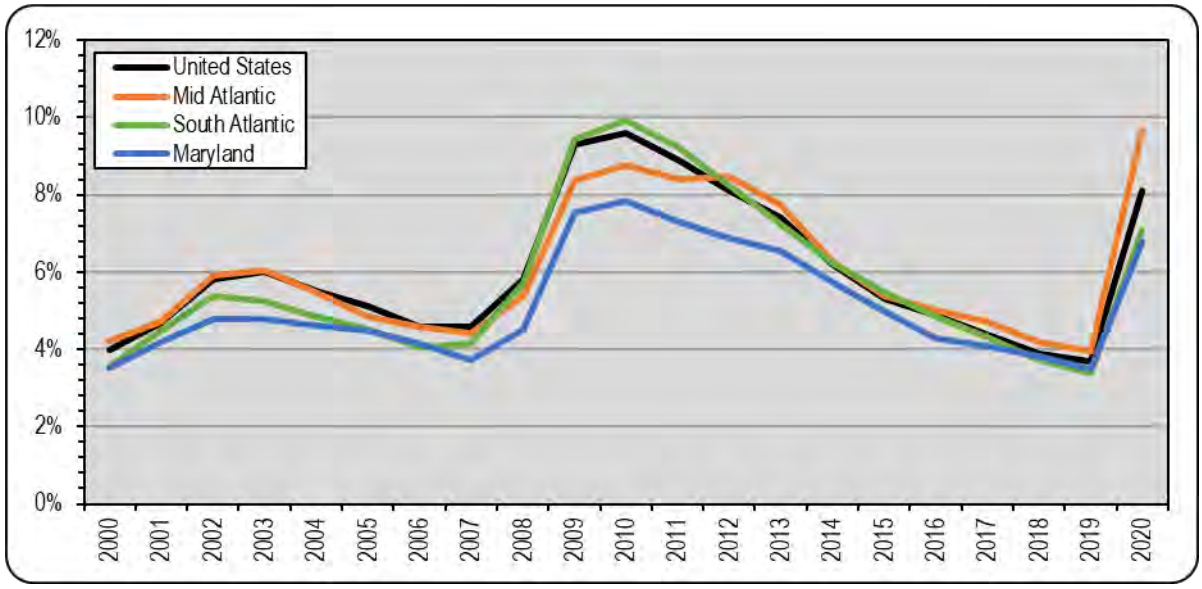
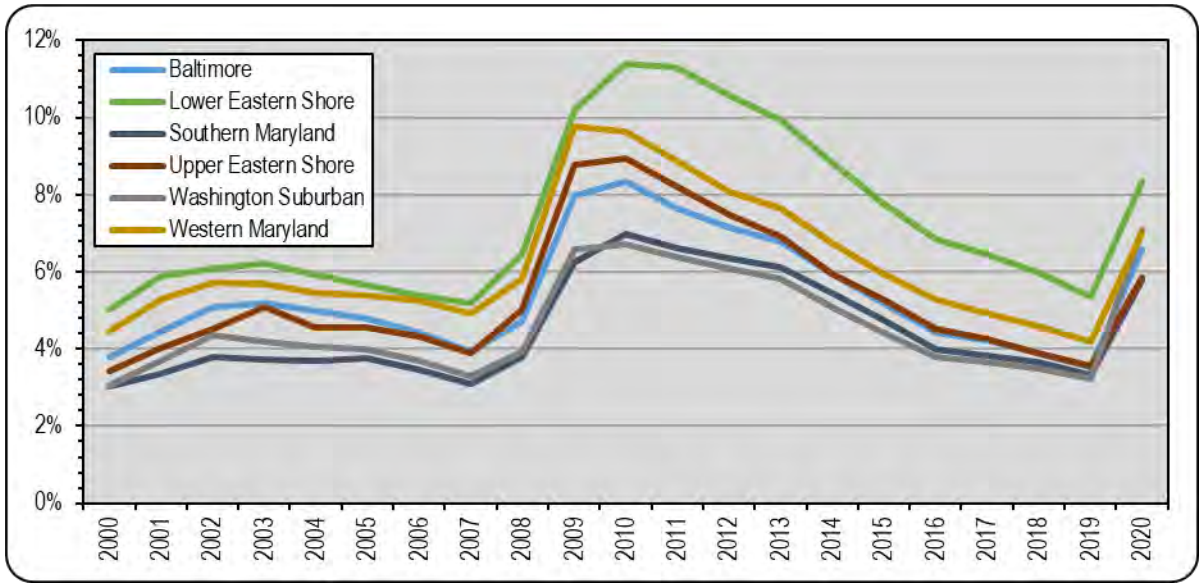


Figure 3-6 shows annual unemployment rates for Maryland's regions. In every year, Southern Maryland and Washington Suburban exhibited lower unemployment rates than elsewhere;

unsurprising given the federal (D.C.) jobs concentrated there. Conversely, the Lower Eastern Shore and Western Maryland exhibited relatively higher unemployment rates than elsewhere.

Annual unemployment peaked between 2009 and 2011, during and following the Great Recession, reaching 11.4% in the Lower Eastern Shore, 9.8% in Western Maryland, 8.9% in the Upper Eastern Shore, and 8.3% in Baltimore. In the Washington Suburban region, unemployment peaked at 6.7% while Maryland's statewide rate reached 7.8%. Following those recessionary peak years, unemployment rates steadily declined to historically low levels in 2019. However, similar to the national level, COVID-19 reversed that trend quickly, with extraordinary unemployment rates peaking in the second-and-third quarters of 2020, followed by a decline. On an annual basis, 2020 resulted in unemployment rates ranging between 5.8% and 8.3% for the state regions, which are not as high as during the Great Recession.

Figure 3-6
Historical Unemployment Rates (Maryland Regions)



Forecast

National unemployment rates in 2020 spiked from COVID-19. However, unemployment rate projections from the Congressional Budget Office, the Federal Reserve (FOMC), Office of Management and Budget, and Moody's expect the annual rates to normalize relatively quickly. In 2021, the forecasts range between 5.7% (CBO) to 4.5% (FOMC), and then fall further to around 4.0%, per **Figure 3-7**.

Table 3-7 provides more detail on the short-term unemployment outlook for 2021, 2022, and 2023, sourced from a wide variety of forecasters. The table is organized from most optimistic to most pessimistic forecasts for 2021. Data were compiled in July 2021 with most forecasters publishing data in June or July, with a few in April or May; the more-recently released forecasts are generally more optimistic than earlier releases, with a range from 6.0% to 4.5% in 2021,

averaging 5.5% and then declining further to 4.2% in 2022. However, these forecasts would not fully consider more recent developments related to the Delta variant of COVID-19.

Figure 3-7
Forecast U.S. Unemployment Rate

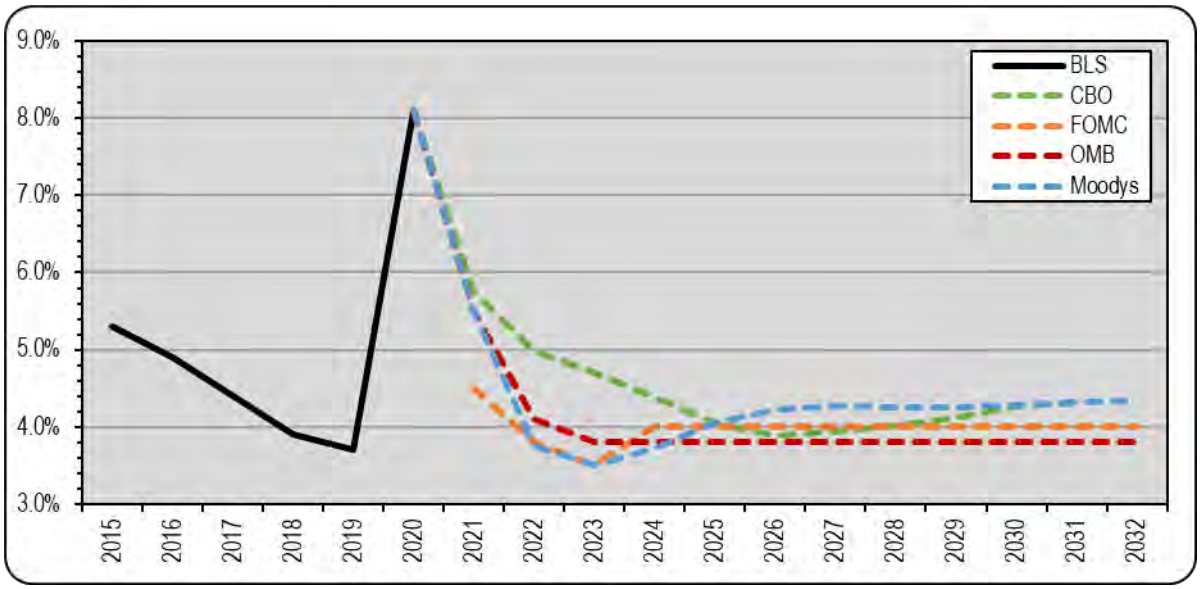


Table 3-7
Short-Term Forecast U.S. Unemployment Rate

Source	Release Date	2021	2022	2023
Federal Reserve Bank: Federal Open Market Committee (FOMC)	June 16, 2021	4.5%	3.8%	3.5%
Royal Bank of Canada (RBC) Economics	June 9, 2021	5.3%	4.2%	#N/A
Energy Information Administration (EIA): Short-Term Energy Outlook	July 7, 2021	5.4%	3.7%	#N/A
Congressional Budget Office (CBO)	June 29, 2021	5.5%	3.8%	3.7%
Moody's Analytics	July 6, 2021	5.5%	3.8%	3.5%
Office of Management and Budget (OMB)	June 14, 2021	5.5%	4.1%	3.8%
Federal Reserve Bank of Philadelphia: Survey of Professional Forecasters*	May 14, 2021	5.5%	4.4%	3.9%
Bank of Montreal (BMO) Capital Markets Economics	July 2, 2021	5.6%	4.3%	#N/A
Conference Board	July 14, 2021	5.6%	4.2%	#N/A
TD Economics	June 17, 2021	5.6%	3.9%	#N/A
Wells Fargo Securities Economics Group	July 8, 2021	5.6%	4.3%	#N/A
ScotiaBank Global Economics	June 11, 2021	5.6%	4.0%	#N/A
Organization for Economic Cooperation and Development (OECD)	May 18, 2021	5.6%	4.3%	#N/A
PNC Financial Services Group	June 23, 2021	5.6%	4.4%	3.9%
National Association for Business Economics (NABE)*	May 13, 2021	5.6%	4.3%	#N/A
University of Michigan: Research Seminar in Quantitative Economics (RSQE)	May 21, 2021	5.7%	4.8%	4.3%
International Monetary Fund (IMF): World Economic Outlook	April 6, 2021	5.8%	4.2%	3.7%
National Association of Realtors	April 27, 2021	6.0%	5.7%	#N/A
Average		5.5%	4.2%	3.8%

3.3.4 Per Capita Personal Income

Personal income indicates the relative affluence of a region's residents. Real per capita income includes the sum of wages and salaries, other labor income, proprietors' income, rental income of persons, dividend income, personal interest income, and transfer payments, less personal contributions for government social insurance, on a per-person basis. Real (above inflation) increases in per capita income can lead to an increased willingness to pay tolls.

Historical

Historical real personal income per capita, in constant 2020$[2], is presented in **Table 3-8**, from WP21. Per capita personal income nationally increased from $47,090 in 2010 to $58,358 in 2020, or 2.2% CAGR. In the Mid-Atlantic and South Atlantic, the CAGRs were 2.3% and 1.9%, respectively. Maryland's growth was 1.3%. In Maryland's regions, historical growth was lower than the nation, ranging from 1.0% in Washington Suburban to 1.8% in Western Maryland.

While historical growth was relatively slower in Maryland than nationally, the absolute real income per capita was relatively higher. At $66,365, Maryland's per capita personal income was 13.7% higher than the Nation, and 21.3% higher than the South Atlantic in 2020. The Washington Suburban region, at $72,035 in 2020, was 23.4% higher than the nation, and Baltimore's $65,832 was 12.8% higher.

Table 3-8
Historical Real Personal Income Per Capita (2020$)

Geography	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'10-'19
Total Real Personal Income/Capita (2020$)												
United States	47,090	48,409	49,578	49,199	50,879	52,875	53,391	54,658	56,075	57,158	58,358	10,068
Mid Atlantic	54,988	56,300	57,642	57,391	59,008	61,396	62,710	64,769	66,297	67,984	68,781	12,996
South Atlantic	45,380	46,340	46,901	45,902	47,495	49,560	50,143	51,341	52,471	53,230	54,727	7,849
Maryland	58,077	59,390	59,517	58,189	59,121	61,523	62,994	63,719	64,395	65,404	66,365	7,327
Baltimore	56,559	57,739	57,960	57,236	58,604	60,650	61,800	62,632	63,635	64,693	65,832	8,135
Lower Eastern Shore	41,926	42,314	42,450	42,769	44,058	46,283	45,962	46,959	46,524	46,889	48,940	4,963
Southern Maryland	55,910	56,846	56,292	55,217	55,770	57,631	58,474	58,839	59,353	60,281	62,994	4,371
Upper Eastern Shore	50,437	51,522	51,857	51,838	52,841	54,594	55,611	56,594	57,318	58,441	58,977	8,004
Washington Suburban	64,979	66,661	66,673	64,019	64,349	67,463	69,724	70,348	70,742	71,750	72,035	6,771
Western Maryland	40,987	41,686	41,972	41,987	43,067	44,396	45,166	45,397	46,061	47,071	48,935	6,084
Annual Percent Change												
United States		2.8%	2.4%	-0.8%	3.4%	3.9%	1.0%	2.4%	2.6%	1.9%	2.1%	2.2%
Mid Atlantic		2.4%	2.4%	-0.4%	2.8%	4.0%	2.1%	3.3%	2.4%	2.5%	1.2%	2.4%
South Atlantic		2.1%	1.2%	-2.1%	3.5%	4.3%	1.2%	2.4%	2.2%	1.4%	2.8%	1.8%
Maryland		2.3%	0.2%	-2.2%	1.6%	4.1%	2.4%	1.2%	1.1%	1.6%	1.5%	1.3%
Baltimore		2.1%	0.4%	-1.2%	2.4%	3.5%	1.9%	1.3%	1.6%	1.7%	1.8%	1.5%
Lower Eastern Shore		0.9%	0.3%	0.8%	3.0%	5.1%	-0.7%	2.2%	-0.9%	0.8%	4.4%	1.3%
Southern Maryland		1.7%	-1.0%	-1.9%	1.0%	3.3%	1.5%	0.6%	0.9%	1.6%	4.5%	0.8%
Upper Eastern Shore		2.2%	0.7%	0.0%	1.9%	3.3%	1.9%	1.8%	1.3%	2.0%	0.9%	1.7%
Washington Suburban		2.6%	0.0%	-4.0%	0.5%	4.8%	3.4%	0.9%	0.6%	1.4%	0.4%	1.1%
Western Maryland		1.7%	0.7%	0.0%	2.6%	3.1%	1.7%	0.5%	1.5%	2.2%	4.0%	1.5%

[2] WP21 provides real income per capita in 2012$, per current BEA data conventions; dollars in inflated to 2020$ using WP21's PCE index.

Forecast

Table 3-9 provides real personal income per capita forecasts. According to WP21, national growth is projected at 1.6% CAGR between 2021-2031; the Mid-Atlantic, South Atlantic, Maryland, and sub-state regions are expected to exhibit similar growth patterns, ranging between 1.6% and 1.7%. Moody's predicts similar CAGRs as WP21 overall, but with a different pattern, exhibiting slower growth in 2021-2026, and then higher growth from 2026-2031. Maryland's SDC forecasts a relatively slower growth than WP21, with decelerating growth around or below 1.0% CAGR; however, the data are from 2015.

Similar to the other variables, the pandemic added significant uncertainty to the future of real per capita income growth. White-collar professional industries with telecommuting opportunities and typically higher salaries were less affected than blue-collar industries with lower salaries. This will continue to be monitored moving forward.

Table 3-9
Forecast Real Personal Income Per Capita Growth

	Historical	WP21			Moody's			MD SDC		
Geography	'10-'19	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31
United States	2.2%	1.6%	1.6%	1.6%	0.8%	2.1%	1.5%	-	-	-
Mid Atlantic	2.4%	1.7%	1.7%	1.7%	0.8%	2.1%	1.5%	-	-	-
South Atlantic	1.8%	1.7%	1.6%	1.7%	0.7%	2.1%	1.4%	-	-	-
Maryland	1.3%	1.6%	1.6%	1.6%	-	-	-	1.1%	0.8%	0.9%
Baltimore	1.5%	1.8%	1.7%	1.8%	-	-	-	1.1%	0.8%	1.0%
Lower Eastern Shore	1.3%	1.5%	1.5%	1.5%	-	-	-	1.0%	0.9%	0.9%
Southern Maryland	0.8%	1.5%	1.4%	1.4%	-	-	-	1.1%	0.9%	1.0%
Upper Eastern Shore	1.7%	1.7%	1.6%	1.6%	-	-	-	1.1%	0.9%	1.0%
Washington Suburban	1.1%	1.4%	1.3%	1.4%	-	-	-	1.0%	0.7%	0.8%
Western Maryland	1.5%	1.7%	1.6%	1.6%	-	-	-	1.2%	0.9%	1.0%

3.3.5 Gross Domestic/Regional Product

Gross domestic product (national level) and gross regional product (state- and county-level) measure the value of all final goods and services produced within a geographic area and are general indicators of a region's economic activity.

Historical

Historical real gross domestic product (GDP) and gross regional product (GRP), in real 2020$[3], are presented in **Table 3-10**. Real GDP grew at 2.3% CAGR between 2010-2019, and a relatively large 3.5% annual decline in 2020 effectively reset the national economy to 2017 to 2018 levels. Growth in the Mid-Atlantic was slightly lower at 1.5%, and the South Atlantic was 0.9% due to the relatively larger COVID-19-related downturn. At 0.9%, Maryland's real GRP historical growth was about half the U.S.

[3] BEA provides real GDP and GRP in 2012$; dollars in inflated to 2020$ using WP21's PCE index. BEA provided county-level data through 2019; data for 2020 are based on WP21's growth.

Data in **Tables 3-3** and **3-5** show in 2020, Maryland comprised 9.1% of the South Atlantic's population and 9.4% of employment. **Table 3-10** shows that Maryland accounted for 13.7% of the South Atlantic's real GRP. Within Maryland, the sub-state regions of Baltimore and Washington Suburban accounted for 87.3% of Maryland's real GRP in 2020, and the region exhibited the relatively fastest historical growth within the state.

Table 3-10
Historical Real Gross Domestic/Regional Product (2020$)

Geography	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'10-'19
Gross Regional Product (2020$ billions)												
United States	17,338	17,607	18,003	18,335	18,798	19,376	19,707	20,167	20,771	21,220	20,481	3,882
Mid Atlantic	3,118	3,150	3,168	3,203	3,274	3,385	3,465	3,555	3,659	3,736	3,632	617
South Atlantic	2,675	2,681	2,761	2,782	2,822	2,879	2,923	2,958	3,029	3,083	2,924	408
Maryland	363.6	371.2	371.9	371.7	377.9	388.1	400.1	406.7	409.9	415.7	399.6	52.2
Baltimore	177.3	180.7	182.4	183.8	187.1	191.9	197.4	200.6	204.3	207.7	200.6	30.4
Lower Eastern Shore	9.7	9.7	9.6	10.0	10.4	10.8	11.0	11.0	11.0	11.1	10.6	1.4
Southern Maryland	16.6	17.1	16.8	16.6	16.9	17.2	18.0	18.3	17.5	17.9	17.3	1.3
Upper Eastern Shore	9.7	9.6	9.7	9.9	10.0	10.4	10.7	11.0	11.6	11.9	11.3	2.2
Washington Suburban	139.0	142.6	142.1	139.9	141.8	146.1	151.2	153.7	153.7	154.9	148.1	15.9
Western Maryland	11.3	11.5	11.3	11.5	11.6	11.7	12.0	12.0	12.0	12.3	11.7	1.1
Annual Percent Change												
United States		1.6%	2.2%	1.8%	2.5%	3.1%	1.7%	2.3%	3.0%	2.2%	-3.5%	2.3%
Mid Atlantic		1.0%	0.6%	1.1%	2.2%	3.4%	2.4%	2.6%	2.9%	2.1%	-2.8%	2.0%
South Atlantic		0.2%	3.0%	0.8%	1.4%	2.0%	1.5%	1.2%	2.4%	1.8%	-5.1%	1.6%
Maryland		2.1%	0.2%	0.0%	1.7%	2.7%	3.1%	1.6%	0.8%	1.4%	-3.9%	1.5%
Baltimore		1.9%	0.9%	0.8%	1.8%	2.5%	2.8%	1.7%	1.8%	1.7%	-3.4%	1.8%
Lower Eastern Shore		-0.5%	-0.6%	4.6%	3.9%	3.9%	1.2%	0.2%	-0.2%	0.8%	-4.7%	1.5%
Southern Maryland		2.9%	-1.7%	-0.9%	1.6%	1.7%	4.6%	2.0%	-4.7%	2.4%	-3.4%	0.8%
Upper Eastern Shore		-0.4%	0.4%	2.4%	1.6%	3.7%	3.2%	2.8%	4.7%	2.7%	-4.6%	2.3%
Washington Suburban		2.6%	-0.4%	-1.5%	1.4%	3.0%	3.5%	1.7%	0.0%	0.8%	-4.4%	1.2%
Western Maryland		2.3%	-1.5%	1.0%	1.2%	0.9%	2.2%	0.6%	-0.1%	2.5%	-5.4%	1.0%

Forecast

Table 3-11 provides gross domestic/regional product forecasts. Moody's national forecast growth is higher than WP21's; WP21 projects 2.0% annual real growth through 2031 while Moody's is 2.5%. WP21 projects the South Atlantic to grow faster (2.3%) than the nation, with Maryland's GRP closer to the national 2.0%. Within Maryland, the highest real GRP growth is expected in Baltimore (2.2%), Southern Maryland (2.1%) and Upper Eastern Short (2.0%).

Table 3-11
Forecast Real Gross Domestic/Regional Product Growth

	Historical	WP21			Moody's		
Geography	'10-'19	'21-'26	'26-'31	'21-'31	'21-'26	'26-'31	'21-'31
United States	2.3%	2.1%	2.0%	2.0%	2.9%	2.0%	2.5%
Mid Atlantic	2.0%	1.9%	1.8%	1.9%	-	-	-
South Atlantic	1.6%	2.3%	2.2%	2.3%	-	-	-
Maryland	1.5%	2.1%	2.0%	2.0%	-	-	-
Baltimore	1.8%	2.2%	2.1%	2.2%	-	-	-
Lower Eastern Shore	1.5%	1.7%	1.7%	1.7%	-	-	-
Southern Maryland	0.8%	2.2%	2.1%	2.1%	-	-	-
Upper Eastern Shore	2.3%	2.1%	2.0%	2.0%	-	-	-
Washington Suburban	1.2%	2.0%	1.8%	1.9%	-	-	-
Western Maryland	1.0%	1.5%	1.4%	1.4%	-	-	-

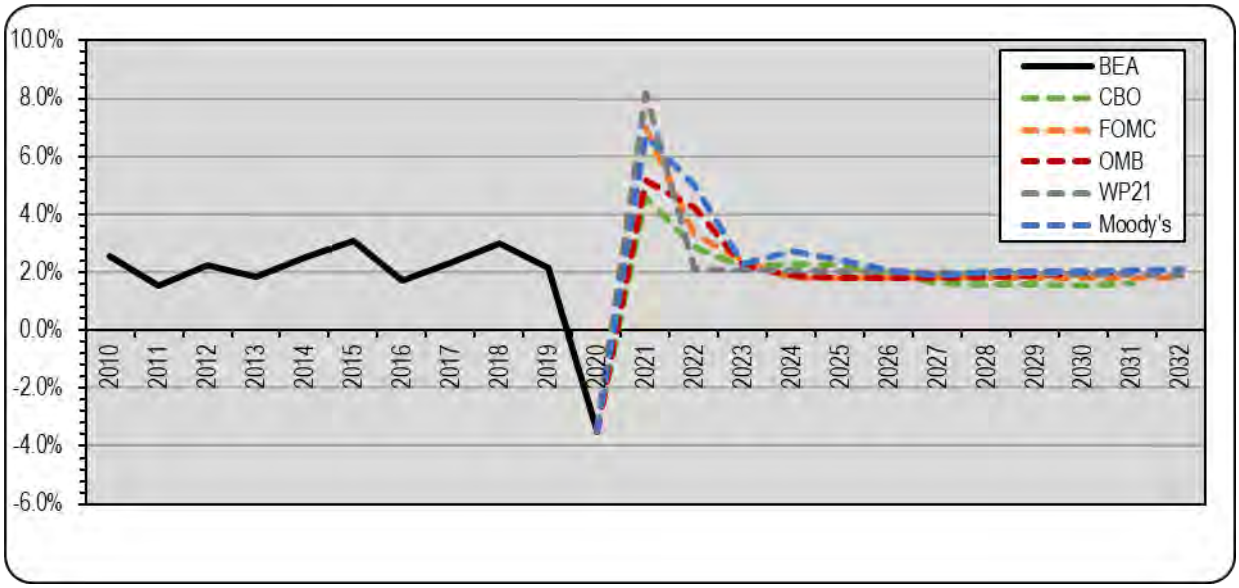
Table 3-12 provides detail on short-term GDP outlook for 2021, 2022 and 2023, sourced from various private and public sector agencies, and is organized from most optimistic to most pessimistic for 2021. As shown, most forecasters expect some rebounding growth following the contraction in 2020, with an average of 6.5% in 2021.

Table 3-12
Forecast Short-Term Real GDP Growth

Source	Release Date	2021	2022	2023
Woods & Poole Economics, Inc.	June 21, 2021	8.2%	2.1%	2.1%
Energy Information Administration (EIA): Short-Term Energy Outlook	July 7, 2021	7.4%	5.0%	#N/A
Wells Fargo Securities Economics Group	July 8, 2021	7.0%	5.7%	#N/A
Federal Reserve Bank: Federal Open Market Committee (FOMC)	June 16, 2021	7.0%	3.3%	2.4%
TD Economics	June 17, 2021	6.9%	4.3%	#N/A
Organization for Economic Cooperation and Development (OECD)	May 18, 2021	6.9%	3.6%	#N/A
Bank of Montreal (BMO) Capital Markets Economics	July 2, 2021	6.8%	4.3%	#N/A
ScotiaBank Global Economics	June 11, 2021	6.8%	4.1%	#N/A
Moody's Analytics	July 6, 2021	6.7%	5.0%	2.3%
Congressional Budget Office (CBO)	June 29, 2021	6.7%	5.0%	1.5%
Conference Board	July 14, 2021	6.6%	3.8%	2.5%
Royal Bank of Canada (RBC) Economics	June 9, 2021	6.5%	3.0%	#N/A
National Association for Business Economics (NABE)*	May 13, 2021	6.5%	4.4%	#N/A
PNC Financial Services Group	June 23, 2021	6.4%	4.3%	2.3%
International Monetary Fund (IMF): World Economic Outlook	April 6, 2021	6.4%	3.5%	1.4%
Federal Reserve Bank of Philadelphia: Survey of Professional Forecasters*	May 14, 2021	6.3%	4.3%	2.6%
University of Michigan: Research Seminar in Quantitative Economics (RSQE)	May 21, 2021	6.2%	4.2%	2.7%
Economist Intelligence Unit (EIU): Global Forecasting Service	June 15, 2021	6.0%	3.7%	2.2%
World Bank	June 22, 2021	5.4%	4.0%	2.2%
Office of Management and Budget (OMB)	June 14, 2021	5.2%	3.2%	2.0%
National Association of Realtors	April 27, 2021	4.5%	3.2%	#N/A
Average		6.5%	4.0%	2.2%

Figure 3-8 shows real GDP historical growth from 2010-2020 and forecasted growth for about the next decade by the CBO, FOMC, OMB, WP21, and Moody's. In 2021, the CBO and OMB forecast growth of around 5.0%, while the FOMC, Moody's, and WP21 project higher growth at 7.0%, 6.7%, and 8.2%, respectively. After 2021, all sources forecast a decelerating growth to over 2.0% by 2023, and continuation of that around 2.0% into the future.

Figure 3-8
Forecast Mid-Term Real GDP Growth



3.3.6 Inflation

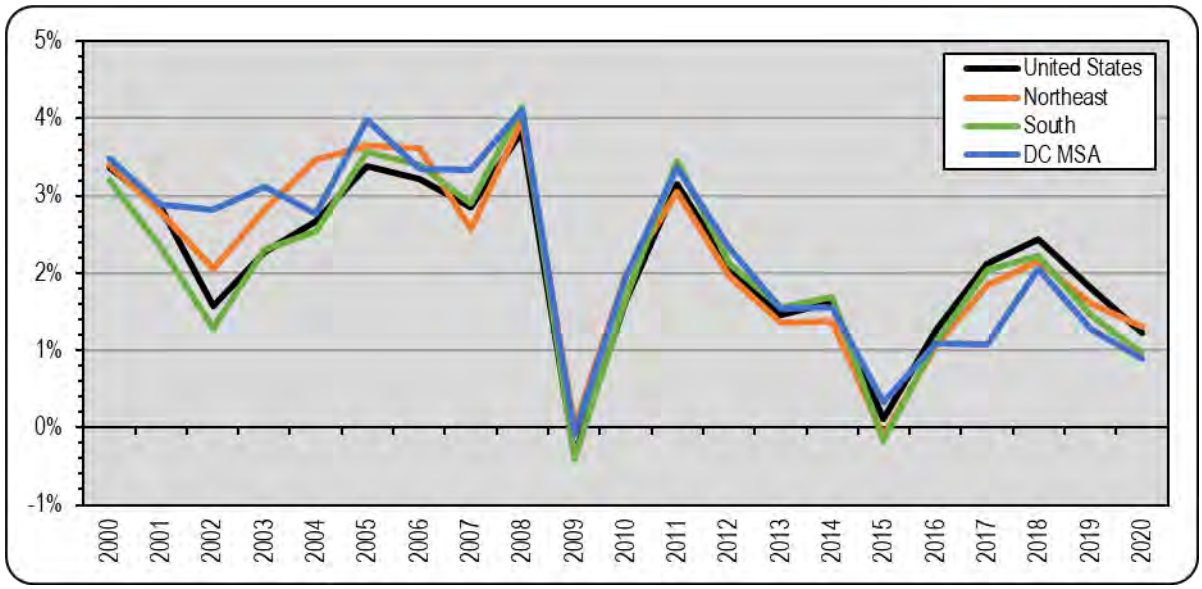
Comparing inflation rates with future toll policy plans can indicate the relative real cost of tolls over time. For example, if toll rates are unchanged during an inflation period, the real toll costs become relatively less expensive.

Historical

From 2000-2020, the national inflation rate[4] via the BLS averaged 2.1%, ranging from a high of 3.8% in 2008 to a low of -0.4% in 2009, and ending at 1.2% in 2020. **Figure 3-9** shows that from 2007-2016, inflation rates in the Northeast,[5] South,[6] and Washington DC MSA[7] closely tracked the U.S. rate. However, from 2016-2020, the U.S. inflation rate was mostly slightly higher than those of the Northeast, South, and DC MSA.

[4] Measured by the Consumer Price Index for urban consumers (CPI-U).
[5] Northeast census defined as CT, ME, MA, NH, NJ, NY, PA, RI, and VT.
[6] South census defined as AR, AL, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV.
[7] Washington-Arlington-Alexandria, DC-MD-VA-WV Metropolitan Statistical Area.

Figure 3-9
Historical Inflation (CPI-U)

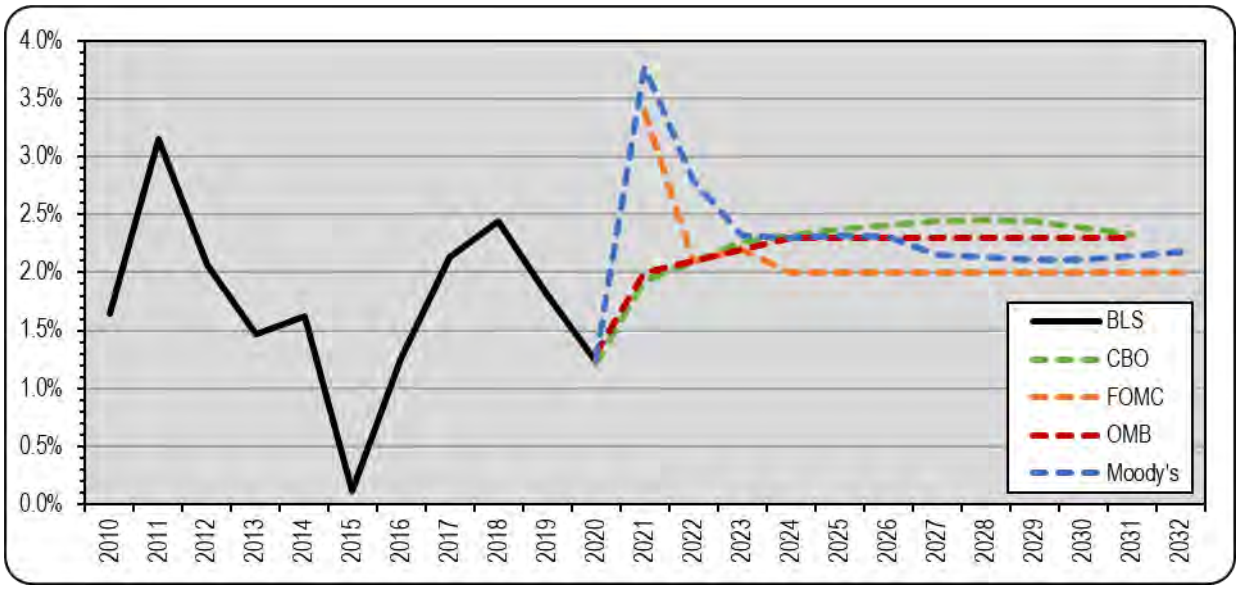


Forecast

Figure 3-10 shows the national inflation forecasts by the CBO, FOMC, OMB, and Moody's. In 2021, the CBO and OMB expect U.S. inflation around 2.0% and slightly increase in the next decade to around 2.3%. FOMC and Moody's predicts higher inflation in 2021, closer to 3.5%, then gradually declining to lower rates around 2.0% thereafter. FOMC measures inflation via the Personal Consumption Expenditure (PCE) index, which closely parallels the CPI-U measure.

Forecasts developed in early 2021 mostly illustrate tempered inflation expectations for 2021; however, as COVID-19 vaccinations were implemented and some "normalcy" returned to everyday activities, including spending patterns, sources released later in the year, such as the FOMC, exhibit a higher, temporary inflation in 2021.

Figure 3-10
Forecast Inflation (CPI-U)



3.3.7 Fuel Prices

Fuel prices are another important variable related to traffic forecasting. Fuel price increases beyond inflation leads to increasing vehicle operating cost and generally less travel, including less travel on toll facilities. In the reverse, declining fuel prices results in generally more travel.

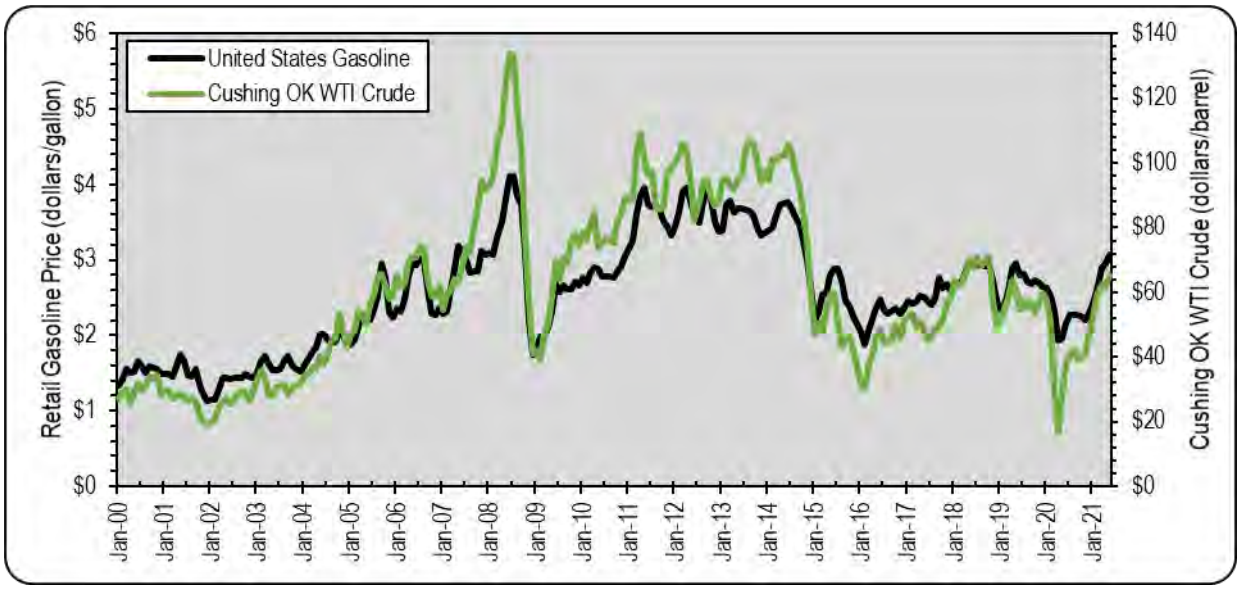
Historical

Figure 3-9 illustrates the monthly crude oil[8] and retail gasoline prices[9] from 2000 to mid-2021. The price data in **Figure 3-11** are shown in nominal dollars (i.e., current dollars)[10] and are measured by price per barrel (crude oil) and price per gallon (gasoline).

U.S. gasoline prices ranged from a low of $1.13 per gallon in December 2001 to a high of $4.11 per gallon in July 2008. Monthly gasoline prices remained below $3.00 per gallon since November 2014 until recently, with $3.08 per gallon in May 2021 and increasing. Retail gasoline prices in the Central Atlantic[11] and Lower Atlantic[12] generally tracked national prices, with the Central Atlantic typically 2.1% higher and the Lower Atlantic 2.7% lower.

[8] Cushing OK WTI (West Texas Intermediate) spot price per barrel, free on-board delivery.
[9] Retail price per gallon of unleaded gasoline, all grades, all formulations.
[10] 2000 data are presented in 2000 dollars, 2001 data in 2001 dollars, etc.
[11] Central Atlantic includes DE, DC, MD, NJ, NY and PA.
[12] Lower Atlantic includes FL, GA, NC, SC, VA and WV.

Figure 3-11
Historical Fuel Prices (Current $)

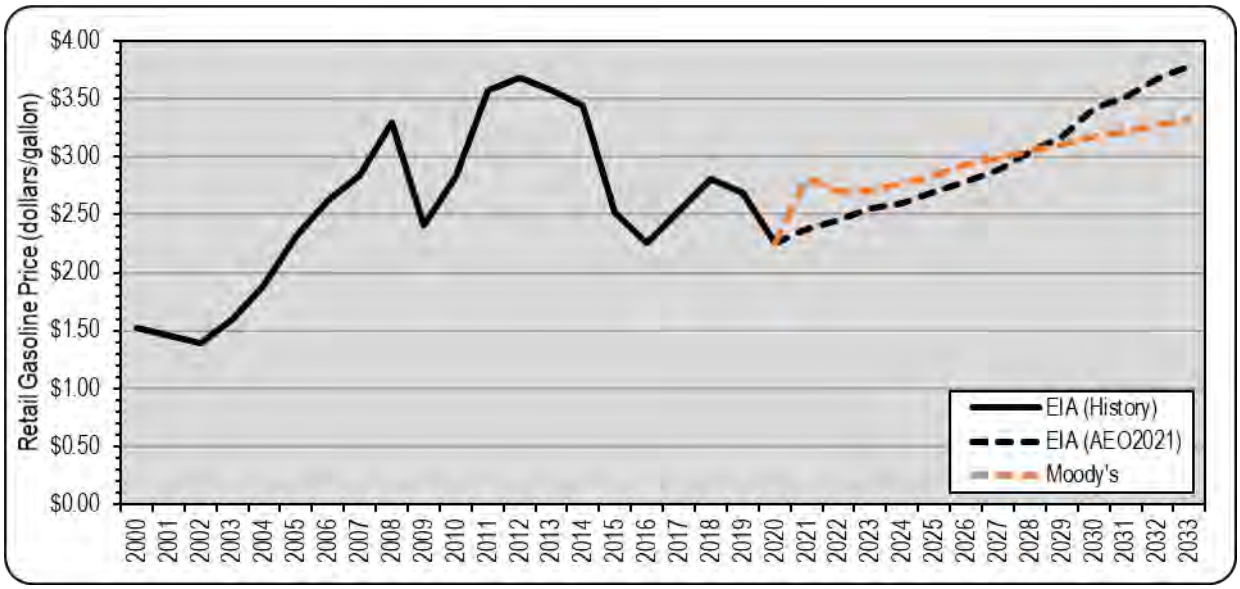


Gasoline retail prices generally mirrors crude oil prices since crude oil historically accounted for approximately 50% of gasoline's production costs. **Figure 3-8** shows that crude oil ranged from $16.55 in April 2020 to $133.88 in June 2008, a with some pronounced volatility in certain months attributable to various reasons (recessions, OPEC, hurricanes, supply/storage shortages, etc.). Crude oil averaged approximately $65.00 per barrel in 2018, $57.00 in 2019, dropping to $39.00 in 2020, mostly due to the precipitous drop in late-Spring/early-Summer with the onset of COVID-19. Since then, in the first half of 2021, prices increased to $60.00 per barrel.

Forecast

Figure 3-12 provides national gasoline price forecasts in current dollars. Retail gasoline prices, averaging $2.26 in 2020 but increasing to over $3.00 per gallon in 2021, are expected to continue increasing by the EIA and Moody's. However, the EIA's forecasts, developed in early 2021, before the steady increase, is anchored to the lower 2020 levels, and have already missed target. Moody's Analytics (July 2021) forecasts a fuel price increase to $2.82 in 2021, reduced to $2.70 in 2022 and then a steady increase to $3.32 by 2033.

Figure 3-12
Forecast Fuel Price (Current $)



3.4 Risks and Conclusion

COVID-19 has significantly impacted the economy and travel. Prior to COVID-19, economic growth was supported by low unemployment, low inflation, and gains in per capita personal income. COVID-19 caused significant and ongoing disruptions.

Because of the pandemic, some businesses, especially in certain sectors, will continue experiencing significant financial hardship. This will continue to impact employment. Some immediate and acute impacts related to business activity and employment were mitigated by Federal stimulus programs. However, additional stimulus prospects and long-term impacts are uncertain. Federal Reserve Chairman Jerome Powell has repeatedly stated the Federal Reserve expects a prolonged and erratic economic recovery. The COVID-19 recession differs from all previous recessions, since it is a public health emergency and not caused by market factors, such as a housing bubble, lax lending standards, or a troubled financial system. Even when or if the virus becomes contained, many mid- and long-term changes may persist. The short-term impacts will accelerate preexisting early-stage trends and induce new changes.

In the mid-term, supply chain industries will be indirectly impacted (such as professional, financial, and real estate) by the more significantly impacted industries (such as leisure, hospitality, education, and retail). Pessimistic consumer confidence, coupled with employment losses may contract spending. Increasing default rates and bankruptcies may hinder the recovery. Impacts and related decisions may alter trade patterns, supply chains, and demand. International trade may be impacted due to demand changes, border restrictions, and accelerated reshoring and supply-chain redundancy trends. For example, the ongoing semiconductor chip shortage will likely continue to have significant impacts on international trade in the coming years. Consumer spending may continue to focus more on essentials (for example, groceries, medical emergencies,

and necessary home improvements), and will be more often purchased via e-commerce, if possible.

In the long-term, some impacts and shifts will be institutionalized. Some industries may not fully recover or may structurally change. For example, this may include some medical care switching to telehealth and in-person college attendance switching to e-learning. Some population trend changes and impacts may occur including deferral of planned births, lower immigration, and a shift of urban to rural locales. If e-commerce and telecommuting increase even moderately, shifts may arise in commercial real estate, warehousing, distribution, and land use patterns.

Considering travel specifically, the potential macroeconomic changes would impact travel demand and patterns. Much of the immediately observed travel demand contraction in May and April 2020 has already rebounded. However, a full recovery continues to be much more gradual and protracted for some travel sectors. The risks for post-vaccination COVID-19 resurgence (mutations and effects on unvaccinated) impacts may result in another temporary travel retraction. In the mid- and long-term, some baseline travel demand may disappear entirely or shift, and other new changes in travel may emerge. Telecommuting is expected to accelerate; e-commerce will accelerate shifting passenger to delivery vehicles.

A series of COVID-19 impact factors were developed by CDM Smith to incorporate into this forecast, based on observed travel impacts thus far (per **Chapter 2**), and future outlooks and risks considerations. However, many factors are concurrent that could change travel demand dynamics positively or negatively in the mid- and long-term.

Chapter 4

Forecasts by Facility

This chapter summarizes the development of the forecasts of future year transactions and toll revenue for the MDTA system. Separate sections and discussions are provided for the overall assumptions, the Legacy facilities, ICC, I-95 ETLs, and other revenue. The 10-year annual forecast results by facility through FY 2031 are included in this chapter. Monthly forecasts for FY 2022 and FY 2023 are also included.

4.1 Assumptions

Transaction and revenue forecasts were predicated upon the following basic assumptions, which are considered reasonable by CDM Smith for purposes of the forecast:

1. The MDTA toll facilities and approach roads will continue to be well-maintained and effectively signed;
2. No competing highway projects other than those identified in this report will be constructed or significantly improved during the forecast period;
3. MDTA will continue to operate within its business rules and practices;
4. For the purposes of this forecast, it is assumed that no toll rate or toll schedule adjustments will be made during the forecasting period other than those presented in **Chapter 1**;
5. Annual revenue estimates are expressed in future year dollars (nominal);
6. No major recession, natural disasters, future pandemics, or other significant exogenous events will occur that would significantly reduce travel in the region;
7. Socioeconomic growth, including related to population and employment, will occur as presented in this study; and
8. Motor fuel will remain in adequate supply, and future price increases will not significantly exceed the long-term rate of inflation.

Any significant departure from these basic assumptions could materially affect forecasted transactions and toll revenue.

Detailed Assumptions

In addition to the basic assumptions listed above, several other more specific assumptions were made as provided in **Table 4-1**.

Table 4-1
Detailed Forecast Assumptions

Assumption Category	Assumption Detail
COVID-19 Impacts	Future ICC and I-95 ETL COVID-19 impact factors assumed are based on the lastest COVID-19 impact analysis. Legacy System passenger car COVID-19 impact factors were assumed for typical peak cold and flu months (late fall through winter) for the next few years. No future COVID-19 impact factors were assumed for Legacy System commercial vehicles.
Construction	Construction projects assumed with significant impacts to traffic and revenue include: Bay Bridge Eastbound Rehabilitation, Rehabilitation of Decks at the Curtis Creek Bascule Span Approaches, subgrade Improvements east of Bear Creek (I-695), the FSK bridge deck replacement, replacement of I-895 over I-695 bridge, BHT geometric improvements and AET gantry installation, and I-95 Northbound ETL extension.
Legacy cashless tolling	Temporary cashless tolling was introduced on the remaining Legacy system facilities with cash tolling on 3/17/2020. Permanent cashless tolling assumed for remaining Legacy facilities was announced on 8/6/2020.
3G Toll System Conversion (DriveEzMD Launch)	The new toll system was launched on 4/29/21. Customer service was not available and toll collections did not occur between 4/20/21 and 4/28/21 while the new system was brought online.
Backlogged E-ZPass Transactions	A portion of FY 2021 E-ZPass transactions from summer 2020 to March 1, 2021 were backlogged as off mid-July 2021. These include Itolls on the full system and Etolls on the ICC. It was assumed backlogged E-ZPass transactions would be collected by early May 2022.
Backlogged Video Transactions	A portion of FY 2021 video transactions from summer 2020 to March 1, 2021 were backlogged as off mid-July 2021. Also a portion of video transactions from March 2, 2021 to June 2021 were not yet invoiced as of early August 2021. It was assumed that video invoicing would all be current by the end of FY 2022. A lower than normal video payment rate was also assumed for FY 2022 due to the age of the transactions.
Video Toll Rates	This assumption is relevant for forecasting revenue collections for backlogged FY 2021 transactions. Cash toll rates for Kennedy Highway, Fort McHenry Tunnel, Harbor Tunnel, Nice/Middleton Bridge, and Bay Bridge video payment type transactions were charged through 12/31/2020. Video rates resumed on these facilities beginning 1/1/2021. The Key and Hatem Bridges, which converted to cashless in FY 2020 before the pandemic, continued to charge video toll rates (along with the ICC and I-95 ETLs) for video payment type transactions during the entire FY 2021.
Video Invoices	After pausing processing and mailing NOTDs on 3/17/2020 due to the pandemic, processing and mailing of NOTDs resumed in mid-October 2020.
Civil Penalties	Assumed $25 civil penalties for all citations beginning in FY 2021, but with delays and reductions in civil penalty collections due to the pandemic and backlogged transactions.
Vehicle Registration Holds	Was not applied in FY 2021 but will resume in FY 2022.
Tax Intercept	Was not applied in FY 2021 but will be applied in FY 2022.
Pay-by-Plate and Early Pay NOTD Payment Options	The availability of new payments methods coincided with the launch of DriveEzMD on 4/29/21. A two year ramp up to full adoption levels of these programs was assumed in the forecast.
Itolls	Itolls are video images that end up being associated with existing E-ZPass accounts and can be caused by improper transponder mounting. They are charged the base toll rate. About 45 percent of raw video images are estimated to be Itolls.
New Vehicle Classifications	Assumed the new motorcyle, 3-axle light, and 4-axle light vehicle classifications and toll rates will go into effect later in FY 2022.
Commuter & Shopper Discount Plans	The time limits for discount plans were suspended on 3/17/2020 due to the pandemic. Effective November 1, 2020, standard 45-day plan cycles resumed for E-ZPass Maryland Discount Plans and the standard 90-day plan cycle resumed for the Bay Bridge (US 50/301) Shoppers Plan. The time limits were also temporarily extended after the DriveEzMD Launch as the new system was brought online.
Toll Changes	No future toll rate changes other than those discussed above are assumed.
Forecasting Approach	All transactions and toll revenue as well as civil penalty revenue are forecasted in the month of collection (cash accounting).

As discussed previously in **Chapter 1** and shown in **Table 4-1**, several business rules were changed in FY 2021 due to the COVID-19 pandemic that led to additional assumptions for this forecast related to the backlogged transactions. The latest COVID-19 impact analysis was discussed previously in **Chapter 2**. The Pay-by-Plate payment option, Early Pay NOTD payment option, and New Vehicle Classifications are discussed in **Chapter 1**. Assumptions related to the construction projects listed in **Table 4-1** are discussed in more detail later in this chapter.

4.2 Legacy System

This section provides an overview of the development of the traffic and toll revenue forecasts for the Legacy system. The inputs to the forecast included toll rates by payment method, traffic growth forecasts, E-ZPass® participation percentages, and the impacts associated with planned roadway improvements on the Legacy facilities.

4.2.1 Forecast Methodology

Econometric models were developed and used for the Legacy system traffic growth forecasts in the March 2015 Legacy system Traffic and Revenue Study. The econometric models sought to establish correlative relationships between various socioeconomic independent variables (such as population, employment, GRP, etc.) and the dependent variable, transactions. The selected independent variables were then used in the forecasting process in the 2015 study based on the latest future year forecast data available at the time. The normal traffic growth used in this current study is based on the growth estimated in the 2015 study with growth adjustments as necessary to account for the most recent actual traffic and revenue performance. The latest historical data and forecasts of socioeconomic/independent variable data were collected and analyzed in this update, with the findings summarized in **Chapter 3**. This latest socioeconomic data was also used to form any adjustment made to normal traffic growth. Passenger car and commercial vehicle transactions were forecasted independently by facility using these normal growth rates and by benchmarking to actual pre-COVID-19 trends.

Assumptions including those related to construction impacts, the new Pay-by-Plate payment program, Early Pay NOTD payment program, and new toll rates for some vehicle classifications were then applied to the estimated normal growth rates. The end-product of the model was a baseline 10-year forecast of transactions and revenue by facility, by passenger cars and commercial vehicles, and by method of payment (electronic, video, and cash) without COVID-19 impacts and without cashless tolling. These results were then processed through a "Waterfall" analysis spreadsheet model developed by CDM Smith to estimate the impacts of cashless tolling, including leakage and violation processing. Video and ITOL revenue were then adjusted using a spreadsheet model to account for the changes in MDTA business rules and NOTD mailing of the backlog transactions listed in **Table 4-1**. Finally, transactions and revenue by facility, vehicle class, and payment type from the different files were adjusted using forecasted COVID-19 impact factors to account for impacts related to the ongoing pandemic.

4.2.2 Construction Impacts

The major construction projects expected to impact traffic and revenue on the MDTA Legacy system are described below. In reviewing these projects and estimating the traffic impacts, it was estimated that during the construction periods, some traffic would divert to the next best alternative tolled or toll-free crossing if possible, while a small portion of more discretionary trips would be suppressed.

1. **Eastbound Span of William Preston Lane, Jr Memorial Bridge (US-50)** – This project will rehabilitate the deck of the eastbound span of the William Preston Lane (Bay) Bridge. Construction is scheduled to be for three years, but the construction start time is not finalized

yet. Preliminary completion is estimated for Fall 2025. For the purposes of this study construction was assumed to start in FY 2023.

2. **Subgrade Improvements east of Bear Creek, Francis Scott Key (I-695) -** This project involves drainage repairs and replacement, major roadway subgrade improvements, and roadway paving necessary to address ongoing road and barrier settlement. The project is scheduled to begin in the Spring of 2023. Construction will require long term closure of one direction of I-695 (two lanes) and placing single lane contra flow traffic in the other travel direction. Once the improvements on the closed side is complete, traffic will be switched on to the completed roadway while the other side will be closed to perform improvements. The estimated construction duration is 24 months. For this study, construction was assumed to begin to April 2023.

3. **Rehabilitation of Decks at Curtis Creek Bascule Span, Francis Scott Key Bridge (I-695) –** This project involves replacing the deck of the approach spans of the bascule spans of both inner loop and outer loop bridges of the Curtis Creek bridge. The project is scheduled to begin in the spring of 2025. Construction will require long term closure of one direction of I-695 and placing contra flow traffic in the other travel direction. Once the deck replacement of the closed side is complete, traffic will be switched on to the completed deck while the other side will be closed to perform deck replacement. The estimated construction duration is 18 months. For this study, this project was assumed to begin after the completion of the subgrade improvements east of Bear Creek.

4. **Francis Scott Key Bridge Deck Replacement -** This project involves replacing the deck for the entire length of the bridge as well as the installation of fiberglass jacket protection system at the water pier columns. This project is scheduled to begin the spring of 2026. Construction will require long term closure of one direction of I-695 and placing contra flow traffic in the other travel direction. Once the deck replacement of the closed side is complete, traffic will be switched on to the completed deck while the other side will be closed to perform deck replacement. The estimated construction duration is 30 months.

5. **Replacement of I-895 over I-695 Bridge -** This project proposes to replace the two existing I-895 four simple span steel stringer bridges with two span continuous steel girder bridges crossing over I-695 in Lansdowne, within Baltimore County Maryland. Additional work will include replacement of existing traffic barriers and resurfacing of the roadway within the project limits. One lane will be maintained in each direction utilizing one bridge while constructing the other bridge. Construction will occur on the I-895 southbound bridge first and then on the northbound bridge. Temporary crossovers for the traffic shift and temporary concrete barriers between the two travel directions will both be used. The ramp from the I-695 outer loop to I-895 northbound will be closed when the I-895 northbound bridge is under construction. Traffic will be detoured to continue on the I-695 outer loop, use the exit to MD 295 northbound, and then to get back on I-895 northbound. Construction is anticipated to begin in 2024 and continue for three years.

6. **Baltimore Harbor Tunnel (I-895) AET Conversion -** This project supports the recent conversion of the facility to cashless tolling by permanently removing the existing toll plaza and installing a gantry tolling system. The project scope also includes geometric improvements to the adjacent interchange ramps at Childs Street, Frankfurst Avenue, and Shell Road to comply

with AASHTO standards, as well as removal and replacement of the Shell Road ramp, Frankfurst Avenue, and access road bridge structures along I-895. The project is tentatively scheduled to begin construction in 2024 with an estimated construction duration of 3 years. For this study, construction was assumed to begin April 2024.

7. **I-95 ETL Northbound Extension –** This project will involve the widening and reconstruction of I-95 northbound from MD 43 to north of MD 24 to accommodate two new ETL lanes in the northbound direction. The lane configuration from MD 43 to MD 24 will be four general purpose lanes and two ETLs. From MD 24 northbound the configuration will be three general purpose lanes and two ETLs. The ETLs will transition to a single lane ETL and then run concurrent to the three GP lanes until the four lanes transition back to three lanes in advance of the MD 136/Calvary Road Overpass approximately two miles north of MD 24. The completion of construction through the MD 152 Interchange is scheduled for the summer of 2024. The completion of construction through the MD 24 Interchange is scheduled for fall of 2027. Upon completion of the program, there will be three northbound tolling zones on the I-95 ETLs between the I-95/895 split and MD 24: from the I-95/895 split to MD 43, MD 43 to MD 152, and MD 152 to MD 24.

Additional construction projects on the MDTA facilities and competing non-MDTA highways and arterials were also reviewed, but it was determined that the construction activity associated with these projects will result in negligible impacts on MDTA traffic and toll revenue.

4.2.3 Forecast Results

Table 4-2 presents actual collected transactions and toll revenue for the Legacy system for FY 2021 and forecasted collected transactions and toll revenue for FY 2022 through FY 2031 by passenger cars and commercial vehicles. The forecasts reflect collections after assumed reductions due to unbillable and unpaid trips. **Table 4-3** provides historical and forecasted total transactions and toll revenue for the Legacy system by facility. FY 2022 transactions and revenue are forecasted to increase significantly over FY 2021 due to ongoing processing of backlogged transactions from FY 2021. Once the backlog processing of E-ZPass transactions and invoicing of video transactions is completed by the end of FY 2022, transactions and revenue are forecasted to return to levels generally more consistent with pre-pandemic transactions and revenue. Some declines are forecasted to occur in FY 2024 to FY 2026 due to the construction planned for the I-696/Francis Scott Key Bridge and I-895/Baltimore Harbor Tunnel facilities as detailed previously in **Section 4.2.2**. These projects are forecasted to cause diversion to other MDTA Legacy facilities and some diversion off the MDTA system from customers foregoing trips or using non-tolled alternatives. These changes can be observed in **Table 4-3**. After FY 2026, transactions and revenue are not assumed to be impacted by construction projects and show a normal progression through the end of the forecast period in FY 2031.

For purposes of budgeting and the tracking of actual versus forecasted transactions and revenue, monthly forecasts of transaction and toll revenue were developed for FY 2022 and FY 2023. **Table 4-4** provides the forecasted monthly transactions and **Table 4-5** provides the forecasted monthly toll revenue for the total Legacy system. Actual July 2021 data is shown for both transactions and revenue. All other monthly data presented in these tables is forecasted.

Table 4-2
Total Legacy System Forecasted Transactions and Toll Revenue Collected by Class

Fiscal Year	Transactions (Millions) [1]			Toll Revenue ($ Millions) [1]		
	PC	CV	Total	PC	CV	Total
2021 [2]	64.2	7.2	**71.5**	209.5	178.0	**387.5**
2022	109.4	10.6	**120.0**	448.1	252.2	**700.3**
2023	102.5	9.5	**112.0**	376.0	234.1	**610.0**
2024	101.2	9.5	**110.7**	367.4	233.2	**600.6**
2025	99.9	9.6	**109.5**	362.5	235.0	**597.5**
2026	100.9	9.6	**110.5**	365.9	236.6	**602.4**
2027	102.9	9.7	**112.5**	373.3	237.1	**610.4**
2028	104.8	9.7	**114.5**	380.4	237.9	**618.3**
2029	106.6	9.8	**116.5**	384.8	241.0	**625.8**
2030	107.9	9.9	**117.8**	388.2	242.1	**630.4**
2031	108.5	9.9	**118.5**	390.8	243.3	**634.0**

[1] Includes impacts due to leakage, including unpaid transactions.

[2] Represents actual data.

Table 4-3
Legacy System Historical and Forecasted Transactions and Toll Revenue Collected by Facility

Fiscal Year [1]	Transactions (Millions) [5]								Percent Growth
	JFK	Hatem	BHT	FMT	FSK	Bay	Nice	Total [2]	
2016 [3,4]	15.2	5.1	28.3	42.6	11.2	13.3	3.4	**119.0**	2.8
2017	15.5	5.1	27.6	45.4	11.3	13.6	3.4	**122.0**	2.5
2018	15.5	5.1	28.0	44.7	11.4	13.5	3.3	**121.5**	(0.3)
2019	15.2	5.1	20.8	48.2	12.8	13.6	3.3	**119.1**	(2.0)
2020 [3]	12.5	4.4	14.2	42.3	11.9	11.5	2.8	**99.6**	(16.4)
2021	8.8	3.1	11.9	29.0	8.4	8.5	1.7	**71.5**	(28.3)
2022	15.7	4.7	29.1	43.8	10.3	13.4	3.1	**120.0**	67.9
2023	14.2	4.9	28.1	40.9	8.7	12.3	2.9	**112.0**	(6.7)
2024 [3]	14.3	4.9	27.3	42.8	6.2	12.3	2.9	**110.7**	(1.1)
2025	14.4	4.9	20.7	46.2	7.9	12.4	2.9	**109.5**	(1.1)
2026	14.5	5.0	20.9	46.4	8.0	12.7	2.9	**110.5**	0.9
2027	14.7	5.0	26.5	44.0	6.6	12.8	2.9	**112.5**	1.8
2028 [3]	14.8	5.0	31.1	42.3	5.6	12.8	3.0	**114.5**	1.8
2029	14.9	5.0	29.4	42.4	8.8	12.8	3.0	**116.5**	1.7
2030	15.1	5.1	28.7	42.7	10.4	12.9	3.0	**117.8**	1.1
2031	15.2	5.1	28.8	43.0	10.4	12.9	3.0	**118.5**	0.6
Fiscal Year [1]	Toll Revenue ($ Millions) [5]								Percent Growth
	JFK	Hatem	BHT	FMT	FSK	Bay	Nice	Total [2]	
2016 [3,4]	$171.2	$11.8	$89.9	$191.3	$43.3	$52.8	$21.2	**$581.4**	2.8
2017	175.8	12.1	89.5	204.2	44.9	54.0	21.5	**601.9**	3.5
2018	177.2	11.6	91.4	205.1	45.9	53.4	20.7	**605.3**	0.6
2019	176.0	12.2	70.3	217.4	50.5	53.7	21.0	**601.1**	(0.7)
2020 [3]	154.1	11.4	47.5	194.3	47.5	46.0	17.3	**518.2**	(13.8)
2021	117.2	9.2	39.8	141.5	35.7	33.0	10.8	**387.4**	(25.2)
2022	202.1	13.8	114.8	235.4	50.4	61.2	22.6	**700.3**	80.8
2023	180.6	12.1	99.7	206.6	40.1	51.3	19.6	**610.0**	(12.9)
2024 [3]	180.0	12.0	95.9	211.1	30.2	51.6	19.8	**600.6**	(1.5)
2025	181.4	12.1	73.1	222.8	36.2	51.8	20.0	**597.5**	(0.5)
2026	182.8	12.2	73.7	223.7	36.4	53.4	20.1	**602.4**	0.8
2027	184.2	12.2	93.0	215.4	31.6	53.6	20.3	**610.4**	1.3
2028 [3]	185.6	12.3	108.4	209.6	28.1	53.9	20.5	**618.3**	1.3
2029	187.1	12.4	100.9	209.1	41.6	54.1	20.6	**625.8**	1.2
2030	188.5	12.5	98.6	210.1	45.7	54.3	20.8	**630.4**	0.7
2031	189.9	12.5	99.2	211.0	45.9	54.6	20.9	**634.0**	0.6

[1] Actual data presented for FY 2015 through FY 2021.

[2] Summations may not equal total due to rounding.

[3] Leap Year

[4] Year of toll decrease.

[5] Includes impacts due to leakage, including unpaid transactions.

Table 4-4
Monthly Collected Transactions by Method of Payment
FY 2022 and FY 2023

Month	Passenger Cars (2-Axle)							Commercial Vehicles (3+ Axle)			Total [1]
	Commuters & Shoppers	MD E-ZPass	Full Fare E-ZPass	Video	Official Duty	Hatem Plan A & B	Total 2-Axle	E-ZPass	Video	Total 3+ Axle	
FY 2022											
July	1.602	3.320	5.323	0.234	-	0.151	**10.629**	1.293	0.212	**1.506**	**12.135**
August	2.100	3.057	2.425	0.414	0.088	0.325	**8.409**	0.791	0.014	**0.805**	**9.214**
September	2.057	2.944	1.931	1.249	0.093	0.320	**8.594**	0.777	0.048	**0.825**	**9.419**
October	2.292	2.870	2.089	1.683	0.103	0.322	**9.359**	0.776	0.062	**0.838**	**10.196**
November	2.044	2.920	2.074	1.766	0.087	0.304	**9.194**	0.752	0.061	**0.812**	**10.007**
December	1.995	2.993	2.168	1.854	0.084	0.307	**9.400**	0.797	0.059	**0.856**	**10.256**
January	2.131	2.676	1.636	1.829	0.089	0.294	**8.656**	0.733	0.064	**0.797**	**9.453**
February	1.943	2.616	1.598	1.800	0.084	0.282	**8.322**	0.687	0.055	**0.742**	**9.064**
March	2.216	2.526	1.973	1.873	0.101	0.331	**9.020**	0.796	0.071	**0.868**	**9.888**
April	2.202	2.363	2.358	1.906	0.095	0.328	**9.252**	0.775	0.071	**0.846**	**10.097**
May	2.170	2.477	2.223	1.980	0.092	0.338	**9.280**	0.766	0.075	**0.840**	**10.120**
June	2.048	2.562	2.213	2.024	0.089	0.335	**9.271**	0.774	0.079	**0.853**	**10.124**
FY TOTAL	**24.801**	**33.324**	**28.011**	**18.610**	**1.004**	**3.636**	**109.387**	**9.717**	**0.869**	**10.586**	**119.973**
FY 2023											
July	2.131	2.709	2.325	2.080	0.092	0.328	**9.664**	0.718	0.072	**0.790**	**10.454**
August	2.107	2.727	2.348	1.763	0.088	0.342	**9.375**	0.767	0.063	**0.831**	**10.206**
September	2.045	2.623	1.874	1.703	0.092	0.330	**8.667**	0.744	0.064	**0.808**	**9.475**
October	2.264	2.511	1.999	1.501	0.102	0.325	**8.703**	0.757	0.053	**0.810**	**9.514**
November	2.028	2.581	2.002	1.380	0.087	0.310	**8.388**	0.743	0.047	**0.790**	**9.178**
December	1.969	2.627	2.105	1.292	0.083	0.307	**8.383**	0.742	0.044	**0.786**	**9.169**
January	2.113	2.340	1.564	1.301	0.089	0.300	**7.707**	0.713	0.049	**0.762**	**8.469**
February	1.928	2.301	1.534	1.127	0.083	0.287	**7.259**	0.666	0.041	**0.707**	**7.966**
March	2.228	2.337	1.927	1.183	0.102	0.340	**8.117**	0.762	0.045	**0.806**	**8.924**
April	2.163	2.340	2.270	1.448	0.094	0.330	**8.645**	0.734	0.052	**0.785**	**9.430**
May	2.158	2.472	2.205	1.454	0.091	0.345	**8.725**	0.783	0.055	**0.838**	**9.563**
June	2.036	2.565	2.240	1.552	0.089	0.338	**8.821**	0.769	0.058	**0.827**	**9.648**
FY TOTAL	**25.169**	**30.132**	**24.394**	**17.784**	**1.092**	**3.883**	**102.454**	**8.898**	**0.643**	**9.541**	**111.995**

[1] Includes impacts due to leakage, including unpaid transactions. Summations may not equal total due to rounding.

Table 4-5
Monthly Collected Toll Revenue by Method of Payment
FY 2022 and FY 2023

Month	Passenger Cars (2-Axle)							Commercial Vehicles (3+ Axle)			Total [1]
	Commuters & Shoppers	MD E-ZPass	Full Fare E-ZPass	Video	Official Duty	Hatem Plan A & B	Total 2-Axle	E-ZPass	Video	Total 3+ Axle	
FY 2022											
July	$ 2.347	$ 10.900	$ 27.590	$ 0.088	$ -	$ -	**$ 40.925**	$ 32.101	$ 0.342	**$ 32.443**	**$ 73.368**
August	3.004	14.240	12.046	2.300	-	-	**31.591**	18.676	0.348	**19.025**	**50.615**
September	3.016	13.919	9.750	6.962	-	-	**33.647**	18.314	1.213	**19.527**	**53.175**
October	3.395	13.761	10.666	9.457	-	-	**37.279**	18.442	1.598	**20.040**	**57.318**
November	2.945	13.653	10.343	10.026	-	-	**36.967**	17.881	1.596	**19.478**	**56.445**
December	2.842	13.784	10.707	12.405	-	-	**39.737**	18.829	1.834	**20.663**	**60.401**
January	3.209	12.808	8.373	12.324	-	-	**36.715**	17.298	1.985	**19.283**	**55.998**
February	2.852	12.441	8.055	12.576	-	-	**35.924**	16.264	1.778	**18.042**	**53.966**
March	3.290	12.502	9.996	12.521	-	-	**38.308**	18.763	2.223	**20.986**	**59.294**
April	3.200	12.535	11.886	12.736	-	-	**40.357**	18.345	2.182	**20.527**	**60.885**
May	3.151	13.167	11.553	12.911	-	-	**40.782**	18.792	2.246	**21.039**	**61.820**
June	2.930	8.169	11.181	13.550	-	-	**35.830**	18.760	2.422	**21.182**	**57.012**
FY TOTAL	**$ 36.181**	**$ 151.881**	**$ 142.146**	**$ 117.854**	**$ -**	**$ -**	**$ 448.062**	**$ 232.467**	**$ 19.769**	**$ 252.235**	**$ 700.297**
FY 2023											
July	$ 3.072	$ 8.693	$ 11.915	$ 13.306	$ -	$ -	**$ 36.985**	$ 17.304	$ 2.039	**$ 19.343**	**$ 56.329**
August	3.012	8.681	11.862	11.619	-	-	**35.174**	18.476	1.872	**20.348**	**55.522**
September	3.001	8.490	9.706	11.036	-	-	**32.233**	17.905	1.872	**19.777**	**52.010**
October	3.353	8.279	10.438	9.806	-	-	**31.876**	18.367	1.582	**19.949**	**51.825**
November	2.924	8.278	10.226	8.994	-	-	**30.423**	17.979	1.421	**19.400**	**49.823**
December	2.810	8.347	10.694	8.518	-	-	**30.369**	17.880	1.328	**19.208**	**49.578**
January	3.182	7.764	8.240	8.358	-	-	**27.544**	17.219	1.455	**18.674**	**46.218**
February	2.834	7.528	7.946	7.362	-	-	**25.670**	16.080	1.242	**17.322**	**42.991**
March	3.309	7.682	10.006	7.875	-	-	**28.872**	18.373	1.374	**19.746**	**48.618**
April	3.146	7.541	11.715	9.560	-	-	**31.962**	17.754	1.532	**19.286**	**51.248**
May	3.132	7.966	11.327	9.657	-	-	**32.082**	19.017	1.650	**20.667**	**52.749**
June	2.915	8.197	11.336	10.336	-	-	**32.784**	18.578	1.757	**20.335**	**53.119**
FY TOTAL	**$ 36.690**	**$ 97.448**	**$ 125.410**	**$ 116.427**	**$ -**	**$ -**	**$ 375.975**	**$ 214.932**	**$ 19.122**	**$ 234.054**	**$ 610.029**

[1] Includes impacts due to leakage, including unpaid transactions. Summations may not equal total due to rounding.

4.3 Intercounty Connector

4.3.1 Forecast Methodology and Assumptions

Base ICC annual collected trip and toll revenue forecasts were made using a review and analysis of the most recent historical trends (pre-pandemic) and adjusting base growth rates estimated in the most recent previous ICC forecast update, as necessary. Additionally, updated COVID-19 impact factors were applied to the resulting base forecasts. Estimated trips and revenue reflects collected toll revenue by MDTA after assumed reductions due to leakage of unbillable and unpaid trips. The forecasts assume the assumptions listed in **Section 4.1**, including the assumptions listed in **Table 4-1** related to MDTA business rules, such as NOTD invoicing, new payment methods, and new classifications.

Related to other projects that may potentially impact the ICC, previous sketch-level modeling of the impacts of the Maryland I-495 and I-270 Managed Lanes Traffic Relief Plan (TRP) on the ICC showed the potential for impacts on ICC traffic. The TRP is broken down into multiple phases. On May 12, 2021 the recommended preferred alternative (RPA) for the TRP program was announced to be American Legion Bridge I-270 to I-370 (Phase 1 South). This RPA focuses solely on building a new American Legion Bridge and delivering two high occupancy toll (HOT) managed lanes in each direction on Phase 1 South. No action was taken on the remainder of I-495 east of the I-270 eastern spur. Based on sketch-level modeling, Phase 1 South is not anticipated to have any negative impacts on the ICC forecast projections and could instead have a positive impact. In the future should other phases of the TRP program advance, the potential impacts would need to be monitored. Sketch-level modeling has shown that the ICC appeared to be negatively impacted by priced managed lanes on the I-495 north beltway between I-270 and I-95, as this section of I-495 is parallel to and serves as an alternative route to the ICC for some trips.

4.3.2 Forecast Results

Table 4-6 provides the Intercounty Connector actual collected trips and revenue for FY 2021 and the forecasted collected trips and revenue for FY 2022 through FY 2031, by ETC and video. Due to the changes in MDTA business rules discussed previously in the Legacy section, ETC and video transactions and revenue are forecasted to increase significantly in FY 2022 over FY 2021 but will be back to normal levels by FY 2023 and remain stable through the end of the forecast in FY 2031.

For purposes of budgeting and the tracking of actual versus forecasted transactions and revenue, monthly forecasts of transaction and toll revenue were developed for FY 2022 and FY 2023. **Table 4-7** presents the Intercounty Connector monthly forecasted trips and collected toll revenue for FY 2022 and FY 2023. Actual July 2021 data is shown for transactions and revenue. All other monthly data presented in this table is forecasted.

Table 4-6
Intercounty Connector Forecasted Collected Annual Trips and Collected Toll Revenue

Fiscal Year	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
	E-ZPass	Video	Total	E-ZPass	Video	Total
2021 [2]	9.4	1.5	**10.9**	17.4	2.6	**20.0**
2022	43.7	2.8	**46.5**	75.9	8.0	**83.9**
2023	35.8	2.9	**38.7**	62.6	8.5	**71.2**
2024	36.9	2.8	**39.8**	64.7	8.2	**72.9**
2025	37.7	2.9	**40.5**	66.0	8.4	**74.4**
2026	38.4	2.9	**41.3**	67.3	8.6	**75.9**
2027	39.2	3.0	**42.2**	68.6	8.7	**77.4**
2028	40.0	3.0	**43.0**	70.0	8.9	**78.9**
2029	40.8	3.1	**43.9**	71.4	9.1	**80.5**
2030	41.6	3.2	**44.7**	72.8	9.3	**82.1**
2031	42.2	3.2	**45.4**	73.9	9.4	**83.3**

[1] Includes impacts due to leakage, including unpaid transactions.

[2] Represents actual data.

Table 4-7
Intercounty Connector Forecasted Collected Monthly Trips and Collected Toll Revenue

Month	Trips (Millions) [1]				Toll Revenue ($ Millions) [1]			
	PC E-ZPass	CV E-ZPass	Video	Total	PC E-ZPass	CV E-ZPass	Video	Total
FY 2022								
July	4.259	0.179	0.030	**4.468**	$ 7.193	$ 1.253	$ 0.076	**$ 8.522**
August	4.011	0.086	0.108	**4.205**	6.460	0.563	0.283	**7.306**
September	3.948	0.076	0.211	**4.235**	6.357	0.501	0.548	**7.406**
October	4.144	0.082	0.269	**4.496**	6.674	0.541	0.695	**7.909**
November	3.938	0.076	0.286	**4.299**	6.342	0.496	0.738	**7.575**
December	3.835	0.073	0.266	**4.174**	6.175	0.477	0.785	**7.437**
January	3.660	0.064	0.259	**3.984**	5.890	0.411	0.776	**7.077**
February	2.819	0.064	0.292	**3.175**	4.536	0.411	0.900	**5.847**
March	3.082	0.083	0.254	**3.420**	4.959	0.533	0.756	**6.248**
April	3.084	0.085	0.257	**3.426**	4.962	0.545	0.755	**6.262**
May	2.984	0.086	0.286	**3.356**	4.801	0.552	0.823	**6.177**
June	2.906	0.092	0.302	**3.300**	4.676	0.590	0.887	**6.154**
FY TOTAL	**42.670**	**1.047**	**2.821**	**46.538**	**$ 69.025**	**$ 6.872**	**$ 8.021**	**$ 83.919**
FY 2023								
July	2.791	0.088	0.283	**3.161**	$ 4.490	$ 0.561	$ 0.834	**$ 5.885**
August	2.941	0.098	0.254	**3.293**	4.732	0.630	0.753	**6.115**
September	2.876	0.085	0.279	**3.240**	4.627	0.543	0.838	**6.008**
October	3.058	0.092	0.264	**3.414**	4.921	0.587	0.787	**6.296**
November	2.907	0.085	0.253	**3.245**	4.678	0.546	0.751	**5.975**
December	2.738	0.082	0.216	**3.035**	4.406	0.523	0.633	**5.562**
January	2.582	0.074	0.216	**2.872**	4.155	0.476	0.640	**5.270**
February	2.489	0.073	0.219	**2.781**	4.005	0.466	0.656	**5.127**
March	3.053	0.093	0.190	**3.336**	4.912	0.597	0.552	**6.061**
April	2.992	0.091	0.221	**3.304**	4.814	0.585	0.648	**6.047**
May	3.179	0.098	0.239	**3.515**	5.115	0.625	0.702	**6.442**
June	3.110	0.100	0.256	**3.465**	5.004	0.640	0.749	**6.393**
FY TOTAL	**34.715**	**1.058**	**2.889**	**38.662**	**$ 55.858**	**$ 6.779**	**$ 8.544**	**$ 71.180**

[1] Includes impacts due to leakage, including unpaid transactions.

4.3.3 Capacity Check

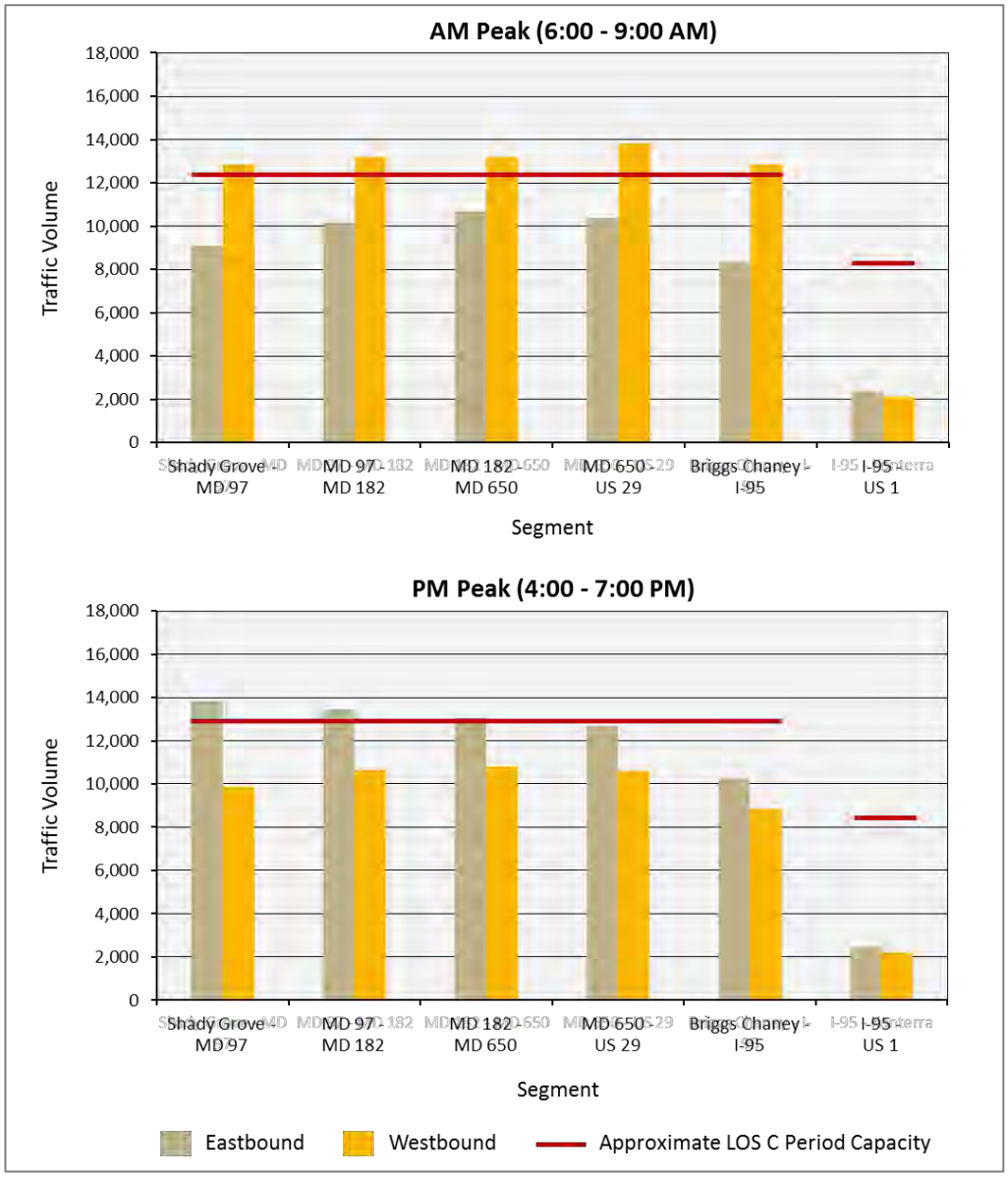
One consideration for the future-year traffic volumes was whether travel demand along the individual mainline segments would exceed a theoretical capacity of the ICC. Although MDTA has not determined what threshold might trigger congestion-managed toll increases, for the purposes of this analysis it was assumed that "Level of Service C" represented that threshold. **Figure 4-1** illustrates the relationship between the theoretical "Level of Service C" Peak Period capacity and the estimated FY 2040 volumes during the AM Peak (6:00 to 9:00 AM) and PM Peak (4:00 to 7:00 PM) Periods on the ICC by segment and direction. Other important assumptions related to this analysis are listed below:

- This analysis focused on the mainlines of the ICC and not any potential future operational issues that could be experienced at ramp junctions or intersections.
- Given the uncertainty in peak period future ICC volumes due to COVID-19, this capacity check analysis is unchanged from the last pre-COVID-19 forecast.
- This capacity analysis does not include potential impacts on the ICC due to the proposed I-495 and I-270 Managed Lanes project.

As is shown in the figure, FY 2040 estimated average Peak Period volumes on the ICC range between about 8,500 and 14,000 vehicles during the AM and PM Peak Periods and directions west of I-95, with the westbound direction in the AM Peak forecasted to exceed "Level of Service C" in all segments by 2040. The eastbound direction in the PM Peak is forecasted to exceed capacity in three of the five segments. The ICC section between I-95 and US 1 is estimated to carry between 2,000 and 2,500 vehicles during both the AM and PM Peak Periods, which is much less than the theoretical "Level of Service C" capacity for this section.

This analysis, which is based on estimated average weekday travel volumes along the ICC mainline travel segments in the peak month of travel, indicates toll increases would be required to maintain "Level of Service C" travel conditions. It is estimated that the westbound travel direction during the AM Peak could begin exceeding capacity in FY 2033 and the eastbound direction in the PM Peak in FY 2036. However, specific hourly traffic volumes will vary by day and hour within the peaks, and it is probable that the "Level of Service C" threshold will be reached in certain segments, travel directions, and hours sooner than FY 2031.

Figure 4-1
FY 2040 Estimated AM and PM Period Segment Volumes
by Mainline Segment and Direction



Note: Although MDTA has not determined what Level of Service threshold might trigger congestion managed toll increases, for purposes of this analysis, it is assumed that "Level of Service C" would be the maximum threshold (indicated by the red line).

4.4 I-95 ETLs

4.4.1 Forecast Methodology and Assumptions

The I-95 ETL forecasts were made using a spreadsheet modeling methodology. The spreadsheet model was calibrated to actual pre-COVID-19 I-95 ETL traffic and revenue performance and was then used to forecast future traffic and revenue for the existing ETL section and the future ETL extensions.

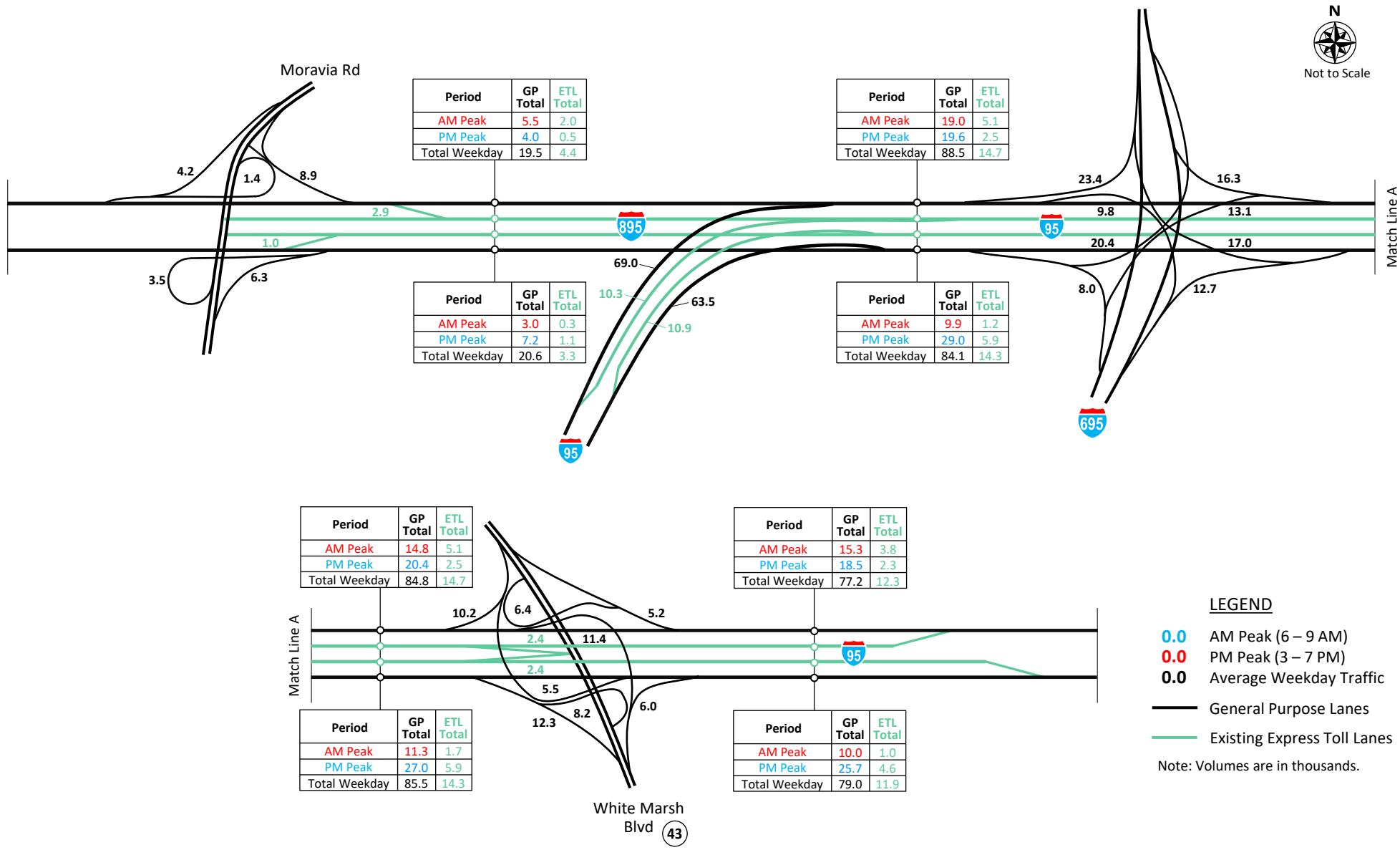
To develop the I-95 ETL forecast spreadsheet model, a series of counts were first obtained from the Maryland ITMS count monitoring site to produce a 2019 average weekday traffic profile. The profile was balanced to 2019 levels so to provide a "normal" traffic profile excluding any impacts of the COVID-19 pandemic. Using the available mainline and ramp locations within the I-95 ETL corridor, the traffic data was balanced through the corridor on an hourly basis and by total passenger cars and commercial vehicles. The results of this balancing analysis are summarized for the AM and PM peak period and total weekday in **Figure 4-2**. In addition to the traffic profile, average weekday speeds in the general purpose and express lanes were obtained from the speed data provider INRIX and incorporated into the model.

The balanced traffic profile and speed data were used to calibrate the tolling algorithms built into the spreadsheet model and to recognize the different peaking patterns by time of day and direction. Similar to a full travel demand model for a priced managed lane forecast, the spreadsheet model tolling algorithm considered value of time, toll rates, travel time savings, and travel time reliability to estimate demand for the ETL.

Once the spreadsheet model was calibrated, it was used to develop the 10-year forecast. The I-95 ETL forecast used the assumptions described in **Section 4.1**, including the detailed assumptions related to methods of payment and vehicle classifications. Also included for the I-95 ETL forecast was the assumption of the future northbound extension. This project will include widening and construction of the I-95 ETLs northbound from MD 43 to beyond MD 24 to accommodate two ETL lanes as detailed in the construction impacts discussion within **Section 4.2**. A schematic showing the I-95 ETL extensions is included in **Chapter 1**. A baseline growth forecast was applied to estimate future volumes on the corridor Based on the calibrated settings within the model, the future year models estimated what percent of traffic will choose to use the ETLs based on capacity, estimated future speeds within the corridor, value of time, toll rates, and travel time reliability.

The spreadsheet model was developed without COVID-19 impacts. COVID-19 impact factors were then applied to the forecast results without COVID-19.

2020 Traffic and Toll Revenue Forecast Update – Total System



I-95 EXPRESS TOLL LANES (ETL)
2019 AVERAGE WEEKDAY TRAFFIC

FIGURE 4-2

4.4.2 Forecast Results

Table 4-8 provides the forecasted collected annual trips and collected toll revenue for the I-95 ETL existing section through MD 43. **Table 4-9** provides the forecasted annual trips and toll revenue for the total of the existing section and extensions of the I-95 ETLs. Access changes to and from the ETLs are planned with the opening of the extensions. The access changes are forecasted to cause trips to decrease with the extensions compared to without the extensions. However, revenue is forecasted to increase with the extensions due to longer trips on the facility.

Table 4-8
I-95 ETL Existing Section Forecasted Collected Annual Trips and Toll Revenue

Fiscal Year	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
	PC	CV	Total	PC	CV	Total
2021 [2]	4.8	0.4	**5.1**	5.8	1.9	**7.7**
2022	9.8	0.6	**10.4**	12.1	2.8	**14.9**
2023	10.9	0.7	**11.6**	13.5	3.2	**16.7**
2024	11.5	0.8	**12.3**	14.3	3.5	**17.8**
2025	12.1	0.9	**13.0**	15.0	3.7	**18.8**
2026	12.7	0.9	**13.6**	15.8	4.0	**19.8**
2027	13.3	1.0	**14.3**	16.5	4.3	**20.8**
2028	13.9	1.1	**15.0**	17.3	4.6	**21.9**
2029	14.6	1.2	**15.7**	18.1	5.0	**23.1**
2030	15.2	1.2	**16.4**	18.9	5.3	**24.2**
2031	15.9	1.3	**17.2**	19.7	5.7	**25.4**

[1] Includes impacts due to leakage, including unpaid transactions.

[2] Represents actual data.

Table 4-9
I-95 ETL Total with Extensions Forecasted Collected Annual Trips and Toll Revenue

Fiscal Year	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
	PC	CV	Total	PC	CV	Total
2021 [2]	4.8	0.4	**5.1**	5.8	1.9	**7.7**
2022	9.8	0.6	**10.4**	12.1	2.8	**14.9**
2023	10.9	0.7	**11.6**	13.5	3.2	**16.7**
2024	11.5	0.8	**12.3**	14.3	3.5	**17.8**
2025	11.6	0.8	**12.4**	15.8	3.7	**19.6**
2026 [3]	11.6	0.8	**12.4**	17.4	4.1	**21.5**
2027	12.2	0.9	**13.0**	18.3	4.4	**22.7**
2028 [4]	13.0	0.9	**13.9**	19.9	4.8	**24.8**
2029	13.7	1.0	**14.7**	21.7	5.3	**26.9**
2030	14.4	1.1	**15.5**	22.8	5.7	**28.5**
2031	15.1	1.1	**16.2**	23.9	6.1	**30.0**

[1] Includes impacts due to leakage, including unpaid transactions.

[2] Represents actual data.

[3] Phase 1 of northbound extension assumed opening on Jan 1, 2025.

[4] Phase 2 of northbound extension assumed opening on Jan 1, 2028.

For purposes of budgeting and the tracking of actual versus forecasted trips and revenue, monthly forecasts of collected trips and toll revenue were developed for FY 2022 and FY 2023. **Table 4-10** provides the monthly forecasted collected trips and toll revenue for the I-95 ETLs by passenger car and commercial vehicle. Actual July 2021 data is shown for transactions and revenue. All other monthly data presented in this table is forecasted.

Table 4-10
I-95 ETL Forecasted Monthly Collected Trips and Toll Revenue

Month	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
	PC	CV	Total	PC	CV	Total
FY 2022						
July	1.153	0.084	**1.237**	1.388	0.416	**1.804**
August	0.839	0.051	**0.890**	1.043	0.223	**1.265**
September	0.717	0.049	**0.766**	0.891	0.212	**1.103**
October	0.870	0.054	**0.924**	1.081	0.235	**1.317**
November	0.795	0.051	**0.845**	0.988	0.219	**1.207**
December	0.795	0.053	**0.848**	0.988	0.230	**1.218**
January	0.588	0.041	**0.629**	0.732	0.177	**0.909**
February	0.684	0.042	**0.726**	0.851	0.180	**1.031**
March	0.721	0.051	**0.772**	0.897	0.222	**1.118**
April	0.885	0.052	**0.937**	1.100	0.227	**1.326**
May	0.868	0.056	**0.924**	1.079	0.242	**1.320**
June	0.856	0.056	**0.912**	1.063	0.243	**1.306**
FY TOTAL	**9.771**	**0.640**	**10.412**	**$ 12.101**	**$ 2.825**	**$ 14.926**
FY 2023						
July	0.981	0.060	**1.042**	1.216	0.264	**1.480**
August	0.953	0.063	**1.016**	1.180	0.276	**1.456**
September	0.827	0.059	**0.886**	1.024	0.259	**1.283**
October	0.978	0.064	**1.043**	1.212	0.283	**1.495**
November	0.920	0.062	**0.982**	1.140	0.272	**1.412**
December	0.918	0.063	**0.980**	1.137	0.275	**1.412**
January	0.687	0.051	**0.738**	0.851	0.223	**1.073**
February	0.793	0.051	**0.844**	0.982	0.225	**1.207**
March	0.841	0.062	**0.903**	1.042	0.274	**1.315**
April	1.009	0.062	**1.071**	1.250	0.273	**1.522**
May	0.986	0.068	**1.054**	1.221	0.298	**1.519**
June	0.972	0.066	**1.038**	1.204	0.291	**1.495**
FY TOTAL	**10.864**	**0.732**	**11.596**	**$ 13.457**	**$ 3.213**	**$ 16.670**

[1] Includes impacts due to leakage, including unpaid transactions.

4.5 Other Revenue

4.5.1 Forecast Methodology and Assumptions

In addition to collected toll revenue, MDTA also collects "Other Revenue" associated with the operation of its facilities. These have been summarized into the following categories:

1. Unused Commuter and Shoppers Plan Trips
2. Transponder Fees and Sales
    a. Transponder sales
    b. Monthly Service Fees
3. Hatem E-ZPass® program
4. Violation Recovery
5. Commercial Vehicles Fees and Discounts
    a. Post-Usage Discount
    b. High Frequency Discount
    c. Over-Size Permit Fee

The following sub-sections provide a description of each of the other revenue categories that are considered in this forecast. Not that previously CDM Smith also included another category called concession revenue in the annual forecast update. At the direction of MDTA, in this forecast concession revenue is no longer included in other revenue.

Unused Commuter and Shoppers Plan Trips

MDTA provides customers the option to enroll in commuter plans which provide discounts for frequent trips. As discussed previously in **Chapter 1,** MDTA offers three different Commuter Plans based on the facilities included in the plan as well as a Shoppers Plan. All plans allow customers to purchase a large number of discounted trips that must be used in a specific time period. Any remaining balance after the time periods have expired is included in other revenue as "unused pre-paid trip revenue".

Transponder Fees and Sales

As of May 23, 2018, the $7.50 cost for the Standard E-ZPass® transponder was eliminated, while costs for the Exterior and Fusion transponders remained unchanged at $15.00 and $50.00, respectively. The Standard is the more typical windshield mounted transponder, the Exterior is mounted to a passenger car's front license plate, and the Fusion is for commercial vehicles such as trucks and RVs.

Prior to July 1, 2015, account holders were subject to a monthly account fee of $1.50. Accounts making three-or-more transactions per month were exempt from this fee, but any user with less than three transactions were charged. As of July 1, 2015, this monthly account fee was eliminated for Maryland E-ZPass® account holders.

Hatem E-ZPass® Program

The Hatem Bridge E-ZPass® Program provides drivers with two possible plan options. Choice A allows drivers with a two-axle vehicle to pay $20 per year for unlimited trips plus a transponder fee without any additional fees or prepaid toll deposits. However, this plan allows the E-ZPass® to only be used on the Hatem Bridge, and cannot be used at other toll facilities or with other E-ZPass® discount plans. Choice B is an add-on to a standard Maryland E-ZPass® account. This

allows drivers to pay $20 per year for unlimited trips at the Hatem Bridge. There are associated account maintenance fees for non-Maryland accounts as well as a pre-paid toll balance, but this plan also gives drivers a discount off the base toll rate for two-axle vehicles at all Maryland toll facilities, excluding the Intercounty Connector and I-95 Express Toll Lanes, and can be combined with other discount plans. The discount provided is 37.5 percent for the Bay Bridge and 25 percent for all other facilities. Revenue associated with purchasing these plans is included in the other revenue.

Violation Recovery

Historical violation recovery data through FY 2021 have been provided by MDTA. Prior to FY 2016, "violation fees" were charged to drivers who chose not to initially pay their toll. Since video customers are no longer assessed "violations fees" but are instead assessed civil penalties if they do not pay their video tolls within 45 days, no estimates of future "violation fee" revenue for the Legacy facilities, the ICC and I-95 Express Toll Lanes are included in the other revenue forecast. Future forecasts of civil penalty revenue are based on the following assumptions:

- Baseline civil penalty revenue forecasts were lowered by about 24 percent due to the implementation of a civil penalty program change which was assumed to begin with all civil penalties assessed in FY 2021. This program change assumes civil penalties will be reduced from $50 to $25 for all transactions with civil penalties. The 24 percent revenue impact was estimated based on CDM Smith analysis of historical civil penalty payment rates. Note that this change was already included in last year's annual forecast update.
- Additional civil penalty revenue was included due to the implementation of full cashless tolling on the remaining Legacy facilities.
- Civil penalty collections were adjusted due to MDTA business rule changes related to the pandemic.

Commercial Vehicles Fees and Discounts

There are two available discount programs for commercial vehicles with five-or-more-axles. The first plan is the post-usage plan, which is account specific and can be used on all eligible facilities. With this plan, each account is assessed after 30 days and the post-usage discount is calculated based on the total toll usage. The fee estimates for this program were developed from existing data and historical trends.

The other available discount plan is similar in that it is account specific and can be used on all eligible facilities. With this plan however, the account assessment after 30 days calculates the discount based on the total trips per transponder.

In addition to the two discount plans available to commercial vehicles, there is a fee for over-sized and/or overweight vehicles. As of May 1, 2009, a $25 permit fee was charged and covered all MDTA maintained roadways along the vehicle's route. This fee is a one-time charge and is not applied at any specific tolling location.

4.5.2 Forecast Results

Table 4-11 provides the historical and forecasted other revenue for the Legacy facilities, ICC, and I-95 ETLs. Historical data is shown for FY 2016 through FY 2021. Due to COVID-19 and the associated business rule changes, other revenue declined by 47 percent from FY 2020 to FY 2021. Other revenue is forecasted to significantly increase in FY 2022 and FY 2023 due to increased collections. The MDTA business rule changes have caused a delay in the processing of civil penalty revenue, which accounts for a majority of other revenue. Additionally, unused prepaid trip revenue is forecasted to increase in FY 2022 after further declines in FY 2021 due to reduced trip frequency for commuters and other temporary business rule changes.

Table 4-12 provides the FY 2022 and FY 2023 monthly other revenue forecast for the Legacy facilities, ICC, and I-95 ETLs. Due to the change in MDTA business rules due to the pandemic, other revenue is forecasted to be negative through August from usage and frequency discounts.

Table 4-11
Other Revenue by Facility

Fiscal Year [1]	Legacy Facilities									Intercounty Connector & I-95 ETLs				Total Other Revenue [3]
	Service Fees and Sales				Violation Recovery		Commercial Vehicles			Service Fees and Sales		Violation Recovery		
	Unused Pre-Paid Trip Revenue	Trans-ponder Sales	Monthly Account Fees	Hatem E-Z Pass Program	Civil Penalties	Violation Fees	Post-Usage Discount	High Frequency Discount	Over-size Permit Fee	Trans-ponder Sales	Monthly Account Fees	Violation Fees	Civil Penalties	
2016 [2]	17.36	1.66	1.29	1.60	10.00	-	(6.39)	(1.06)	1.13	0.27	0.22	-	8.28	**34.36**
2017	14.04	2.00	1.42	1.62	20.65	-	(6.79)	(1.16)	1.16	0.22	0.24	-	21.04	**54.46**
2018	13.64	1.40	1.51	1.67	16.13	-	(7.91)	(1.29)	1.16	0.35	0.26	-	13.61	**40.52**
2019	14.00	(0.60)	1.59	1.68	21.27	-	(8.58)	(1.20)	1.26	(0.10)	0.27	-	10.19	**39.78**
2020	10.64	0.22	2.05	1.69	16.93	-	(8.63)	(1.30)	1.06	0.04	0.34	-	11.93	**34.96**
2021	4.49	(0.12)	2.01	1.57	13.66	-	(6.76)	(0.84)	1.05	(0.00)	0.05	-	3.58	**18.70**
2022	10.40	-	1.77	1.60	16.61	-	(10.27)	(1.42)	1.16	-	0.28	-	3.67	**23.80**
2023	13.14	-	1.62	1.60	25.27	-	(8.84)	(1.22)	1.17	-	0.28	-	5.15	**38.16**
2024	13.20	-	1.62	1.65	32.08	-	(8.93)	(1.23)	1.18	-	0.28	-	4.51	**44.37**
2025	13.27	-	1.63	1.66	36.66	-	(9.02)	(1.23)	1.19	-	0.28	-	4.63	**49.07**
2026	13.33	-	1.64	1.67	36.91	-	(9.11)	(1.24)	1.21	-	0.28	-	4.75	**49.44**
2027	13.40	-	1.65	1.67	37.90	-	(9.20)	(1.25)	1.22	-	0.29	-	5.08	**50.76**
2028	13.47	-	1.66	1.68	39.38	-	(9.29)	(1.25)	1.23	-	0.29	-	5.22	**52.38**
2029	13.54	-	1.67	1.69	38.97	-	(9.39)	(1.26)	1.24	-	0.29	-	5.37	**52.11**
2030	13.60	-	1.67	1.70	39.12	-	(9.48)	(1.26)	1.26	-	0.29	-	5.52	**52.41**
2031	13.67	-	1.68	1.71	39.35	-	(9.58)	(1.27)	1.27	-	0.29	-	5.58	**52.70**

Source: Historical data from MDTA

(1) FY 2016 - 2021 represents actual data.

(2) Year of select toll rate reductions.

(3) Summations may not match total due to rounding.

Table 4-12
Forecasted Monthly Other Revenue

Month	Total Other Revenue
FY 2022	
July	(1.303)
August	(1.287)
September	0.612
October	1.044
November	2.310
December	2.927
January	2.853
February	2.853
March	2.898
April	3.157
May	3.731
June	4.002
FY TOTAL	**$ 23.797**
FY 2023	
July	4.090
August	4.055
September	3.805
October	3.351
November	3.344
December	3.161
January	2.918
February	2.751
March	2.865
April	2.536
May	2.445
June	2.838
FY TOTAL	**$ 38.159**

Chapter 5
Total Forecast Results

This chapter provides a summary of the total MDTA system collected transactions/trips and revenue for all facilities. **Table 5-1** provides the total annual collected transactions for the Legacy system and total trips for the Intercounty Connector (ICC) and I-95 ETLs for FY 2021 actual and the FY 2022 to FY 2031 forecast.

Table 5-1
Total System Collected Transactions/Trips

Fiscal Year	Transactions (millions)				
	Legacy	ICC	I-95 ETL	Total [1]	Percent Change
2021 [2]	71.5	10.9	5.1	**87.5**	-
2022	120.0	46.5	10.4	**176.9**	102.3
2023	112.0	38.7	11.6	**162.3**	(8.3)
2024	110.7	39.8	12.3	**162.8**	0.3
2025	109.5	40.5	12.4	**162.4**	(0.2)
2026	110.5	41.3	12.4	**164.3**	1.1
2027	112.5	42.2	13.0	**167.7**	2.1
2028	114.5	43.0	13.9	**171.4**	2.2
2029	116.5	43.9	14.7	**175.0**	2.1
2030	117.8	44.7	15.5	**177.9**	1.7
2031	118.5	45.4	16.2	**180.1**	1.2

[1] Summations may not equal total due to rounding.

[2] Represents actual data.

Table 5-2 provides the total system collected revenue, summarized by Legacy system toll revenue, ICC toll revenue, I-95 ETL toll revenue, and other revenue for all MDTA facilities for FY 2021 actual and the FY 2022 to FY 2031 forecast.

Figure 5-1 provides a graphical representation of the share of transactions/trips by facility for the first and last years of the 10-year forecast, FY 2022 and 2031. In FY 2022, the Legacy system is forecasted to account for nearly 68 percent of total transactions and trips, and the I-95 ETLs are forecasted to account for the smallest share at six percent. By FY 2031, due to comparatively higher growth rates on the ICC and I-95 ETLs, more significant recovery from the COVID-19 impacts, and the I-95 ETL extension, the Legacy system is forecasted to decrease to 66 percent of total transactions. ICC trips are forecasted to decrease slightly from 26 to 25 percent, and the I-95 ETL trips are forecasted to increase to 9 percent by FY 2031. The ICC trips are forecasted to decline because they have a higher than average share of transactions in FY 2022 due to the delay in collections from the COVID-19 related business rule changes.

Table 5-2
Total System Collected Toll and Other Revenue

Fiscal Year	Revenue ($ millions)					
	Legacy	ICC	I-95 ETL	Other [1]	Total [2]	Percent Change
2021 [3]	387.5	20.0	7.7	18.7	**433.9**	-
2022	700.3	83.9	14.9	23.8	**822.9**	89.7
2023	610.0	71.2	16.7	38.2	**736.0**	(10.6)
2024	600.6	72.9	17.8	44.4	**735.7**	(0.0)
2025	597.5	74.4	19.6	49.1	**740.6**	0.7
2026	602.4	75.9	21.5	49.4	**749.2**	1.2
2027	610.4	77.4	22.7	50.8	**761.3**	1.6
2028	618.3	78.9	24.8	52.4	**774.4**	1.7
2029	625.8	80.5	26.9	52.1	**785.3**	1.4
2030	630.4	82.1	28.5	52.4	**793.3**	1.0
2031	634.0	83.3	30.0	52.7	**800.1**	0.9

[1] Includes Other Revenue from Legacy, ICC, and I-95 ETL. Does not include concession revenue.

[2] Summations may not equal total due to rounding.

[3] Represents actual data.

Figure 5-1
Share of Collected Transactions/Trips, FY 2022 and FY 2031

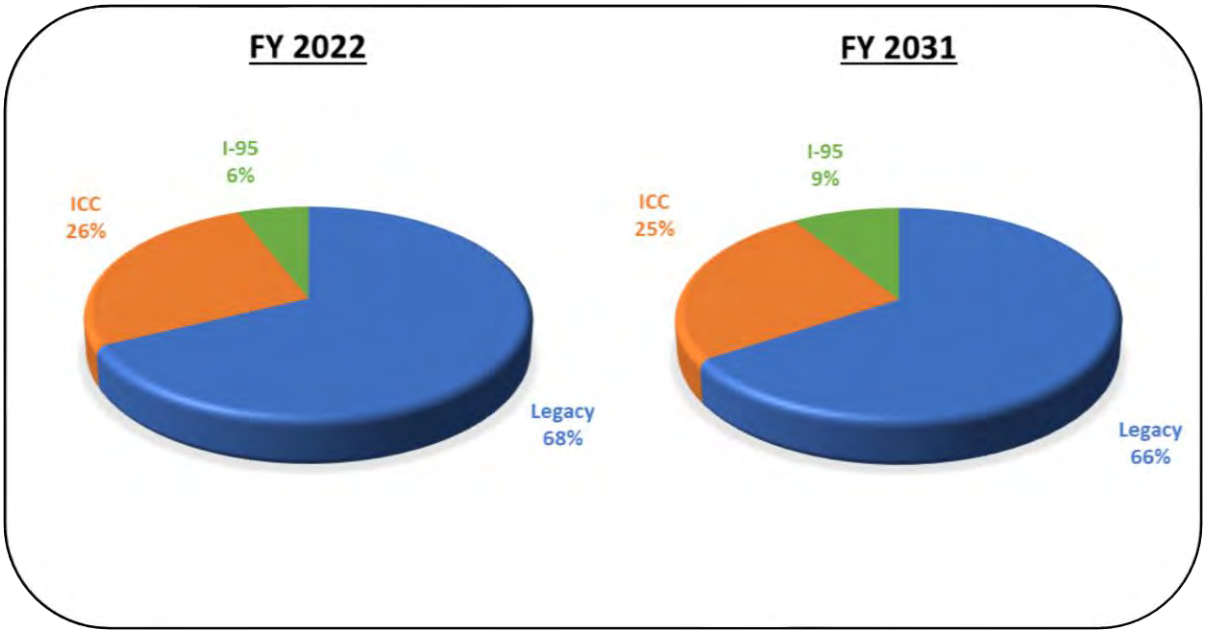


Figure 5-2 provides the same graphical representation for collected total revenue, separated by facility toll revenue and other revenue. Due to the higher share of transactions, the Legacy system also provides the highest share of total revenue and is forecasted to decrease from 85 percent in FY 2022 to 79 percent by FY 2031 for the same reasons as the transaction share changes. The ICC and I-95 ETLs will increase slightly from FY 2022 to FY 2031, while other revenue is forecasted to have the biggest increase in share of total revenue from three percent in FY 2022 to seven percent in FY 2031 due to the conversion to all cashless-tolling and forecasted corresponding increase in civil penalty revenue.

Figure 5-2
Share of Collected Total Revenue, FY 2022 and FY 2031

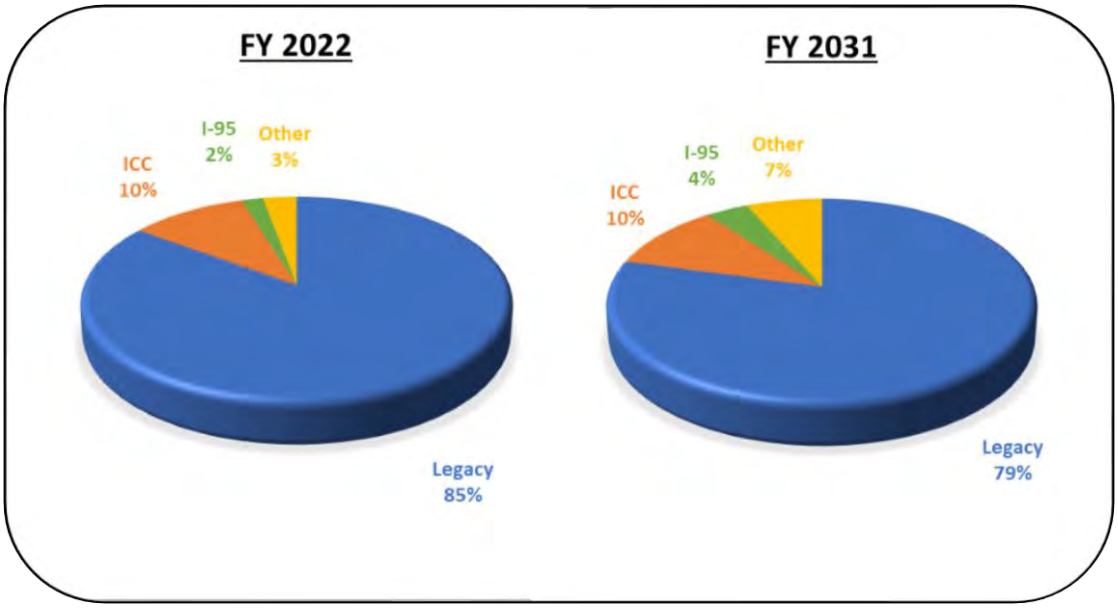


Table 5-3 summarizes the FY 2022 and FY 2023 monthly forecasted transactions, toll revenue, and other revenue for the combined Legacy system, ICC, and I-95 ETL's.

Table 5-3
Total System Collected Monthly Transactions, Toll Revenue, and Other Revenue

Month	Transactions (Millions) [1]	Revenue ($ Millions) [1][2]		
		Toll	Other	Total
FY 2022				
July	17.840	83.694	(1.303)	**82.391**
August	14.310	59.186	(1.287)	**57.899**
September	14.420	61.684	0.612	**62.296**
October	15.616	66.545	1.044	**67.589**
November	15.151	65.227	2.310	**67.537**
December	15.278	69.055	2.927	**71.982**
January	14.066	63.983	2.853	**66.836**
February	12.965	60.845	2.853	**63.698**
March	14.080	66.660	2.898	**69.559**
April	14.461	68.474	3.157	**71.630**
May	14.400	69.317	3.731	**73.048**
June	14.335	64.472	4.002	**68.474**
FY TOTAL	**176.923**	**$ 799.142**	**$ 23.797**	**$ 822.939**
FY 2023				
July	14.657	63.694	4.090	**67.784**
August	14.514	63.093	4.055	**67.148**
September	13.600	59.300	3.805	**63.106**
October	13.970	59.615	3.351	**62.966**
November	13.405	57.210	3.344	**60.554**
December	13.184	56.552	3.161	**59.712**
January	12.079	52.562	2.918	**55.479**
February	11.591	49.326	2.751	**52.077**
March	13.163	55.994	2.865	**58.859**
April	13.805	58.817	2.536	**61.353**
May	14.132	60.710	2.445	**63.155**
June	14.152	61.007	2.838	**63.845**
FY TOTAL	**162.254**	**$ 697.879**	**$ 38.159**	**$ 736.038**

[1] Includes impacts due to leakage, including unpaid transactions.

[2] Other revenue does not include concession revenue.

Chapter 6
Forecast Comparisons

This chapter provides comparisons of the current forecasts for the Legacy system, Intercounty Connector, and I-95 ETL's against previous forecasts. The Legacy system and Intercounty Connector forecasts are compared to the October 2019 CDM Smith forecasts summarized in the reports "Maryland Transportation Authority FY 2020 Traffic and Toll Revenue Forecast Update (Legacy Facilities)" and "FY 2020 Intercounty Connector Forecast Update". They are also compared to the June 2020 updated forecast summarized in "Maryland Transportation Authority COVID-19 Traffic and Revenue Analysis Letter Report" and the November 2020 annual update in the report "Maryland Transportation Authority FY 2021 Traffic and Toll Revenue Forecast Update."

The comparison provided for the I-95 ETLs includes the October 2019 forecast prepared by Jacobs Engineering Group, Inc., summarized in the report "I-95 ETL T&R Update Existing and Extension ", and a June 2020 adjusted forecast which was estimated using the October 2019 Jacobs forecast and applying CDM Smith forecasted COVID impacts and a shift in opening date assumptions for the northbound I-95 ETL extension. The forecast is also compared to the November 2020 I-95 ETL forecast prepared by CDM Smith, also summarized in the report "Maryland Transportation Authority FY 2021 Traffic and Toll Revenue Forecast."

Table 6-1 provides the forecast comparison for the Legacy system. The June 2020 forecasted toll revenue was considerably lower than the October 2019 forecast primarily due to forecasted COVID-19 impacts and business rule changes related to the pandemic. Compared to the June 2020 forecast, the November 2020 forecast was lower in FY 2021 by nearly 20 percent. The outer years were about one percent lower than previously forecasted for passenger cars while commercial vehicle toll revenue was forecasted to be higher than in June 2020 in FY 2021 to FY 2023, lower in FY 2024 and FY 2025, and then about the same in the other years.

The changes in Legacy system revenue in the current forecast were primarily due to updated COVID-19 impacts, business rule changes related to the pandemic, collection challenges due to the back-office transition, and the implementation of systemwide cashless tolling. FY 2021 actual passenger car revenue was 15 percent lower than the November 2020 forecast, and the current forecast FY 2022 passenger car revenue is forecasted to be 27 percent higher than the previous forecast. Due to backlogged transactions from FY 2021, collections in FY 2022 are forecasted to increase significantly as the backlog is recovered. From FY 2023 to FY 2026, incorporating more significant construction impact assumptions resulted in passenger car revenue forecasted to be lower than the November 2020 forecast in the range of one to three percent. After FY 2026 revenue the current forecast is higher than the November 2020 forecast. Commercial vehicles have performed well during the pandemic and have shown growth even over pre-pandemic levels. Due mostly to adjustments resulting from benchmarking the current commercial vehicle forecast to recent trends, commercial vehicle toll revenue for the forecast years is higher than was forecasted in November 2020. FY 2022 commercial vehicle revenue is also higher due to backlogged transactions from FY 2021.

Table 6-1
Legacy System Toll Revenue Comparison

Fiscal Year	Passenger Cars						
	Oct. 2019	% Diff - June vs. Oct.	June 2020	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 378.1	0.0%	$ 378.1	0.0%	$ 378.1	0.0%	$ 378.1
2020	370.8	-17.7%	305.0	0.3%	305.8	0.0%	305.8
2021	368.7	-16.3%	308.6	-19.7%	247.8	-15.4%	209.5
2022	384.2	-4.2%	368.2	-4.4%	351.9	27.3%	448.1
2023	385.8	-4.2%	369.5	1.9%	376.5	-0.1%	376.0
2024	390.5	-4.2%	374.2	1.0%	377.9	-2.8%	367.4
2025	391.9	-4.2%	375.5	-1.7%	369.2	-1.8%	362.5
2026	394.4	-4.2%	377.8	-1.3%	372.8	-1.9%	365.9
2027	396.8	-4.2%	380.1	-0.9%	376.8	-0.9%	373.3
2028	400.4	-4.2%	383.5	-1.1%	379.2	0.3%	380.4
2029	401.8	-4.2%	384.9	-0.8%	381.6	0.8%	384.8
2030	-	0.0%	-	0.0%	384.0	1.1%	388.2
2031	-	0.0%	-	0.0%	-	0.0%	390.8
Fiscal Year	Commercial Vehicles						
	Oct. 2019	% Diff - June vs. Oct.	June 2020	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 223.0	0.0%	$ 223.0	0.0%	$ 223.0	0.0%	$ 223.0
2020	223.9	-5.5%	211.7	0.3%	212.4	0.0%	212.4
2021	221.9	-8.1%	203.9	0.9%	205.8	-13.5%	178.0
2022	223.4	-6.5%	209.0	3.8%	217.0	16.3%	252.2
2023	224.0	-4.0%	215.0	1.9%	219.1	6.8%	234.1
2024	225.8	-2.5%	220.1	-1.3%	217.3	7.3%	233.2
2025	226.3	-2.5%	220.5	-1.8%	216.6	8.5%	235.0
2026	228.5	-2.6%	222.6	0.0%	222.7	6.2%	236.6
2027	229.5	-2.6%	223.7	0.0%	223.7	6.0%	237.1
2028	231.2	-2.6%	225.3	-0.2%	224.8	5.8%	237.9
2029	231.7	-2.6%	225.7	0.1%	225.9	6.7%	241.0
2030	-	0.0%	-	0.0%	227.0	6.7%	242.1
2031	-	0.0%	-	0.0%	-	0.0%	243.3

Table 6-2 provides the forecast comparison for the Intercounty Connector. Similar to the Legacy system, the June 2020 forecasted toll revenue for the ICC was considerably lower than the October 2019 forecast due to COVID-19 impacts. Compared to the June 2020 forecast, the November 2020 forecast includes estimated COVID-19 impacts for the ICC that are higher than forecasted in June and updates to the forecast due to MDTA business rule changes related to the pandemic. The current forecast compared to the November 2020 forecast is higher by 0.7 percent in the outer years due to slightly reduced outer year COVID-19 impacts. FY 2022 is forecasted to be nearly 29 percent higher than the November 2020 forecast due to increased revenue collections from backlogged transactions from FY 2021 that are anticipated to be collected in FY 2022.

Table 6-2
Intercounty Connector Comparison

Fiscal Year	Oct. 2019	% Diff - June vs. Oct.	June 2020	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 69.3	0.0%	$ 69.3	0.0%	$ 69.3	0.0%	$ 69.3
2020	70.1	-15.8%	59.0	-1.5%	58.1	0.0%	58.1
2021	71.0	-19.7%	57.0	-23.8%	43.4	-53.9%	20.0
2022	72.5	-5.5%	68.5	-4.7%	65.3	28.6%	83.9
2023	74.0	-4.0%	71.0	1.2%	71.9	-1.0%	71.2
2024	75.5	-4.0%	72.5	1.2%	73.3	-0.5%	72.9
2025	77.0	-4.0%	73.9	0.0%	73.9	0.7%	74.4
2026	78.5	-4.0%	75.4	0.0%	75.4	0.7%	75.9
2027	80.1	-4.0%	76.9	0.0%	76.9	0.7%	77.4
2028	81.7	-4.0%	78.4	0.0%	78.4	0.7%	78.9
2029	83.3	-4.0%	79.9	0.0%	79.9	0.7%	80.5
2030	-	0.0%	-	0.0%	81.5	0.0%	82.1
2031	-	0.0%	-	0.0%	-	0.0%	83.3

Table 6-3 provides the forecast comparison for the I-95 ETLs. Changes in the current forecast compared to November 2020 are due to incorporating backlogged FY 2021 transactions into FY 2022, incorporating the latest COVID-19 impact forecasts, and modifications to the annualization factor in outer years.

Table 6-3
I-95 ETLs Comparison

Fiscal Year	Oct. 2019 (Jacobs)	% Diff - June vs. Oct.	June 2020 (Jacobs*)	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 13.9	0.0%	$ 13.9	0.0%	$ 13.9	0.0%	$ 13.9
2020	14.7	-20.0%	11.8	-8.6%	10.8	0.0%	10.8
2021	15.2	-30.0%	10.6	-9.7%	9.6	-20.1%	7.7
2022	15.7	-7.0%	14.6	-2.6%	14.2	5.2%	14.9
2023	16.2	-5.0%	15.4	6.2%	16.4	1.8%	16.7
2024	21.2	-24.7%	16.0	7.8%	17.2	3.1%	17.8
2025	23.9	-13.1%	20.8	-6.9%	19.3	1.3%	19.6
2026	25.4	-8.1%	23.3	-7.7%	21.6	-0.4%	21.5
2027	26.4	-6.0%	24.8	-8.3%	22.7	-0.3%	22.7
2028	27.4	-6.0%	25.8	-3.9%	24.8	-0.2%	24.8
2029	28.5	-5.9%	26.8	0.5%	27.0	-0.1%	26.9
2030	-	0.0%	-	0.0%	28.6	-0.3%	28.5
2031	-	0.0%	-	0.0%	-	0.0%	30.0

Table 6-4 provides the forecast comparison for other revenue. The June 2020 forecasted other revenue was lower than the October 2019 forecast mostly due to incorporation of forecasted COVID-19 impacts and the incorporation of the $25 civil penalty rate change. The November 2020 forecast was lower than the June 2020 forecast primarily due to COVID-19 impacts and the MDTA business rule changes related to the pandemic. Actual FY 2021 other revenue came in higher than forecast. FY 2023 other revenue is forecasted to be nearly 32 percent higher than the previous forecast due to the delay in civil penalty collections after all transactions are processed in FY 2022 that were delayed due to backlogged FY 2021 transactions.

Table 6-4
Other Revenue Comparison[1]

Fiscal Year	Oct. 2019	% Diff - June vs. Oct.	June 2020	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 39.8	0.0%	$ 39.8	0.0%	$ 39.8	0.0%	$ 39.8
2020	41.5	-21.3%	32.6	7.2%	35.0	0.0%	35.0
2021	37.1	-39.5%	22.5	-77.5%	5.0	270.9%	18.7
2022	40.3	-29.4%	28.5	-17.5%	23.5	1.3%	23.8
2023	39.9	-27.7%	28.9	0.3%	29.0	31.8%	38.2
2024	43.4	-27.9%	31.3	36.7%	42.8	3.8%	44.4
2025	43.4	-27.7%	31.4	57.8%	49.5	-0.9%	49.1
2026	44.4	-27.0%	32.4	53.7%	49.8	-0.7%	49.4
2027	44.6	-26.9%	32.6	53.8%	50.2	1.2%	50.8
2028	44.7	-26.6%	32.8	53.4%	50.4	4.0%	52.4
2029	44.7	-26.4%	32.9	53.5%	50.6	3.0%	52.1
2030	-	0.0%	-	0.0%	50.8	3.2%	52.4
2031	-	0.0%	-	0.0%	-	0.0%	52.7

[1] Other revenue forecasts do not include concession revenue.

Table 6-5 provides the forecasted total revenue comparison for the entire MDTA system.

Table 6-5
Total System Revenue Comparison

Fiscal Year	Total System						
	Oct. 2019	% Diff - June vs. Oct.	June 2020	% Diff - Nov. vs. June	Nov. 2020	% Diff - Current vs. Nov.	Current
2019	$ 724.1	0.0%	$ 724.1	0.0%	$ 724.1	0.0%	$ 724.1
2020	720.9	-14.0%	620.1	0.3%	622.0	0.0%	622.0
2021	713.8	-15.6%	602.5	-15.1%	511.6	-15.2%	433.9
2022	736.0	-6.4%	688.6	-2.4%	671.8	22.5%	822.9
2023	740.0	-5.4%	699.9	1.8%	712.8	3.3%	736.0
2024	756.4	-5.6%	714.0	2.0%	728.5	1.0%	735.7
2025	762.4	-5.3%	722.1	0.9%	728.5	1.7%	740.6
2026	771.2	-5.1%	731.6	1.5%	742.2	0.9%	749.2
2027	777.5	-5.1%	738.0	1.7%	750.3	1.5%	761.3
2028	785.5	-5.0%	745.9	1.6%	757.6	2.2%	774.4
2029	790.0	-5.0%	750.3	2.0%	765.0	2.7%	785.3
2030	-	0.0%	-	0.0%	771.9	2.8%	793.3
2031	-	0.0%	-	0.0%	-	0.0%	800.1

Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of the traffic and revenue estimates in this report. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the MDTA. CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including MDTA. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Certain variables such as future developments, economic cycles, pandemics, government actions, climate change related events, or impacts related to advances in automotive technology etc. cannot be predicted with certainty and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

The report and its contents are intended solely for use by the MDTA and designated parties approved by MDTA and CDM Smith. Any use by third-parties, other than as noted above, is expressly prohibited. In addition, any publication of the report without the express written consent of CDM Smith is prohibited.

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to MDTA and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to MDTA with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to MDTA. MDTA should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

TAB 9

MEMORANDUM

TO: MDTA Board
FROM: Mr. Jeffrey Brown, Director of Budget
SUBJECT: Review of Fiscal Year (FY) 2023 Preliminary Operating Budget vs. FY 2022 Final Budget
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

The purpose of this memorandum is to request contingent approval of the Preliminary Fiscal Year (FY) 2023 Operating Budget.

SUMMARY

FY 2023 Preliminary Operating Budget Request

Summary of Major Changes ($ millions)

FY 2023 Preliminary Operating Budget Request	$359.1
FY 2022 Final Operating Budget	360.8
$ Change FY 2023 vs FY 2022	(1.7)
% Change FY 2023 vs FY 2022	(0.5)%

The proposed FY 2023 Operating Budget for the Maryland Transportation Authority (MDTA) reflects a return to new normal operations. The proposed operating budget of $359.1 million, represents a $1.7 million, or 0.5%, decrease versus the FY 2022 Final Budget. Overall, the key driver for the budget is the completion of the *E-ZPass*® backlog. This results in lower operating expenses when compared to FY 2022.

ANALYSIS

To better understand the budgetary changes and their associated drivers, the changes have been analyzed by mandated and discretionary expenses.

FY 2022 Final Operating Budget	$360.8
Mandated Increases	5.6
Additions	7.7
Reductions	(15.0)
FY 2023 Prelim Operation Budget	$359.1

Attachment 1 – Identifies the mandated and discretionary additions and reductions.

The mandated changes increased the budget by $5.6 million and are as follows:

- Step and Grade changes for the police account for $1.5 million.
- Health and Retiree's Health (0152, 0154) costs account for a $1.2 million increase. The rates reflect the latest actual costs per FY 2021.
- Employee, Law Enforcement Officers Pension System, and Maryland State Police (0161, 0169, 0165) retirement costs account for a $1.0 million increase.
- An expected $500 bonus (0110) for sworn and civilian employees adds $0.9 million.
- An expected 1% COLA (0101) for civilian employees accounts for a $0.6 million increase.
- Social Security (0151) increased $0.3 million primarily due rate changes.
- Accrued Leave (0111) increased $0.1 million due to expected retirements.

The operating budget includes $7.7 million in additional discretionary spending. The key variances are as follows:

- IT Services and Computers accounts for a $2.4 million increase.
    - IT Services (0865) increased $2.2 million due to higher labor costs in the Consulting and Technical Services (CATS) contracts.
    - Computers (1033) for purchases of "Toughbooks" for the Maryland State Police accounts for a $0.2 million increase.
- A $2.2 million increase in Engineering costs (0807). To manage the reduced revenues due to COVID-19, certain maintenance expenses were deferred. This increase represents maintenance costs that were deferred.

- Other Replacement Equipment (1099) increases $0.7 million due to the replenishment of Personal Protective Equipment (PPE) that have reached their useful life of 10 years.

- Building Repairs & Maintenance (0812) increases $0.4 million driven by the Curtis Creek Draw Bridge maintenance, Bay Bridge automation plus east bound deck work, and a contractual increase for virtual weigh stations.

- The new Vidasys contract (Electronic Security) increases Security Services (0823) by $0.4 million.

- Management Services (0821) increase by $0.3 million for Architectural & Engineering work.

- *E-ZPass*® Transponders (0951) increase by $0.2 million due to increased need.

- Insurance (1309) increases by $0.2 million (normal rate increase).

- The remaining $0.9 million in additions is spread across 43 sub-objects – this includes Education/Training (0819) of $0.1 million to reflect new normal conditions and $0.1 million for Salt/Snow (0906) to reflect historical activity.

The key variances for the $15.0 million reduction in operating budget spending are as follows:

- A reduction of *E-ZPass*® Service Center Costs (0873) of $10.0 million. The additional backlog processing will be completed – the remaining cost represents the expected volume and run rate.

- Fiscal Services (0829) is $1.0 million lower and has two components.
    - *E-ZPass*® Retail Fees are $0.9 million lower – this reflects expected growth rate after backlog processing is completed.
    - Fiscal Services is down $0.1 million due to reduced rating agency fees. The MDTA now utilizes two rating agencies versus three previously.

- Various IT cost reductions across numerous sub-objects (0841, 0843, 0861, 0863, 0864) accounts for $1.0 million. Drivers of this performance are an eliminated web resource, an eliminated TSO lead (use internal resource), and reduced contract costs.

- Rent (1301) is lower by $0.4 million as building 2300 is no longer used.

- Overtime (0104) is reduced by $0.4 million as the filling of personnel vacancies results in less overtime.

- $0.3 million reduction in Additional Building & Maintenance Equipment (1113) as most of the current needs are covered in the Capital Budget.

- $0.3 million reduction in Purchase Other Land Vehicles (0730) as the request is capital and is not included in the operating budget.

- Turnover increased (0189 -larger credit), which reduced costs by $0.3 million. Turnover reflects an average rate of 5.3%, consistent with recent history.

- $0.2 million reduction in Janitorial Services (0813). Although contract costs are up, FY 2023 represents an updated estimate that results in a cost savings compared to FY 2022.

- The remaining $1.0 million reduction is spread across 29 sub-objects and includes an Advertising (0801) reduction of $0.1 million (finished AET/DriveEzMaryland transition), and a $0.1 million reduction for Replacement Building & Equipment (1013). Less funds are needed due to new building requirements that are expected to be completed in FY2022.

Figures 1& 2 graphically display the FY 2023 budget by division and purpose.

Figure 1

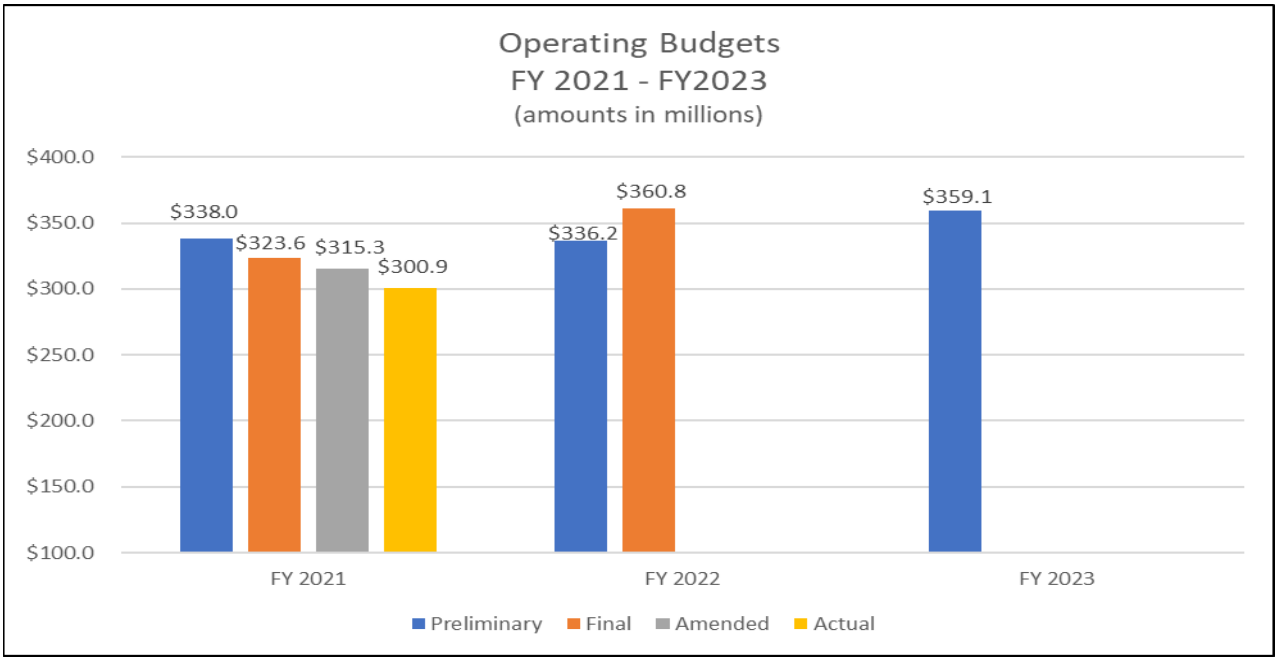
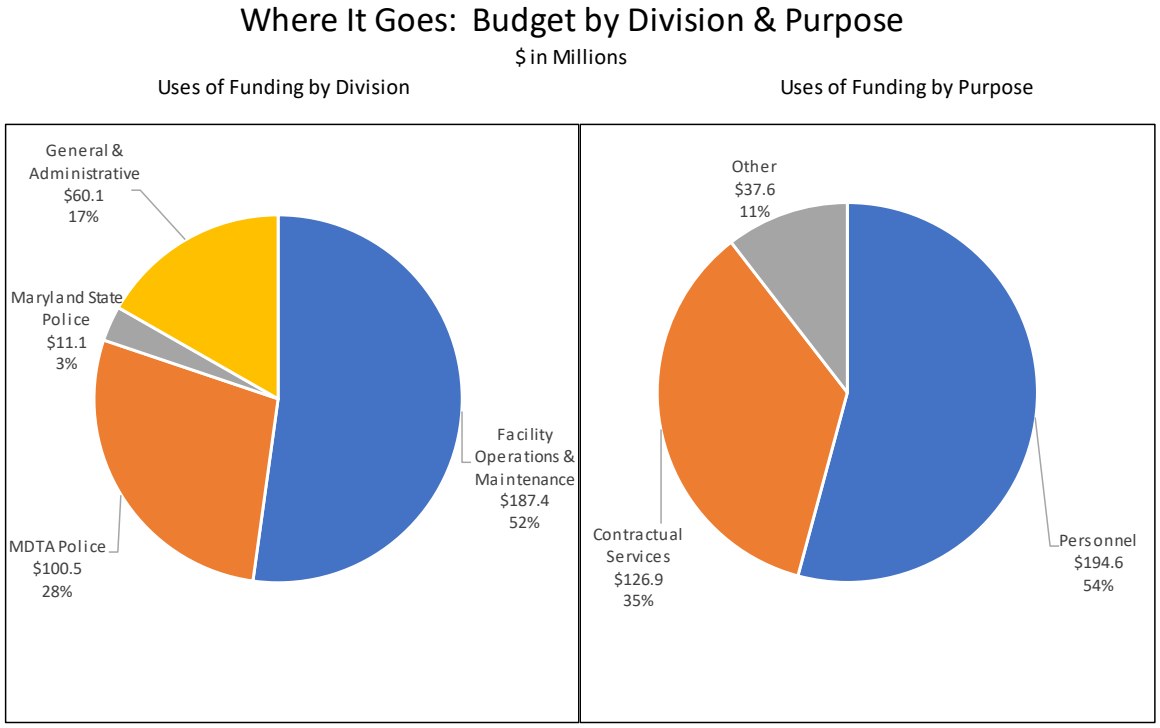


Figure 2



ATTACHMENTS

- Attachment 1 - Summary of Major Changes
- Attachment 2 - FY 2023 SummaryByObject

Summary of Major Changes

	FY22 VS FY23
FY 2023 Prelim Operating Budget	$359.1
FY 2022 Final Operating Budget	360.8
$ Decrease FY 2023 over FY 2022	($1.7)
% Decrease FY 2023 over FY 2022	-0.5%
FY 2022 Final Operating Budget	$360.8
Mandated Increases	5.6
Additions	7.7
Reductions	(15.0)
FY 2023 Prelim Operation Budget Request	$359.1
Mandated	
Step/Grade Increase	$1.5
Health/Retirement Health	1.2
$500 Bonus	0.9
1% Civlian COLA	0.6
Employee Retirement System	0.5
LEOPS	0.3
Social Security	0.3
MSP Retirement	0.2
Accrued Leave	0.1
Total Mandated	$5.6
Additions	
Outside Services	$2.2
Engineers	2.2
Other Replacement Equipment	0.7
Building Repair & Maintenance	0.4
Security Services	0.4
Management Studies	0.3
E-ZPass® Transponders	0.2
Insurance - NonStd	0.2
Replace Equipment - Computers	0.2
Education/Training	0.1
Salt/Snow Materials	0.1
Other	0.7
Total Additions	$7.7

Summary of Major Changes

	FY22 VS FY23
Reductions	
E-ZPass® Service Ctr	($10.0)
E-ZPass® Retail Fees	(1.0)
Systems Software Maint	(0.4)
Rent	(0.4)
OT	(0.4)
Purch Vehicle/Other Land Veh	(0.3)
Add'l Maint & Bldg Equip	(0.3)
Turnover	(0.3)
Data Processing - CPU	(0.2)
Janitorial Services	(0.2)
Advertising	(0.1)
Repl Maint & Bldg Equip	(0.1)
Communications Controllers	(0.1)
Applications SW Maint Acquisition	(0.1)
Systems Soffware Acquisition	(0.1)
Other	(1.0)
Total Reductions	($15.0)

Total Change	($1.7)

FY 2023 SummaryByObject

Object	Description	Final FY 2022 Budget	Prelim FY 2023 Budget	FY23 Prelim-FY22 $ Inc/Dec	FY23 Prelim-FY22 % Inc/Dec
OBJECT 01 Salaries and Wages					
101	REGULAR EARNINGS	110,447,748	113,647,976	3,200,229	2.9%
102	ADDITIONAL ASSISTANCE	223,251	194,092	(29,159)	-13.1%
104	OVERTIME EARNINGS	4,957,021	4,955,949	(1,072)	0.0%
104	OVERTIME EARNINGS - SNOW	1,721,230	1,339,686	(381,544)	-22.2%
105	SHIFT DIFFERENTIAL	1,017,062	993,334	(23,728)	-2.3%
110	MISCELLANEOUS P/R ADJUSTMENTS	2,322,173	2,092,485	(229,688)	-9.9%
111	ANNUAL LEAVE PAYOUTS	64,261	192,471	128,210	199.5%
112	RECLASSIFICATIONS	700,527	377,741	(322,786)	-46.1%
151	SOCIAL SECURITY CONTRIBUTIONS	7,829,966	8,108,515	278,549	3.6%
152	HEALTH INSURANCE	17,264,889	18,031,826	766,936	4.4%
154	RETIREE'S HLTH INSURANCE PREM	8,632,445	9,015,912	383,467	4.4%
156	VSP PAYMENTS	0	0	0	
161	EMPLOYEES RETIREMENT SYSTEM	13,156,859	13,614,873	458,014	3.5%
165	STATE POLICE RETIREMENT SYSTEM	2,767,772	3,037,810	270,038	9.8%
169	LAW ENFORCEMNT OFF PENSION SYS	19,587,691	19,894,689	306,998	1.6%
171	BURDEN EXPENSE	0	0	0	
174	UNEMPLOYMENT COMPENSATION	309,418	318,457	9,039	2.9%
175	WORKERS COMPENSATION	3,510,153	3,510,153	0	0.0%
189	TURNOVER	(5,812,961)	(6,110,630)	(297,669)	5.1%
199	OTHER FRINGE BENE - CLOTH ALLOW	819,858	853,363	33,505	4.1%
		189,519,363	194,068,703	4,549,340	2.4%
Object 02 Technical and Special Fees					
202	PER DIEM PAYMENTS	125,000	120,000	(5,000)	-4.0%
209	ADMIN/MGMT SERVICES SUPPORT	0	0	0	
211	EMPLOYEE AWARDS	0	1,000	1,000	
217	CONTRACTUAL HEALTH INS	0	0	0	
220	SPECIAL PAYMENTS PAYROLL	648,893	448,548	(200,345)	-30.9%
		773,893	569,548	(204,345)	-26.4%
Object 03 Communications					
301	POSTAGE	69,604	71,368	1,764	2.5%
302	TELEPHONE	213,680	228,558	14,878	7.0%
303	TELECOMMUNICATIONS	767,426	767,883	457	0.1%
304	MISCELLANEOUS COMMUNICATION	0	0	0	
305	STATE PAID TELECOMMUNCIATIONS	1,725,000	1,725,000	0	0.0%
306	CELL PHONE EXPENDITURES	404,050	405,006	956	0.2%
		3,179,760	3,197,815	18,055	0.6%
Object 04 Travel					
401	IN STATE/ROUTINE OPERTN TRAVEL	33,714	31,613	(2,101)	-6.2%
401	IN STATE/ROUTINE OPERTN TRAVEL-SNOW		0	0	
402	INSTATE/CONF/SEMNR/TRNG TRAVEL	53,467	51,529	(1,938)	-3.6%
403	OUTSTATE/ROUTINE OPERTN TRAVEL	55,353	55,193	(160)	-0.3%
404	OUTSTATE/CONF/SEMNR/TRNG TRAVL	256,479	254,479	(2,000)	-0.8%
		399,013	392,814	(6,199)	-1.6%
Object 06 Fuel and Utilities					
603	FUEL-OIL #2	178,915	138,350	(40,565)	-22.7%
606	FUEL-NATURAL GAS/PROPANE	214,340	197,146	(17,194)	-8.0%
620	UTILITIES-ELECTRICITY	3,775,972	3,745,787	(30,185)	-0.8%
621	UTILITIES-WATER/SEWAGE	321,229	318,054	(3,175)	-1.0%
		4,490,456	4,399,337	(91,119)	-2.0%
Object 07 Motor Vehicle Operations and Maintenance					
701	PURCH VEH-CAR,LIGHT TRUCK	3,193,000	3,210,394	17,394	0.5%
702	VEHICLE GAS & OIL	1,786,601	1,910,000	123,399	6.9%
702	VEHICLE GAS & OIL-SNOW	0	0	0	
703	VEHICLE MAINTENANCE & REPAIR	1,661,742	1,721,707	59,965	3.6%
703	VEHICLE MAINTENANCE & REPAIR-SNOW	0	0	0	
704	INSURANCE	407,863	407,863	0	0.0%
720	PURCH VEH-WATERCRAFT	0	0	0	
721	VEHICLE GAS & OIL-WATERCRAFT	39,265	39,347	82	0.2%
722	VEHICLE MAINTENANCE & REPAIR-WATERCRAF	53,856	61,431	7,575	14.1%
724	BOAT SLIP RENTAL/LAUNCHING FEES	4,200	4,200	0	0.0%
730	PURCH VEH-OTHER LAND VEH - DUMP, TRACTOR	315,000	0	(315,000)	-100.0%
731	LG VEHICLE GAS & OIL	864,901	875,000	10,099	1.2%
732	LG VEHICLE MAINT & REPAIR	1,867,185	2,000,000	132,815	7.1%
732	LG VEHICLE MAINT & REPAIR-SNOW	13,001	0	(13,001)	-100.0%
789	COMMUTE CHARGES	(5,000)	(5,000)	0	0.0%

FY 2023 SummaryByObject

Object	Description	Final FY 2022 Budget	Prelim FY 2023 Budget	FY23 Prelim-FY22 $ Inc/Dec	FY23 Prelim-FY22 % Inc/Dec
799	OTHER MOTOR VEHICLE CHARGES	54,053	50,000	(4,053)	-7.5%
		10,255,667	10,274,942	19,275	0.2%
Object 08 Contractual Services					
801	ADVERTISING/LEGAL PUBLICATION	3,395,931	3,250,353	(145,578)	-4.3%
802	APPLICATIONS SOFTWARE MAINTENANCE	106,960	106,960	0	0.0%
804	PRINTING/REPRODUCTION SERVICE	81,800	22,000	(59,800)	-73.1%
805	BOOKBINDING/PHOTOGRAPHIC SVC	0	0	0	
807	ENGINEERS	26,750,000	28,905,000	2,155,000	8.1%
808	EQUIPMENT RENTAL	513,940	509,599	(4,341)	-0.8%
809	EQUIPMENT REPAIRS & MAINT	1,614,933	1,610,607	(4,326)	-0.3%
810	EXTERMINATION SERVICE	16,771	16,771	0	0.0%
812	BUILDING/ROAD REPAIRS & MAINT	14,228,156	14,608,242	380,086	2.7%
813	JANITORIAL SERVICES	1,657,933	1,431,411	(226,522)	-13.7%
814	GROUNDS MAINTENANCE	47,086	46,490	(596)	-1.3%
815	LAUNDRY SERVICE	3,449	3,199	(250)	-7.2%
816	HOUSEKEEPING SERVICE	0	0	0	
817	LEGAL SERVICES	204,381	204,381	0	0.0%
819	EDUCATION/TRAINING CONTRACTS	1,207,966	1,353,388	145,422	12.0%
820	MEDICAL CARE	271,720	271,720	0	0.0%
821	MGMT STUDIES AND CONSULTANTS	1,911,658	2,162,822	251,164	13.1%
823	SECURITY SERVICES	1,269,230	1,642,930	373,700	29.4%
824	LABORATORY SERVICES	45,911	47,736	1,825	4.0%
825	VETERINARY SERVICES	27,565	31,565	4,000	14.5%
826	FREIGHT AND DELIVERY	18,989	18,720	(269)	-1.4%
827	TRASH AND GARBAGE REMOVAL	421,381	446,051	24,670	5.9%
828	OFFICE ASSISTANCE	61,244	61,244	0	0.0%
829	FISCAL SERVICES	388,900	309,000	(79,900)	-20.5%
829	E-ZPASS RETAIL FEES	19,500,000	18,550,000	(950,000)	-4.9%
831	OFFICE OF ADMINISTRATIVE HEARINGS FEE	0	0	0	
841	DP CENTRAL PROCESS SVC	1,331,600	1,100,000	(231,600)	-17.4%
843	DP COMMUNICATIONS CONTROLLERS SVC	600,000	480,000	(120,000)	-20.0%
849	TELECOMM LINES, MODEMS & CONTRLLR	97,764	98,453	689	0.7%
850	DP PERIPHERAL EQUIPMENT SVC	0	0	0	
854	COMPUTER MAINTENANCE CONTRACTS	183,160	183,160	0	0.0%
858	SOFTWARE LICENSES	141,894	146,302	4,408	3.1%
861	APPL SOFTWARE ACQUISITION	100,000	0	(100,000)	-100.0%
862	APPL SOFTWARE MAINTENANCE	2,207,582	2,218,082	10,500	0.5%
863	SYSTEMS SOFTWARE ACQUISITION	100,000	0	(100,000)	-100.0%
864	SYSTEMS SOFTWARE MAINTENANCE	945,920	500,000	(445,920)	-47.1%
865	OUTSIDE SVCS-SYS ANALYSIS&DSGN	5,160,720	7,317,000	2,156,280	41.8%
866	OUTSIDE SVCS-PROGRAMMING	408,000	415,000	7,000	1.7%
869	OUTSIDE SVCS-COMPUTER USAGE	753,005	762,000	8,995	1.2%
872	OUTSIDE SVCS-IT CONSULTANT	0	0	0	
873	OUTSIDE SVC - E-Z PASS SVC CENTER	44,977,550	35,006,486	(9,971,064)	-22.2%
874	OFFICE OF ATTORNEY GENERAL FEE	42,474	44,265	1,791	4.2%
875	RETIREMENT AGENCY ADMIN FEE	204,565	204,565	0	0.0%
876	STATEWIDE DOIT SERVICES	51,476	80,000	28,524	55.4%
894	STATEWIDE PERSONNEL SYS ALLOC	55,433	55,433	0	0.0%
897	STATEWIDE ENTERPRISE BUDGET SYSTEM	27,574	27,574	0	0.0%
899	OTHER CONTRACTUAL SVC-NON DP	2,560,607	2,682,679	122,072	4.8%
		133,695,229	126,931,189	(6,764,040)	-5.1%
Object 09 Supplies and Materials					
901	AGRICULTURE	29,740	29,740	0	0.0%
902	OFFICE SUPPLIES	395,646	399,116	3,470	0.9%
903	ELECTRICAL MATERIALS	440,802	426,543	(14,259)	-3.2%
904	BUILDING & HOUSEHOLD SUPPLIES	398,855	396,786	(2,069)	-0.5%
905	ROADWAY MAINT MATERIALS	666,043	670,774	4,731	0.7%
906	SALT/SNOW MELTING MATERIALS	1,440,765	1,566,823	126,058	8.7%
908	HOUSEKEEPING SUPPLIES	79,137	76,069	(3,068)	-3.9%
909	MEDICAL SUPPLIES	30,115	40,314	10,199	33.9%
912	WEARING APPAREL-UNIFORMS EMPL	1,118,557	1,110,734	(7,823)	-0.7%
915	LIBRARY SUPPLIES	25,255	23,675	(1,580)	-6.3%
917	SMALL TOOLS	387,034	384,798	(2,236)	-0.6%
918	VETERINARY SUPPLIES	26,812	29,381	2,569	9.6%
920	FOOD	186,182	177,414	(8,768)	-4.7%
926	DATA PROCESSING SUPPLIES	33,721	41,774	8,053	23.9%

FY 2023 SummaryByObject

Object	Description	Final FY 2022 Budget	Prelim FY 2023 Budget	FY23 Prelim-FY22 $ Inc/Dec	FY23 Prelim-FY22 % Inc/Dec
930	MICROCOMPUTER PKG APPL SOFTWARE	0	0	0	
932	MICROCOMPUTER OPER SYS SFTWRE	65,000	0	(65,000)	-100.0%
933	SOFTWARE UPGRADES	0	0	0	
934	AMMO GUNS FIRING RNGE SUPPLIES	526,808	576,321	49,513	9.4%
951	E-ZPASS TRANSPONDERS	4,014,000	4,254,840	240,840	6.0%
995	CORPORATE PURCHASING CARD	0	0	0	
999	OTHER SUPPLIES AND MATERIALS	306,666	311,252	4,586	1.5%
		10,171,138	10,516,354	345,216	3.4%
Object 10 Replacement Equipment					
1002	REPL AUDIO-VISUAL EQUIP	0	0	0	
1003	REPL CLEANING EQUIPMENT	0	0	0	
1007	REPL EDUCATIONAL EQUIPMENT	0	0	0	
1009	REPLHUMAN ENVIRONMENTAL EQUIPMENT	100	0	(100)	-100.0%
1013	REPL MAINTENANCE & BUILDING EQUIP	384,000	257,500	(126,500)	-32.9%
1015	REPL OFFICE EQUIPMENT	38,875	74,907	36,031	92.7%
1019	REPL RADIOS & ELECTRONIC EQUIPMENT	196,000	206,000	10,000	5.1%
1031	REPL DP EQUIP-MAINFRAME	75,000	75,000	0	0.0%
1033	REPL DP EQUIP-MICROCOMPUTER	1,042,000	1,250,000	208,000	20.0%
1034	REPL DP EQUIP-WORKSTATIONS	0	0	0	
1036	REPL DP EQUIP-PERIPHERALS	0	0	0	
1099	OTHER REPLACEMENT EQUIPMENT	221,806	976,900	755,094	340.4%
		1,957,781	2,840,307	882,525	45.1%
Object 11 Additional Equipment					
1102	ADDT'L AUDIO-VISUAL EQUIP	2,000	12,500	10,500	525.0%
1103	ADDT'L CLEANING EQUIPMENT	0	10,000	10,000	
1107	ADDT'L EDUCATIONAL EQUIPMENT	0	0	0	
1109	ADDT'L HUMAN ENVIRONMENTAL EQUIPMENT	1,000	1,000	0	0.0%
1113	ADDT'L MAINTENANCE & BUILDING EQUIP	464,000	151,000	(313,000)	-67.5%
1115	ADDT'L OFFICE EQUIPMENT	25,642	35,000	9,358	36.5%
1119	ADDT'L RADIOS & ELECTRONIC EQUIPMENT	0	0	0	
1131	ADDT'L DP EQUIP-MAINFRAME	0	0	0	
1133	ADDT'L DP EQUIP-MICROCOMPUTER	100,000	0	(100,000)	
1134	ADDT'L DP EQUIPMENT-WORKSTATIONS	0	0	0	
1136	ADDT'L DP EQUIP-PERIPHERALS	0	0	0	
1199	OTHER ADDITIONAL EQUIPMENT	382,776	472,085	89,309	23.3%
		975,418	681,585	(293,833)	-30.1%
Object 13 Fixed Charges					
1301	RENT	425,000	0	(425,000)	-100.0%
1302	INSURANCE COVERAGE PAID TO STO	452,889	468,408	15,519	3.4%
1303	RENT PAID TO DGS	0	1,100	1,100	
1304	SUBSCRIPTIONS	26,941	53,160	26,219	97.3%
1305	ASSOCIATION DUES	256,682	254,605	(2,077)	-0.8%
1308	LICENSES	9,227	9,649	422	4.6%
1309	INSURANCE (NON STO PAYMENTS)	4,251,822	4,463,488	211,666	5.0%
1310	INTEREST ON LATE PAYMENTS	0	0	0	
1310	BOND ISSUE COSTS	0	0	0	
1320	BAD DEBT EXPENSE	0	0	0	
		5,422,561	5,250,410	(172,151)	-3.2%
	Total	360,840,281	359,123,005	(1,717,275)	-0.5%

TAB 10

MEMORANDUM

TO: MDTA Board
FROM: Ms. Jeanne Marriott, Capital Program Manager
SUBJECT: Final Fiscal Year (FY) 2022-2027 Consolidated Transportation Program (CTP)
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

The purpose of this presentation is to seek your approval of the proposed Final Fiscal Year 2022-2027 Consolidated Transportation Program (CTP). The Final CTP was recommended for approval by the Capital Committee on November 4, 2021, and by the Finance Committee on November 9, 2021.

SUMMARY

The six-year FY 2022-2027 budget in the proposed CTP is $2.8 billion. The proposed CTP reflects a net increase in the six-year FY 2022-2027 budget of $39.3 million (Attachment #1 – Line 6). The net FY 2022-2027 increase is the result of the following:

- Increase in the six-year CTP budget by $9.4 million for the Nice/Middleton Bridge (Attachment #1 – Line 1).
- Increase in the six-year CTP budget by $6.8 million for the I-95 Express Toll Lanes (ETL) Northern Extension (Attachment #1 – Line 2).
- Increase in the six-year CTP budget by $369.0 million for all projects except Nice/Middleton Bridge, I-95 ETL Northern Extension, and reserves (Attachment #1 – Line 3).
- Decrease in the Allocated and Unallocated Reserves by $345.9 million (Attachment #1 – Line 4).

The FY 2021 expenditures were $432.4 million vs. $471.7 million in the Draft FY 2022-2027 CTP (Attachment #1 – Line 6). The FY 2021 underspending was $39.3 million and has been rolled over into the Final FY 2022-2027 CTP.

Highlights of project and reserve changes incorporated in the proposed Final FY 2022-2027 CTP are shown in Attachment #2.

Added New Projects
Added ten system preservation projects and two enhancement projects for an increase of $33.8 million in the FY 2022-2027 period.

Modified Budgets to Reflect Bids Received
Adjusted three projects to reflect bids received for a net increase of $22.3 million. All three contracts were higher than Engineer's Estimate.

Added Construction Phase
The construction phase of two projects was funded for a total of $59.5 million transferred from the reserves as design reached 60% level and the cost estimate was developed on a fully developed scope.

Modified Budget to Reflect Completed Projects
Six projects were completed, and one project was deleted for a net decrease of $3.8 million in the FY 2022-2027 period.

Modified Active Projects Due to Cost Changes and Cash Flow Adjustments
Adjusted cash flows and funded changes in engineering and/or construction budgets for 89 projects for a net budget increase of $273.5 million.

Reserve Changes
The allocated reserves decreased by $345.9 million and the unallocated reserve remained the same at $25.0 million.

ATTACHMENTS

- Attachment #1 – CTP Comparison Tables – Draft v Final FY 2022-2027 CTP
- Attachment #2 – Changes from Draft to Final FY 2022-2027 CTP
- Attachment #3 – Where are the Projects?
- Attachment #4 – What are the Categories of Projects?

CTP Comparison Tables - Draft v Final FY 2022-2027 CTP

Line			2021	2022	2023	2024	2025	2026	2027	Total 2021-2026	Total 2022-2027	2028	2029	2030	2031	Total 2022-2131
1	**Nice/Middleton Bridge**	**Draft 22-27**	$154,332	$227,706	$97,837	$27,398	$10,014	$0	$0	**$517,287**	**$362,955**	$0	$0	$0	$0	$362,955
		Final 22-27	$144,952	$227,706	$97,849	$26,648	$20,132	$0	$0	**$517,287**	**$372,335**	$0	$0	$0	$0	$372,335
		Change	($9,380)	$0	$12	($750)	$10,118	$0	$0	$0	$9,380	$0	$0	$0	$0	$9,380
2	**I-95 ETL Northern Extension** (Including Reserves)	**Draft 22-27**	$63,084	$142,103	$217,293	$181,038	$113,823	$99,742	$78,513	**$817,083**	**$832,512**	$50,130	$23,555	$0	$0	$906,197
		Final 22-27	$54,689	$128,400	$223,106	$181,975	$118,051	$106,366	$81,427	**$812,587**	**$839,325**	$51,815	$22,278	$0	$0	$913,418
		Change	($8,395)	($13,703)	$5,813	$937	$4,228	$6,624	$2,914	($4,496)	$6,813	$1,685	($1,277)	$0	$0	$7,221
3	**Remainder of CTP** (Excluding Reserves)	**Draft 22-27**	$254,263	$207,994	$154,844	$96,592	$38,465	$24,357	$12,525	**$776,515**	**$534,777**	$0	$0	$0	$0	$534,777
		Final 22-27	$232,775	$217,135	$249,462	$239,892	$125,746	$50,387	$21,162	**$1,115,397**	**$903,784**	$0	$0	$0	$0	$903,784
		Change	($21,488)	$9,141	$94,618	$143,300	$87,281	$26,030	$8,637	$338,882	$369,007	$0	$0	$0	$0	$369,007
4	**Allocated and Unallocated Reserves**	**Draft 22-27**	$0	$25,070	$89,270	$187,238	$265,017	$262,947	$217,119	**$829,542**	**$1,046,661**	$313,625	$318,450	$323,275	$328,100	$2,330,111
		Final 22-27	$0	$0	$28,648	$104,644	$159,769	$206,475	$201,247	**$499,536**	**$700,783**	$313,625	$318,450	$323,275	$328,100	$1,984,233
		Change	$0	($25,070)	($60,622)	($82,594)	($105,248)	($56,472)	($15,872)	($330,006)	($345,878)	$0	$0	$0	$0	($345,878)
5	**Remainder of CTP (3+4)** (Including Reserves)	**Draft 22-27**	$254,263	$233,064	$244,114	$283,830	$303,482	$287,304	$229,644	**$1,606,057**	**$1,581,438**	$313,625	$318,450	$323,275	$328,100	$2,864,888
		Final 22-27	$232,775	$217,135	$278,110	$344,536	$285,515	$256,862	$222,409	**$1,614,933**	**$1,604,567**	$313,625	$318,450	$323,275	$328,100	$2,888,017
		Change	($21,488)	($15,929)	$33,996	$60,706	($17,967)	($30,442)	($7,235)	$8,876	$23,129	$0	$0	$0	$0	$23,129
6	**Total** (1+2+5)	**Draft 22-27**	$471,679	$602,873	$559,244	$492,266	$427,319	$387,046	$308,157	**$2,940,427**	**$2,776,905**	$363,755	$342,005	$323,275	$328,100	$4,134,040
		Final 22-27	$432,416	$573,241	$599,065	$553,159	$423,698	$363,228	$303,836	**$2,944,807**	**$2,816,227**	$365,440	$340,728	$323,275	$328,100	$4,173,770
		$ Change	($39,263)	($29,632)	$39,821	$60,893	($3,621)	($23,818)	($4,321)	$4,380	$39,322	$1,685	($1,277)	$0	$0	$39,730
		% Change	-8%	-5%	7%	12%	-1%	-6%	-1%	0%	1%	0%	0%	0%	0%	1%
Cumulative Change			($39,263)	($68,895)	($29,074)	$31,819	$28,198	$4,380	$59	$4,380	$59	$1,744	$467	$467	$467	$467

Changes from Draft to Final FY 2022-2027 CTP

New Projects Added ($000)

Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	
MA	2573 - On-Call Structural Repairs	15,000	15,000	
MA	2574 - On-Call Structural Repairs	15,000	15,000	
FT	0218 - FMT South Traffic Relief Improvements (Planning only)	700	700	
KH	2569 - JFK Maryland State Police Building Remodeling (Engineering only)	500	500	
KH	2570 - JFK Wash Bay, Salt Barn and Fueling Facilities at Perryville (Engineering only)	500	500	
HT	0240 - Resurfacing North and South of BHT (Engineering only)	475	475	
FT	2565 - FMT East Vent Building Facade and Roof Replacement (Engineering only)	400	400	
HT	2560 - Maintenance/Auto Building HVAC and Roof Replacement (Engineering only)	400	400	
IC	2563 - Replace ICC Deck Over Lighting (Engineering only)	260	260	
FT	2571 - FMT Campus Fuel Oil Conversion (Engineering only)	200	200	
MA	0228 - On-Call Electrical/ITS (Engineering only)	200	200	
MA	2559 - On-Call Civil Repairs (Engineering only)	150	150	
	Total - New Projects Added (12)	33,785	33,785	

Projects Modified to Reflect Bids Received ($000)

Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	
KH	2477 - I-95/Belvidere Road Interchange	16,612	15,927	
MA	2538 - On-Call Structural Repairs & Miscellaneous Modifications	2,268	5,470	
BB	2501 - On-Call Structural Repairs & Miscellaneous Modifications for Bay Bridge	238	889	
	Total - Projects Modified to Reflect Bids Received (3)	19,119	22,286	

Projects Modified to Add Construction Phase ($000)

Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	
KB	2450 - I-695 Subgrade Improvements at Bear Creek	58,262	58,187	
HT	2506 - Baltimore Harbor Tunnel In-Tunnel Fiber Improvements	1,183	1,320	
	Total - Projects Modified to Add Construction Phase (2)	59,445	59,507	

Projects Completed or Deleted ($000)

Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	Notes
FT	2397 - Rehabilitate Substructure and Superstructure of Various Bridges on I-95 in Baltimore City	406	0	Project completed.
BB	2260 - Clean and Paint Structural Steel Westbound Span - Phase IV	136	50	Project completed.
FT	2414 - I-95 Moravia Road to Tunnel - Phases 1 & 2 NB/Phase 2 SB	(245)	48	Project completed.
PB	2400 - On-Call Facility and Building Repairs	(303)	20	Project completed.
KB	2277 - FSK Facility-Wide Asphalt Resurfacing	(1,129)	0	Project completed
BB	2342 - Rehabilitate Suspension Spans on Westbound Span	(2,926)	(3,369)	Project completed.
MA	2225 - Install E-ZPass Back-Up Site	(3,687)	(588)	Project deleted.
	Total - Projects Completed or Deleted (7)	(7,749)	(3,838)	

Changes from Draft to Final FY 2022-2027 CTP

Active Projects Modified Due to Cost Changes and Cash Flow Adjustments ($000)				
Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	Notes
BB	2317 - Rehabilitate Decks of Eastbound Span - Phase I Deck Widening & Replacement of Deck Truss	225,500	226,222	Increased CO for CMAR package and cost estimate revision.
MA	2147 - Replace Electronic Toll Collection and Operating System - 3rd Generation	7,559	9,039	Increased PE and CO for revised cost estimate.
BB	2470 - Construct Project Management Office and Maintenance Equipment Storage Building	6,480	5,547	Increased PE and CO for expanded scope of work for environmental and utility issues.
FT	0237 - Rehabilitate Substructure of I-95 Bridges over Race Street	2,375	2,448	Increased PE for cost estimate revision based on completed alternative analysis.
KB	2304 - Convert to All Electronic Tolling (AET)	1,951	209	Increased PE and CO for change orders prior to closeout.
MA	2485 - On-Call Miscellaneous Paving Repairs	1,537	309	Increased PE and CO for increase in capital task orders.
HT	2447 - Replace 15KV Feeders	1,420	1,117	Increased CO for additional CMI due to COVID delays and tunnel accessibility.
BB	2504 - Queue Detection System	1,400	1,641	Increased CO to install detectors and cameras.
BB	2469 - Miscellaneous Rehabilitation of the Bay Bridge Suspension Spans	1,157	600	Increased PE and CO for re-design and additional CMI due to contract delay.
BB	2412 - Priority Structural Repairs and Misc. Modifications	1,000	621	Increased CO for additional CMI due to contract time overrun.
KB	2438 - Police Headquarters Building Envelope Renovations	909	1,133	Increased PE and CO for additional scope and re-advertisement.
HT	2439 - Administration Building Roof Replacement and Envelope Rehabilitation	674	(378)	Increased PE and CO for change order.
FT	0200 - Rehabilitate FMT Area-Wide Lighting	665	690	Increased CO to include fiber architecture upgrade.
MA	2489 - Drainage Rehabilitation - Phase III - Outfalls	610	670	Increased CO for updated engineer's estimate plus 12% CMI.
KB	2521 - MDTA Police Training Academy	600	598	Increased PE to advance design.
MA	2418 - On-Call Electrical and ITS - #3	599	30	Increased PE and CO for increase in capital task orders and extended duration.
FT	2499 - MDTA Police Vehicle Storage Garage	330	619	Increased PE due to revised scope of work.
BB	2476 - Crossover Automated Lane Closure System	306	(326)	Increased PE for development of Redline Revisions 1, 2, and 3.
IC	2482 - ICC Fiber Optic Utility Tracer Wire	286	235	Increased CO for Supplemental Agreement for item overruns with time extension plus extended CMI.
HT	2380 - Repair Slopes and Drainage	281	743	Increased PE for unforeseen site conditions.
HB	2512 - Cleaning and Painting of the Hatem Bridge (Engineering only)	280	308	Increased PE due to revised cost estimate.
KH	2428 - Deck Replacement of I-95 Bridge over Little Northeast Creek	252	200	Increased CO for additional CMI charges due to duration extension.
MA	2497 - Radio Rebroadcast and Radiax in BHT & FMT	145	145	Increased PE for revised design schedule to address a challenge in obtaining parts and maintaining the existing server.
MA	2360 - Furnish and Install License Plate Recognition Systems	121	60	Increased CO for extended CMI.
KH	2289 - Remove, Replace and Upgrade Sign Structures	100	(60)	Increased PE and CO for extra work prior to close out.
MA	2444 - Bay Total Maximum Daily Load (TMDL) Stormwater Retrofits - Phase VI	100	131	Increased PE and CO for extra work.
MA	2083 - Evaluate Condition of Deck, Superstructure & Substructures - All Facilities	84	125	Increased PE to fund continuation of work in FY22.
BB	2481 - Police and Automotive Maintenance Building Generator Replacement	81	50	Increased CO for EWA and COVID delays.
FT	2269 - Replace Tunnel Lighting Systems	70	20	Increased CO for extended CMI due to COVID delays.
BB	2228 - Cable Rewrapping & Dehumidification of Cables and Anchorages	42	53	Decreased PE and increased CO for revised cost estimate.
HT	2437 - Mill and Overlay Bridge Decks	(18)	503	Decreased PE to close out design phase.
FT	2449 - Superstructure Repairs of Various Bridges North and South of Fort McHenry Tunnel	(89)	429	Decreased PE to close out design phase.
BB	2459 - Rehabilitate Maintenance Access Facilities of Eastbound and Westbound Spans	(131)	(572)	Decreased PE to close out design phase.
FT	2458 - Rehabilitate Tunnel 13KV Cable, Conduit, and Concrete Wall	(324)	905	Decreased PE to close out design phase.
KH	2429 - Rehabilitate Decks on Three Bridges on I-95 in Cecil County	(329)	200	Decreased CO due to favorable fuel prices and savings on the structural allowance item.
HT	2292 - Replace Deck and Superstructure of Bridge over Patapsco Flats	(378)	100	Decreased CO due to favorable settlement of outstanding items with contractor.
FT	2543 - Replace Superstructure of Moravia Road Ramp Bridge to I-95 Southbound	(421)	1,700	Decreased PE prior to close-out.

Active Projects Modified Due to Cost Changes and Cash Flow Adjustments - continued on Page 3

Changes from Draft to Final FY 2022-2027 CTP

Active Projects Modified Due to Cost Changes and Cash Flow Adjustments ($000) - continued				
Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	Notes
MA	2480 - On-Call Structural Repairs & Miscellaneous Modifications	(500)	(408)	Decreased CO as some tasks were charged to other projects.
KH	2394 - Resurface Southbound I-95 from the Maryland/Delaware State Line to the Tydings Bridge	(648)	200	Decreased CO due to favorable fuel prices and unused contingency items.
KH	2393 - Resurface Northbound I-95 from the Tydings Bridge to the Maryland/Delaware State Line	(879)	200	Decreased CO due to favorable fuel prices and unused contingency items.
MA	2479 - On-Call Structural Repairs & Miscellaneous Modifications	(1,000)	(795)	Decreased CO as some tasks were charged to other projects.
MA	2456 - Replace Police In Car Digital Video System	(1,775)	327	Decreased CO due to revised cost estimate.
HT	0280 - I-895 Bridge Replacement	(10,413)	(8,617)	Decreased CO due to favorable fuel prices and environmental waste removal savings.
NB	1024 - Replace Nice/Middleton Bridge	0	9,380	Cash flow adjustment.
KH	Various - Express Toll Lanes Northern Extension	0	6,813	Cash flow adjustment.
MA	2235 - Program Management Services for System Preservation	0	5,000	Cash flow adjustment.
KH	2544 - Tydings Bridge Interim High Speed AET Conversion	0	3,004	Cash flow adjustment.
FT	2517 - Convert to Cashless Tolling at the Fort McHenry Tunnel	0	1,855	Cash flow adjustment.
HT	2423 - Replacement of Concrete Median Barrier along I-895	0	1,150	Cash flow adjustment.
MA	2537 - On-Call Structural Repairs & Miscellaneous Modifications	0	883	Cash flow adjustment.
MA	2433 - Update Phone System to NECSV9500	0	678	Cash flow adjustment.
KH	1116 - I-95 Improvements with Express Toll Lanes	0	643	Cash flow adjustment.
IC	1982 - Intercounty Connector (ICC)/MD 200	0	634	Cash flow adjustment.
FT	2251 - Rehabilitate Vent Fans	0	461	Cash flow adjustment.
KH	2509 - Structural Rehabilitation of the Millard E. Tydings Memorial Bridge	0	450	Cash flow adjustment.
MA	2546 - Purchase Card Information System (PCARD)	0	447	Cash flow adjustment.
MA	2411 - On-Call Facility/Building Repairs	0	424	Cash flow adjustment.
FT	2508 - Bridge Deck Rehabilitation and Miscellaneous Repairs to FMT South	0	385	Cash flow adjustment.
HB	2273 - Convert to All Electronic Tolling (AET) and Rehabilitate Approach Roadways	0	377	Cash flow adjustment.
MA	2498 - On-Call Electrical/ITS	0	304	Cash flow adjustment.
KH	2436 - Replace I-95 Bridge over CSXT (Engineering only)	0	188	Cash flow adjustment.
MA	2524 - On-Call Building Systems Rehabilitation/Replacement	0	175	Cash flow adjustment.
MA	2421 - Mainline Small Drainage System Preservation	0	161	Cash flow adjustment.
KB	0219 - Francis Scott Key Bridge Deck Replacement	0	132	Cash flow adjustment.
MA	2483 - Small Drainage Rehabilitation	0	117	Cash flow adjustment.
HT	2529 - Rehabilitate Baltimore Harbor Tunnel Lighting System (Engineering only)	0	115	Cash flow adjustment.
MA	2466 - Clean and Paint Bridges on Baltimore Harbor Tunnel Thruway and John F. Kennedy Highway	0	96	Cash flow adjustment.
FT	2513 - Structural Rehabilitation of Various Bridges on I-95	0	70	Cash flow adjustment.
HT	2527 - Replace Bridges on I-895 over I-695 (Engineering only)	0	57	Cash flow adjustment.
MA	0231 - On-Call Signs, Sign Lights, and Sign Structures	0	50	Cash flow adjustment.
KH	2500 - Maintenance Facility Complex	0	36	Cash flow adjustment.
MA	2549 - On-Call Miscellaneous Paving Repair	0	32	Cash flow adjustment.
MA	2523 - On-Call Facility/Building Repairs	0	25	Cash flow adjustment.
KB	2319 - Building Renovations at FSK Campus	0	23	Cash flow adjustment.
MA	2404 - Bay TMDL Stormwater Retrofits - Phase IV	0	23	Cash flow adjustment.

Active Projects Modified Due to Cost Changes and Cash Flow Adjustments - continued on Page 4

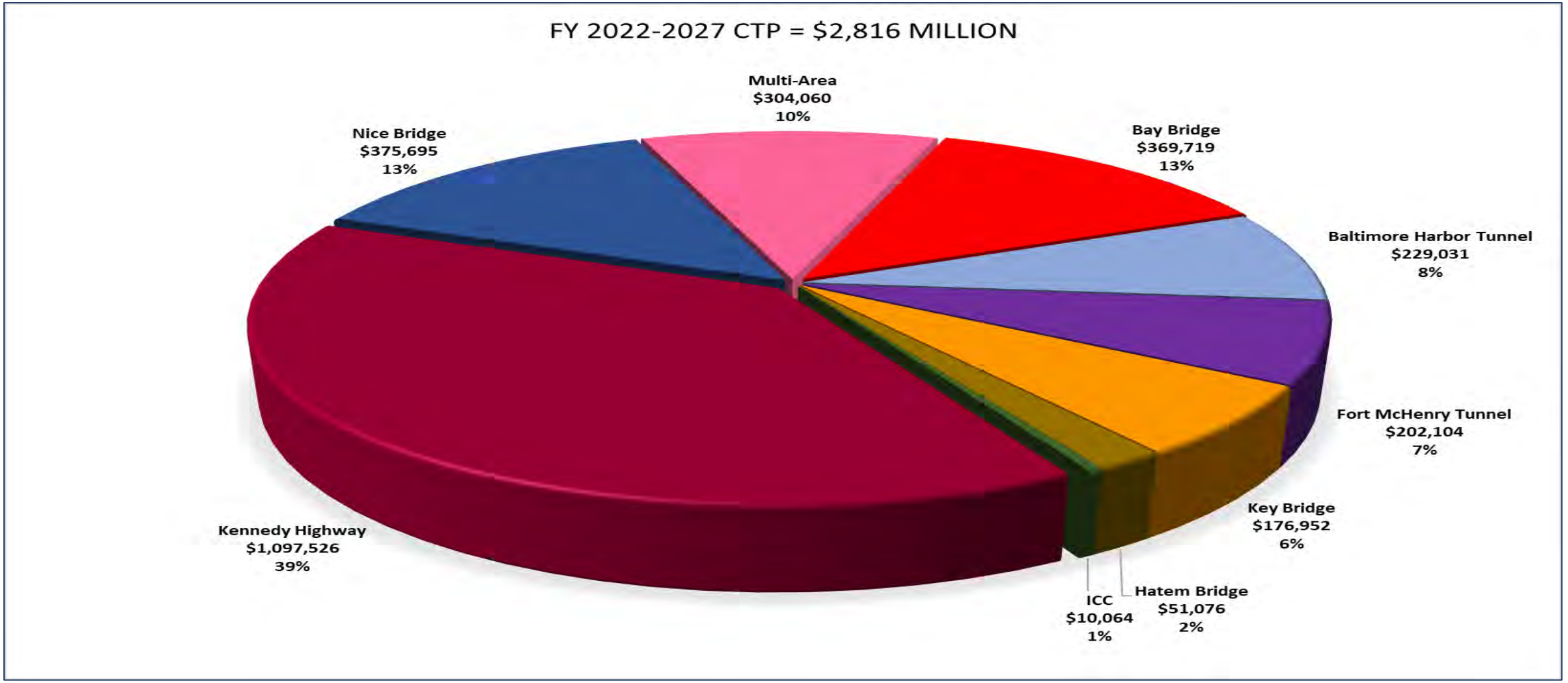
Changes from Draft to Final FY 2022-2027 CTP

Active Projects Modified Due to Cost Changes and Cash Flow Adjustments ($000) - continued				
Facility	MFCE - Project Name	TEC Change	FY 2022-2027 Budget Change	Notes
KH	0202 - I-95 Southbound Hard Shoulder Running	0	20	Cash flow adjustment.
FT	2442 - Port Covington Access I-95	0	6	Cash flow adjustment.
KH	2440 - Maintenance Facility 2 Building Renovations	0	5	Cash flow adjustment.
HT	2306 - Envelope Repair and Switchgear Replacements at BHT Vent Buildings	0	5	Cash flow adjustment.
MA	2502 - MDTA Enterprise Budget Planning and Management System (Software)	0	2	Cash flow adjustment.
BB	2488 - Miscellaneous Security Improvements (Engineering only)	0	(3)	Cash flow adjustment.
KB	0199 - Maintenance and Repairs of the I-695 Curtis Creek Drawbridges	0	(96)	Cash flow adjustment.
KH	2484 - JFK Substation and Electrical Equipment Replacement	0	(115)	Cash flow adjustment.
HT	2263 - Replace Vent Fans	0	(238)	Cash flow adjustment.
MA	2507 - On-Call Signs, Sign Lights, and Sign Structures	0	(264)	Cash flow adjustment.
BB	2329 - Replace 5KV Feeder on Eastbound Span and Add Redundant Cable to Both Spans	0	(500)	Cash flow adjustment.
BB	2369 - Deck Rehabilitation and Miscellaneous Modifications to Westbound Span	0	(1,229)	Cash flow adjustment.
BB	2516 - William Preston Lane Jr. Memorial Bridge AET Conversion	0	(2,061)	Cash flow adjustment.
MA	2496 - On-Call Drainage and Stormwater BMP Remediation III	0	(3,232)	Cash flow adjustment.
	Total - Active Projects Modified Due to Cost Changes and Cash Flow Adjustments (89)	240,007	273,461	

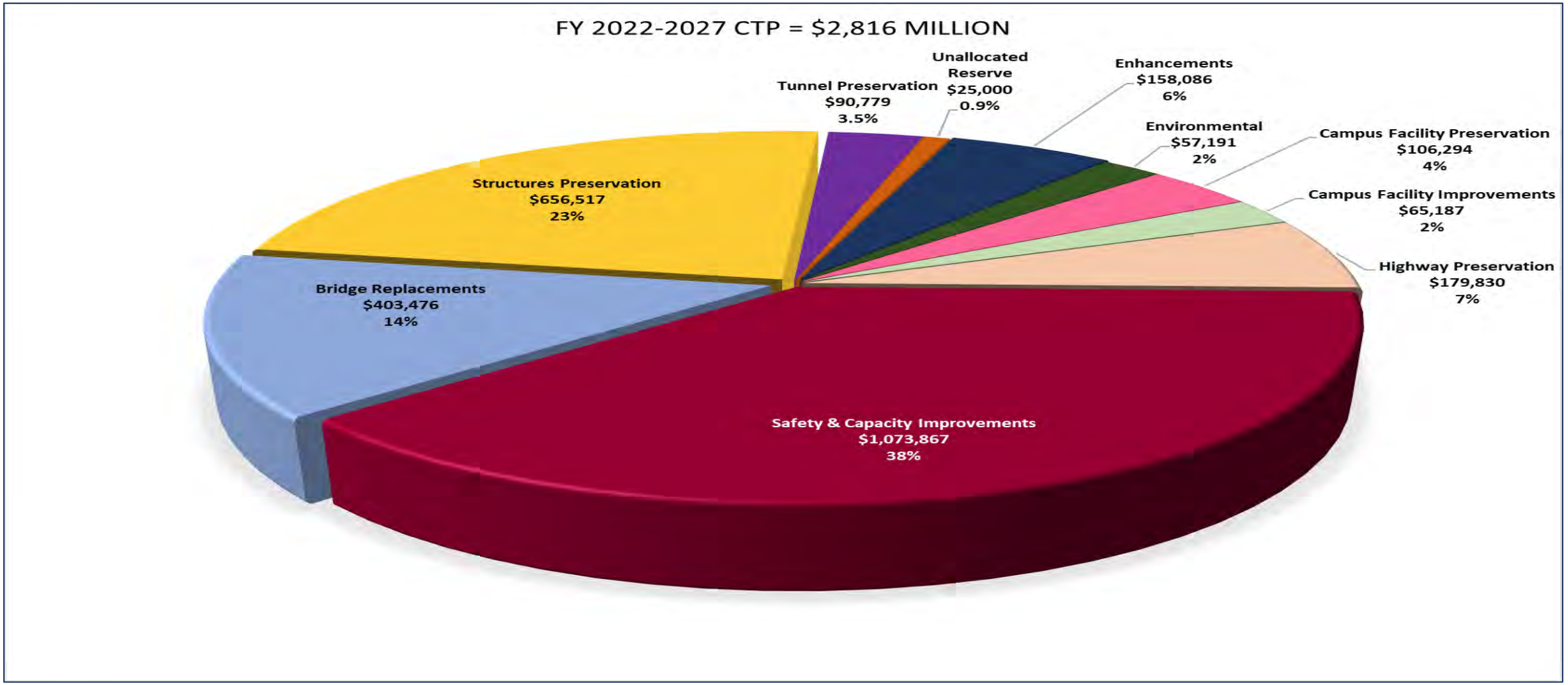
Reserve Changes ($000)			
		FY 2022-2027 Budget Change	
	Allocated Reserve - System Preservation Projects	(390,684)	
	Allocated Reserve - Enhancement Projects	44,806	
	Total - Reserve Changes	(345,878)	

Changes from Draft to Final FY 2022-2027 CTP ($000)			
		FY 2022-2027 Budget Change	
	Budget Changes - Projects	385,201	
	Budget Changes - Reserves	(345,878)	
	Net Changes	39,323	

FY 2022-2027 Final Consolidated Transportation Program
Where are the Projects?



FY 2022-2027 Final Consolidated Transportation Program
What are the Categories of Projects?



TAB 11

MEMORANDUM

TO: MDTA Board
PRESENTED BY: Ms. Christina Thompson, Deputy Director of Finance
SUBJECT: Fiscal Year 2022-2027 Financial Forecast
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

To request approval of the updated Fiscal Year (FY) 2022-2027 financial forecast.

SUMMARY

The FY 2022-2027 financial forecast was originally approved by the Maryland Transportation Authority (MDTA) Board on July 29, 2021 and updated on August 26, 2021. The July forecast reflected the then-current annual Traffic & Revenue (T&R) forecast issued on November 6, 2020, adjusted for the transaction backlog and uncertainties associated with COVID-19, permanently transitioning to All-Electronic Tolling, and the 3rd Generation Electronic Toll Collection system.

The August financial forecast reflected an updated T&R forecast which was completed earlier than in the past, which provided an opportunity to update the forecast prior to submission to the General Assembly of the Joint Chairmen's Report on alleviating fiscal stress concerns. The revised forecast also reflected the elimination of a $65 million loan to the Maryland Department of Transportation (MDOT). Per MDOT's Chief Financial Officer, an alternative financing option will be utilized.

This forecast includes the most recently issued T&R forecast, the Final FY 2022 - 2027 Consolidated Transportation Program (CTP), and the Preliminary FY 2023 Operating budget.

For forecast period (FY 2022 – 2027), MDTA remains in compliance with its financial goals and legal standards.

- Throughout the forecast period (FY 2022 – 2027), the MDTA meets its financial goals:
  - ≥$350 million unencumbered cash, and
  - ≥ 2.0 debt service coverage.

- MDTA remains above its trust agreement rate covenant (net revenues ≥1.0 x sum of: 120% debt service + deposits to M&O account).
- No systemwide toll increases are needed in the forecast period.
- Debt to be issued during the forecast period is $645.5 million.
- Maximum outstanding indebtedness within the forecast period remains below the statutory cap of $3 billion ($2.46 billion in FY 2027).
- Debt service paid over the forecast period is $871.1 million.

ANALYSIS

The primary differences between the update and the August 2021 forecast are:

- Increased revenue of $3.8 million throughout the forecast period primarily due to investment income.
- Decreased operating budget expenses of $2.8 million.
- Increased capital expenses of $39.3 million which is attributable to rollover from FY 2021.
- Decreased debt issuances and debt service: Revenue bond issuances (including TIFIA) decrease by $72.4 million and projected debt service declines by $8.8 million over the period due to an increase in net revenue available for PAYGO capital spending following the true up of FY 2021 actual revenues and expenses.

Assumptions

- Traffic and toll Revenue Forecast Update: CDM Smith November 2021
- Final FY 2022 – 2027 CTP
- Preliminary FY 2023 Operating Budget
- Future operating costs: FY 2023 budget increased 4% per year thereafter

Evaluation Criteria

Adhere to MDTA goals and policies:

- ≥$350 million unrestricted cash
- ≥2.0 debt service coverage
- Rate covenant ratio ≥1.0 sum of 120% debt service plus deposits to M&O account
- Debt outstanding ≤ $3 billion
- Forecast tests the need for potential future system wide toll increases. (None needed within the six-year program period.)

ATTACHMENT

- Financial Forecast

MARYLAND TRANSPORTATION AUTHORITY
CASH FLOW FORECAST
FY 2021 - 2027

In Millions $	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Revenues							
Toll Revenues	$455.9	$822.9	$736.1	$735.7	$740.6	$749.2	$761.3
Concessions Revenue	5.0	3.8	3.9	3.9	3.9	3.9	3.9
Investment Income & Other Revenue	3.7	8.3	8.7	7.3	6.3	6.3	6.3
MDOT Loan Repayment - Interest	-	0.5	1.7	1.6	1.5	1.3	1.2
BWI/Port Police Reimbursement	29.7	32.6	33.9	35.3	36.7	38.2	39.7
Total Revenues	**$494.3**	**$868.2**	**$784.3**	**$783.7**	**$789.0**	**$798.9**	**$812.4**
Operating Expenses							
Operating Account Budget	$302.2	$360.8	$359.1	$373.4	$388.7	$404.2	$420.4
Debt Service	61.8	105.0	138.1	146.4	152.5	161.4	167.6
Total Operating Expenses	**$364.0**	**$465.8**	**$497.2**	**$519.8**	**$541.2**	**$565.6**	**$588.0**
Operating Revenue Net of Expenses	**$130.4**	**$402.3**	**$287.1**	**$263.9**	**$247.8**	**$233.3**	**$224.5**
Capital Expenses							
2022-2027 Total CTP	$432.7	$573.2	$599.1	$553.2	$423.7	$363.2	$303.8
Total Expenses (Operating + Capital)	**$796.6**	**$1,039.1**	**$1,096.3**	**$1,073.0**	**$964.9**	**$928.8**	**$891.8**
Capital Funding Source / (Uses) and Intergovernmental							
Revenue Bonds	$401.8	$0.0	$0.0	$74.5	$169.2	$126.2	$75.6
TIFIA	-	-	200.0	-	-	-	-
Surety Policy	-	(1.2)	-	(0.2)	(0.4)	(0.3)	(0.2)
Cash Refunding	(81.9)	-	-	-	-	-	-
MDOT Loan Repayment - Principal	(4.5)	4.7	4.8	4.9	4.9	5.0	5.1
Less: VDOT Contribution	-	-	13.0	-	-	-	-
Less: I-95 Interchange Partner Contribution	-	-	-	20.0	-	-	-
Accrual Accounting Reconciliation	44.3	-	-	-	-	-	-
Total Current Year Sources (Uses) Available	359.7	3.5	217.8	99.2	173.8	130.9	80.5
Annual Cash Requirements	**436.9**	**1,035.6**	**878.5**	**973.8**	**791.1**	**798.0**	**811.3**
Annual Cash Surplus/Deficit	$57.4	($167.4)	($94.2)	($190.0)	($2.1)	$1.0	$1.1
Total Cash Balance	**$839.1**	**$671.7**	**$577.6**	**$387.5**	**$385.4**	**$386.4**	**$387.5**
Bonds Outstanding (≤$3.0 b.)	**$2,091.8**	**$2,083.4**	**$2,263.7**	**$2,280.8**	**$2,390.0**	**$2,452.3**	**$2,458.2**
Financial Coverage Ratios							
Unencumbered Cash ($350MM minimum)	**$400.4**	**$638.7**	**$544.5**	**$354.5**	**$352.4**	**$353.3**	**$354.5**
Debt Service Coverage (≥2.0x)	**3.1**	**4.8**	**3.1**	**2.8**	**2.6**	**2.4**	**2.3**
Rate Covenant Compliance (Legal - 1.0x)	**2.4**	**3.9**	**2.5**	**2.3**	**2.1**	**2.0**	**1.9**

11.5.21 v3
FY 2023 Preliminary Operating Budget
Final FY 2022-2027 CTP
November 2021 T&R Report

TAB 12

MEMORANDUM

TO: MDTA Board
FROM: Ms. Chantelle Green, Director of Finance
SUBJECT: Bi-annual Review of Revenue Sufficiency
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

To provide the Maryland Transportation Authority's (MDTA) Board with a bi-annual review of revenue sufficiency for the Fiscal Year (FY) 2022-2027 financial forecast period.

SUMMARY

The MDTA Board Operating Policy requires a bi-annual review of revenue sufficiency to determine if current rate and fee levels are appropriate based on levels of expected spending. The most recent financial forecast shows that current toll rates, fees, and discounts provide enough revenue over the next six years to meet forecasted spending and meet all legal and policy requirements.

ANALYSIS

The Board Operating Policy requires that the Executive Director or designee perform a bi-annual review of the adequacy of forecasted revenue as a function of forecasted traffic volumes, projected operating and capital budgets, and debt service obligations. Per the policy, the revenue review should include toll rates, service and administrative fees, and frequency of use and commuter discount programs. The results must be reported to the Board at a public meeting. This bi-annual test was last completed in June 2021.

If approved, the November 2021 financial forecast shows that the MDTA will meet all financial goals and legal requirements over the six-year forecast period. The table below shows the results for the FY 2022-2027 timeframe.

	Required	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027
Rate Covenant	≥ 1.0	3.9	2.5	2.3	2.1	2.0	1.9
Debt Service Coverage	≥ 2.0	4.8	3.1	2.8	2.6	2.4	2.3
Unencumbered Cash	≥ $350M	$639M	$545M	$355M	$352M	$353M	$355M

Source: November 2021 Financial Forecast

Adherence to Financial Goals and Requirements

Given that the agency meets its financial coverage ratios and targeted unencumbered cash position, the MDTA's current toll rates, fees, and discounts provide enough revenue over the next six years to meet forecasted spending to meet all legal and policy requirements.

TAB 13

MEMORANDUM

TO: MDTA Board
FROM: Mr. Jeffrey Brown, Director of Budget
SUBJECT: Fiscal Year (FY) 2022 Operating Budget vs. Actual Spending Review
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

The purpose of the memorandum is to advise the Members of the MDTA Board on the status of spending against the Fiscal Year (FY) 2022 Operating Budget.

SUMMARY

As of September 30, 2021, 12% of the budget was spent compared to a target of 23%. All Objects were below the targeted spending level, with only Object 09 (Supplies & Materials) close to the targeted spend at 18%. The primary driver for the reduced spend are vacancies and the seasonality of expenses. Expenses are expected to become more aligned with budget as the fiscal year progresses.

ANALYSIS

Budget analysis threshold: More than $500,000 budgeted with variances greater than +/- 5% of the targeted spending level.

All objects are at or below targeted spending levels by more than 5%:

- Salaries & Wages/Technical & Special Fees (Object 01 & 02) is at 5% spent. Object 01 is at 19% spent and Object 02 is at 1% spent. The ongoing vacancies account for the performance in Object 01.

- Communications (Object 03) is 6% spent. The drivers are:
    - State Paid Telecommunications (Object 0305) is 0% spent ($1.7 million total). This is for the State Radio – an invoice that is provided once a year.
    - All other sub-objects average a 13% spend.

- Travel (Object 04) is below budget at an 8% spend. Travel typically ramps up in the summer months and staff are still limiting travel due to COVID-19.

- Fuel and Utilities (Object 06) is below budget at a 12% spend. This is mostly due to continued reduced electricity and fuel needs due to the transition to cashless tolling, fewer toll collectors, and increased teleworking. In addition, these items experience heavier spend during the winter months.

- Motor Vehicle Operations and Maintenance (Object 07) is below budget at a 14% spend. Insurance (Object 0704) has yet to be invoiced and vehicles are on order and yet to be paid. In addition, these items experience heavier spend during the winter months.

- Contractual Services (Object 08) is below budget at a 1% spend. Significant spending variances are:

    - *E-ZPass* Service Center (0873) is at 1% spend. An accrual reversal resulted in a $3.5 million credit to this line item which drives some of the total underspend as no payments have been processed for Kapsch and Transcore.
    - All other sub-objects are below budget at an average 6% spend, primarily due to the seasonality of expenses and timing of invoices.

- Supplies & Materials (Object 09) is at an 18% spend:

    - Salt (0906) is at a 0% spend (total budget of $1.4 million). This drives a lot of the underspend in Object 09. This performance will start to reverse as we head into the winter months.
    - Ammunition (0934) is at 139% spent. This is due to the annual payment for the Taser contract, which occurs in the 1st quarter plus an additional purchase from the Asset Forfeiture account.
    - All other sub-objects average a 13% spend, primarily due to seasonality.

- Replacement Equipment (Object 10) is below budget at a 3% spend due to timing of equipment ordering and receiving.

- Additional Equipment (Object 11) is at a 6% spend primarily due to due to timing of equipment ordering and receiving.

- Fixed Costs (Object 13) is at a 2% spend primarily due Insurance (Object 1309 – budget of $4.3 million). Charges for insurance will not occur until later in the year.

ATTACHMENT

- Budget vs Actual by Object 1st Qtr FY 22

TAB 14

MEMORANDUM

TO: MDTA Board
FROM: Ms. Jeanne Marriott, Capital Program Manager
SUBJECT: First Quarter Review of Fiscal Year 2022 Capital Budget vs. Actual Spending
DATE: November 18, 2021

PURPOSE OF MEMORANDUM

The purpose of the memorandum is to update the MDTA Board on the status of actual Fiscal Year (FY) 2022 spending against the FY 2022 capital budget in the FY 2022-2027 Draft Consolidated Transportation Program (CTP). This information was presented to the Finance Committee on November 9, 2021.

SUMMARY

As of September 30, 2021, 10.4% of the FY 2022 budget was spent as compared to the targeted spending level of 25%. The total budget for FY 2022 is $602.9 million. The actual spending through the first quarter was $62.8 million. The first quarter percentage is low because there are outstanding accruals for work completed in FY 2021.

ANALYSIS

Sixty-seven of the 95 projects budgeted in FY 2022 were within the acceptable spending limits of 0% to 50% (plus or minus 25% of the 25% target). Due to normal lags in invoicing, generally two months, a plus or minus 25% threshold was determined to be reasonable.

Actual spending through the first quarter for eight projects budgeted for more than $10 million each in FY 2022 was $48.1 million. The eight projects are detailed in Attachment A.

ATTACHMENT

- Attachment A – FY 2022 Capital Program Spending – Projects with FY 2022 Budget Over $10 Million

Attachment A

FY 2022 Capital Program Spending
Compared to Draft FY 2022-2027 CTP Budget
Projects with FY 2022 Budget Over $10 Million

PIN	Facility	Project Name	FY 2022 Budget Draft FY22-27 CTP ($000)	FY 2022 Actual thru 09/30/2021 ($000)	Q1 Spend Rate	FY 2022 Amount Remaining ($000)
1024	MA	Replace Nice/Middleton Bridge	$227,706	$29,241	13%	$198,465
2453	KH	I-95 ETL NBE - Express Toll Lanes to MD 152	$58,733	$3,882	7%	$54,851
2491	KH	I-95 ETL NBE - MD 152 Interchange Reconstruction	$40,064	$2,047	5%	$38,017
2516	BB	William Preston Lane Jr. Memorial Bridge AET Conversion	$22,869	$4,914	21%	$17,955
2329	MA	Replace 5KV Feeder on EB Span and Add Redundant Cable to EB & WB Spans	$19,916	$5,507	28%	$14,409
0280	HT	I-895 Bridge Replacement	$16,719	$1,053	6%	$15,666
2251	FT	Rehabilitate Fort McHenry Tunnel Vent Fans	$13,000	$1,500	12%	$11,500
2534	KH	I-95 ETL NB Extension - Eccelston Mitigation	$11,750	$2	0.02%	$11,748
		Total	**$410,757**	**$48,146**	**12%**	**$362,611**

TAB 15

VERBAL

TAB 16

VERBAL