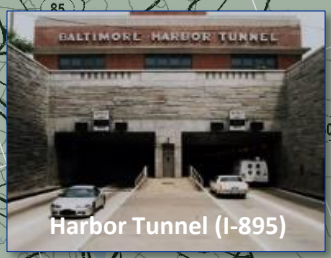
Maryland Transportation Authority FY 2024 Traffic and Toll Revenue Forecast Update

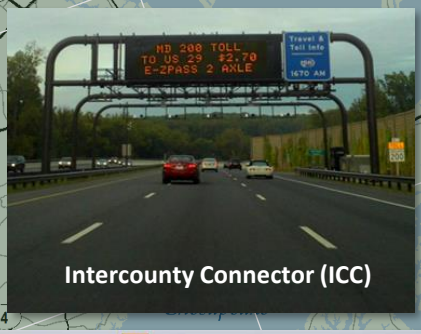

Kennedy Highway (I-95)


Hatem Bridge (US 40)

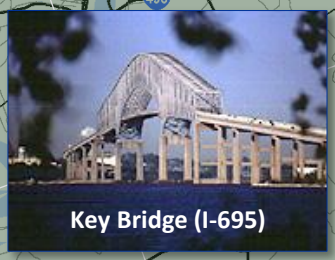

Fort McHenry Tunnel (I-95)



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 3, 2023

MDTA

Maryland Transportation Authority

CDM Smith

Table of Contents

List of Figures

List of Tables

Chapter 1
Introduction

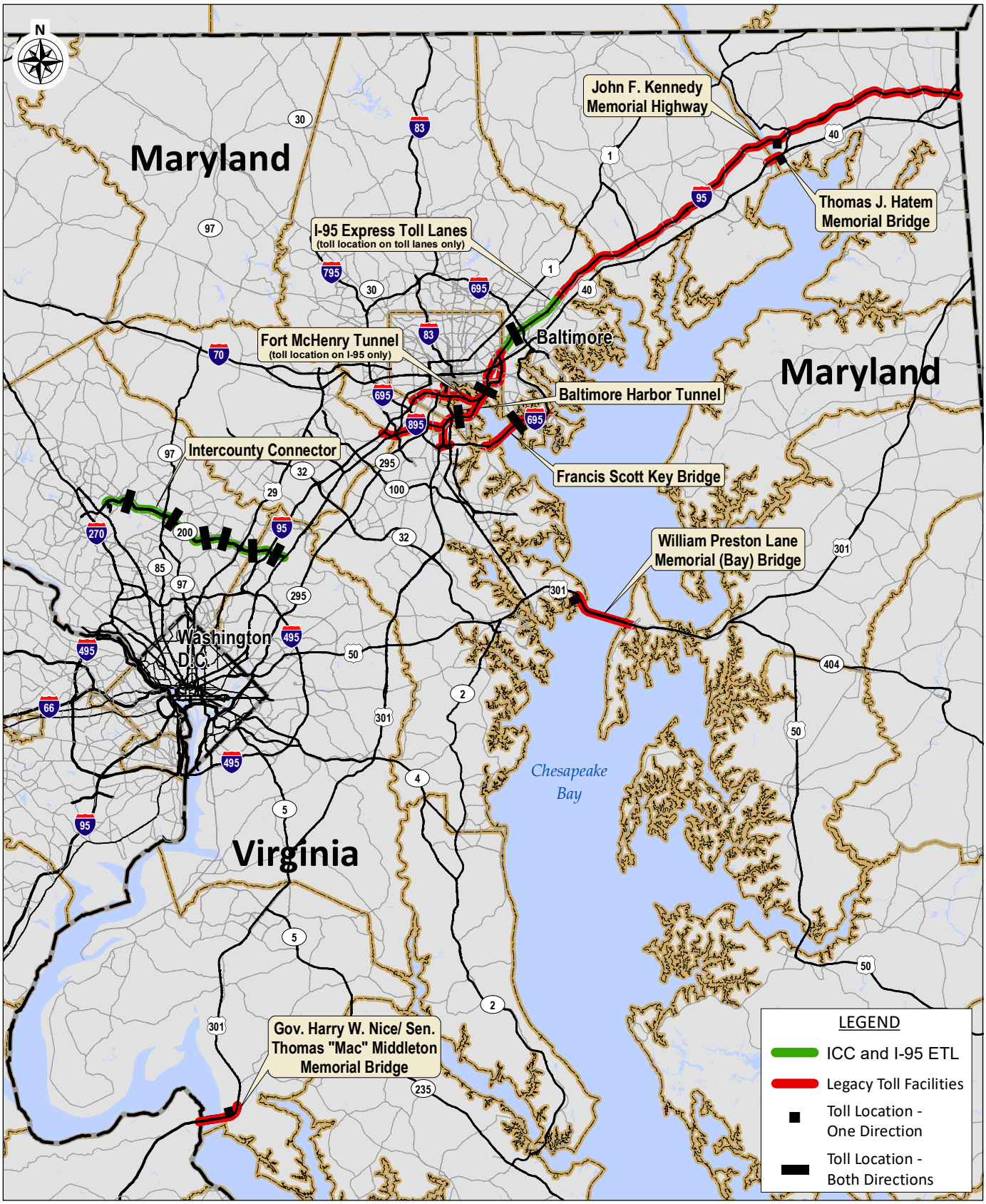
This letter report includes ten-year forecasts through FY 2033 for the seven "Legacy" toll facilities operated by MDTA, for the Intercounty Connector (ICC), and for the I-95 Express Toll Lanes (ETLs). It summarizes the study analysis, including a presentation of historical traffic and revenue trends, 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.



FACILITY LOCATION MAP
MARYLAND TOLL FACILITIES

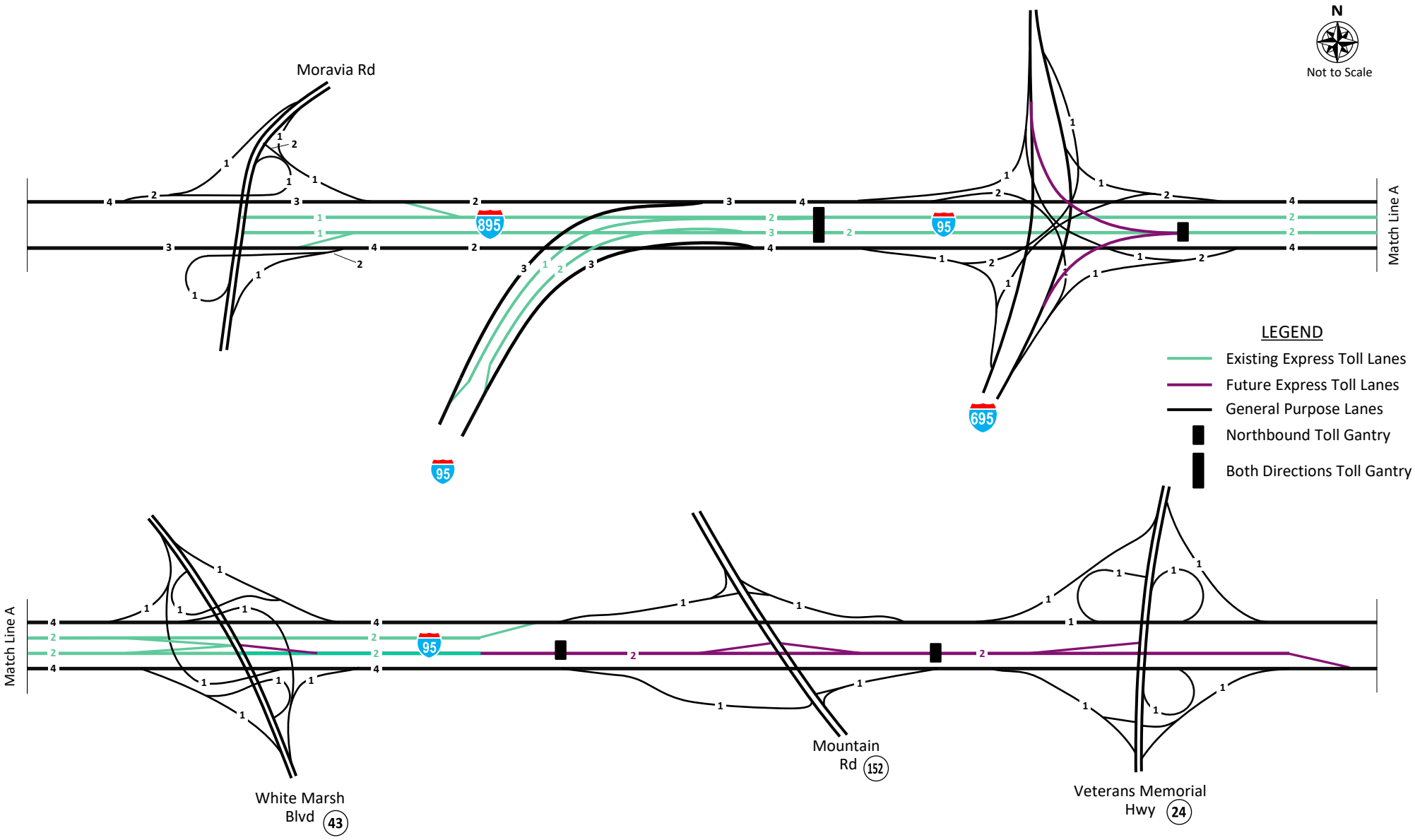
FIGURE 1-1

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, was completed in the spring of this year. The study is considering alternatives to address congestion on the Bay Bridge. A Record of Decision (ROD) on the study and Final Environmental Impact Statement (Final EIS) were approved in April 2022 along with the Selected Corridor Alternative. Final project design and construction will follow final agency decisions based on completion of Tier 2 NEPA Study documents. Currently, there is no timetable for construction of a new crossing.

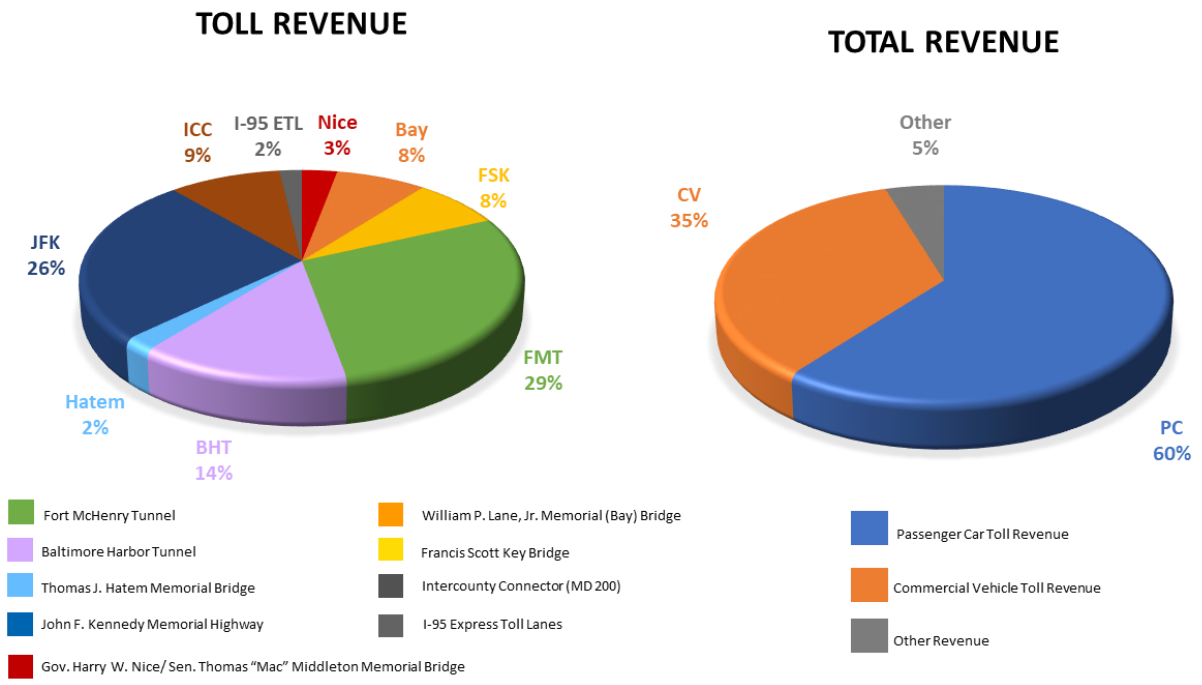


I-95 EXPRESS TOLL LANES (ETL)
EXISTING & FUTURE CONFIGURATION W/ I-695 DC

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, 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 35 percent commercial vehicle toll revenue, about 60 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).

Figure 1-3
FY 2023 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

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 FY 2023 Temporary Business Rule Changes

On March 17, 2020 MDTA implemented systemwide cashless tolling until further notice like most other larger toll agencies in the United States that had the capability to do so. Permanent cashless tolling on all MDTA 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. Mailing of Notice of Toll Due (NOTD) video invoices was paused in March 2020 but was resumed in the fall of 2020. This resulted in a backlog of NOTD transactions. To assist customers having to pay these backlogged transactions, the MDTA board approved a customer assistance plan on February 24th, 2022 which was effective immediately. This plan included a civil penalty waiver grace period and ceased referring toll bills to the Central

Collection Unit (CCU) and MDOT Motor Vehicle Administration (MDOT MVA) temporarily. The customer assistance plan was terminated on December 14th, 2022.

While all these video invoices have been mailed, not all invoices have been paid after termination of the customer assistance plan. Collection of remaining unpaid backlog transactions are assumed to continue through FY 2024 after referral to CCU and MDOT MVA.

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 2033.

1.2.4 Civil Penalties

Due to the customer assistance plan discussed in 1.2.2, civil penalties were not assessed on unpaid video invoices until after the termination of the customer assistance plan. Assessment of the $25 civil penalty resumed beginning December 1st, 2022 for all unpaid video transactions, including those from video invoices issued prior to the expiration of the customer assistance plan. Normal civil penalty collection is assumed for FY 2024 and the duration of the forecast period.

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. Trends in different payment shares are also provided.

Chapter 3, Socioeconomic Review, provides a summary of the econometric modeling analysis that was performed as an input into this annual forecast update. This chapter documents how the modeling was performed and the output from the process.

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.

2.1 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 2-1** for years 2007 through 2021 for the United States (U.S.) and Maryland. Data was not yet available for 2022.

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 at 0.6 percent per annum has been much lower than the U.S. average of 1.5 percent per annum for the period between 2009 and 2019. 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 declined by 13.1 and 19.1 percent, respectively. In 2021 interstate VMT increased by approximately 13 percent over 2020 levels in both the U.S. and Maryland. The U.S. interstate and total VMT in 2021 were still 1.6 percent below pre-pandemic levels of 2019. Maryland interstate and total VMT recovered to 4.3 and 3.0 percent below 2019 levels.

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 2-1

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	17,932	(0.0)	30.1	59,629	(0.4)
2019	842,604	1.1	25.7	3,276,482	0.6	18,059	0.7	30.0	60,136	0.9
2020	732,078	(13.1)	25.1	2,917,383	(11.0)	14,604	(19.1)	28.9	50,592	(15.9)
2021	815,183	11.4	25.9	3,146,281	7.8	16,545	13.3	29.2	56,601	11.9
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
2019 to 2021		(1.6)			(2.0)		(4.3)			(3.0)

2007-2020 VMT Data source: Table VM-2, Highway Statistics 1994-2020, USDOT FHWA Office of Policy Information.

2021 VMT Data source: Monthly Travel Volume Trends Reports, USDOT FHWA Office of Policy Information. 2022 data not available.

[1] Includes Puerto Rico.

2.2 MDTA Traffic and Revenue Trends

2.2.1 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 2-2**, **Table 2-3**, and **Table 2-4**, respectively. The historical transaction/trip and revenue trends for total vehicles by facility are graphically presented in **Figure 2-1.**

Table 2-2
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)	10.947	(65.6)	4.840	(34.1)
2022	4.207	46.7	13.419	84.1	25.065	118.2	38.186	48.5	10.636	42.0	13.580	74.1	3.049	91.7	40.030	265.7	8.321	71.9
2023	4.216	0.2	13.023	(3.0)	27.013	7.8	37.787	(1.0)	11.085	4.2	12.984	(4.4)	2.926	(4.0)	33.132	(17.2)	8.308	(0.2)
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)	18.781	(63.8)	5.873	(33.4)
2022	9.278	174.7	103.954	97.4	83.449	153.3	125.465	68.8	30.784	67.4	43.499	113.0	16.577	127.8	74.373	296.0	10.631	81.0
2023	6.652	(28.3)	99.059	(4.7)	87.269	4.6	120.463	(4.0)	30.822	0.1	39.486	(9.2)	15.169	(8.5)	62.638	(15.8)	10.443	(1.8)

[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 2-3
MDTA Commercial Vehicle Historic Collected Transactions and Toll Revenue

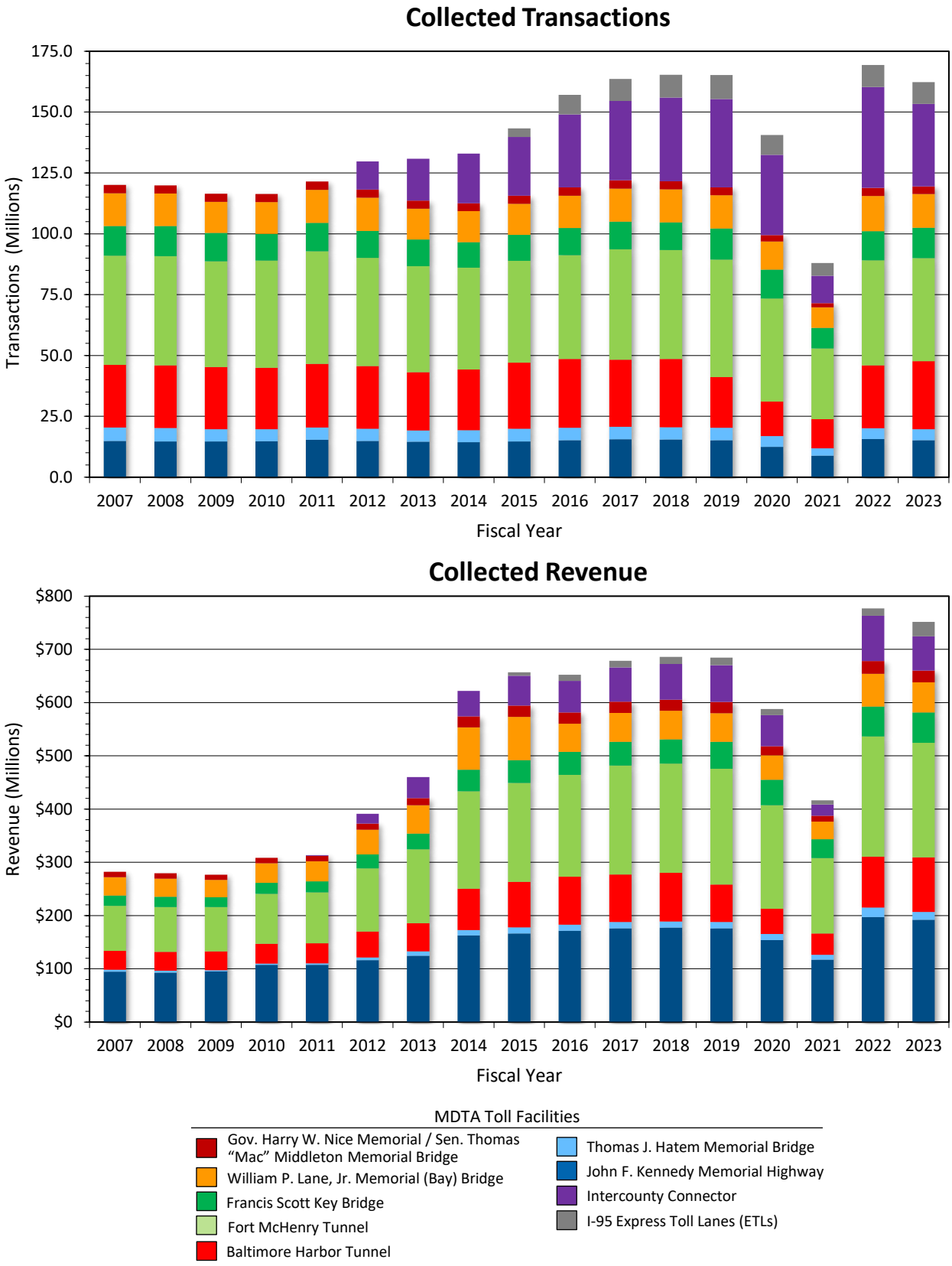
Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL [1]	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
Commercial Vehicle Transactions (in 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)	0.378	(65.5)	0.362	(19.3)
2022	0.268	45.2	2.229	44.6	0.793	79.3	4.888	46.9	1.354	43.0	0.928	41.4	0.252	104.1	1.431	278.4	0.679	87.8
2023	0.252	(6.1)	2.187	(1.9)	0.942	18.8	4.619	(5.5)	1.368	1.0	0.875	(5.8)	0.231	(8.2)	0.992	(30.7)	0.680	0.2
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)	2.532	(59.9)	1.880	(2.7)
2022	8.975	54.6	93.030	44.1	12.226	77.0	100.144	49.0	25.071	44.4	18.117	41.4	7.512	112.7	10.529	315.8	3.459	84.0
2023	8.348	(7.0)	92.890	(0.2)	14.928	22.1	95.041	(5.1)	25.968	3.6	16.948	(5.8)	6.890	(8.3)	7.513	(28.6)	3.513	1.6

[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 2-4
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)	11.325	(65.6)	5.202	(33.2)
2022	4.475	46.6	15.648	77.2	25.858	116.7	43.074	48.3	11.990	42.1	14.508	71.6	3.301	92.6	41.461	266.1	9.000	73.0
2023	4.468	(0.2)	15.210	(2.8)	27.955	8.1	42.406	(1.6)	12.453	3.9	13.859	(4.5)	3.157	(4.4)	34.124	(17.7)	8.988	(0.1)
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)	21.313	(63.3)	7.753	(27.9)
2022	18.253	98.8	196.984	68.0	95.675	140.1	225.610	59.4	55.855	56.2	61.615	86.5	24.089	122.8	84.903	298.4	14.090	81.7
2023	15.000	(17.8)	191.949	(2.6)	102.197	6.8	215.504	(4.5)	56.790	1.7	56.434	(8.4)	22.059	(8.4)	70.151	(17.4)	13.956	(0.9)

[1] ICC transactions reported are trips.



HISTORICAL COLLECTED TRANSACTIONS AND COLLECTED TOLL REVENUE BY FACILITY

FIGURE 2-1

Table 2-5 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 2-2** and **Table 2-3**. 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 2023 is shown for all facilities to show the period impacted by the COVID-19 pandemic, cashless conversion, and back-office transition.

Table 2-5
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 2023	(3.5)	(0.6)	7.5	(3.7)	(1.3)	0.5	(1.5)	(1.5)	(2.9)
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 2023	5.9	0.3	9.1	(2.3)	1.2	1.8	0.5	(0.0)	(2.4)
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 2023	3.5	3.7	12.6	1.9	4.4	(0.3)	2.3	(1.6)	6.1
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 2023	5.0	4.4	14.5	2.8	5.2	(0.1)	3.2	3.2	10.1

[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 2-5**, between FY 2007 and FY 2009, the passenger car transactions decreased on all seven legacy facilities. 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. 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 caused the FY 2020 Legacy system transaction to decrease by 16.4 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 28.3 percent decline in transactions over FY 2020. In FY 2022, transactions and revenue increased by 66.3 and 75.0 percent, respectively, over the prior year. This is due to ongoing COVID-19 recovery as well as collections on transactions from previous years due to the business rule changes. In FY 2023, the Legacy system transactions increased by 0.5 percent and revenue decreased by 2.7, a result of fewer transactions collected from prior years after termination of the customer assistance plan.

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. While FY 2018 and FY 2019 had trip growth around 5.5 percent. This strong growth is likely due to increasing regional population and employment as well as the ICC serving as a congestion relief route. 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 65.6 and 63.3 percent lower than FY 2020, respectively, due to ongoing pandemic impacts, back office transition collection issues, and the conversion to cashless tolling. In FY 2022 transactions and revenue nearly tripled over FY 2021 due to processing of transactions from the previous fiscal years as well as some recovery from COVID-19 traffic impacts. In FY 2023, transactions and revenue decreased by around 17 percent, resulting from lower collections on transactions from prior years after termination of the customer assistance plan.

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 33.2 percent lower than FY 2020 and revenue to be 27.9 percent lower. In FY 2022, transactions and revenue were 73 and 81.7 percent higher than FY 2021, respectively. Whereas, in FY 2023, transactions decreased by 0.1 percent and revenue decreased by 0.9 percent.

2.2.2 In-Lane Traffic

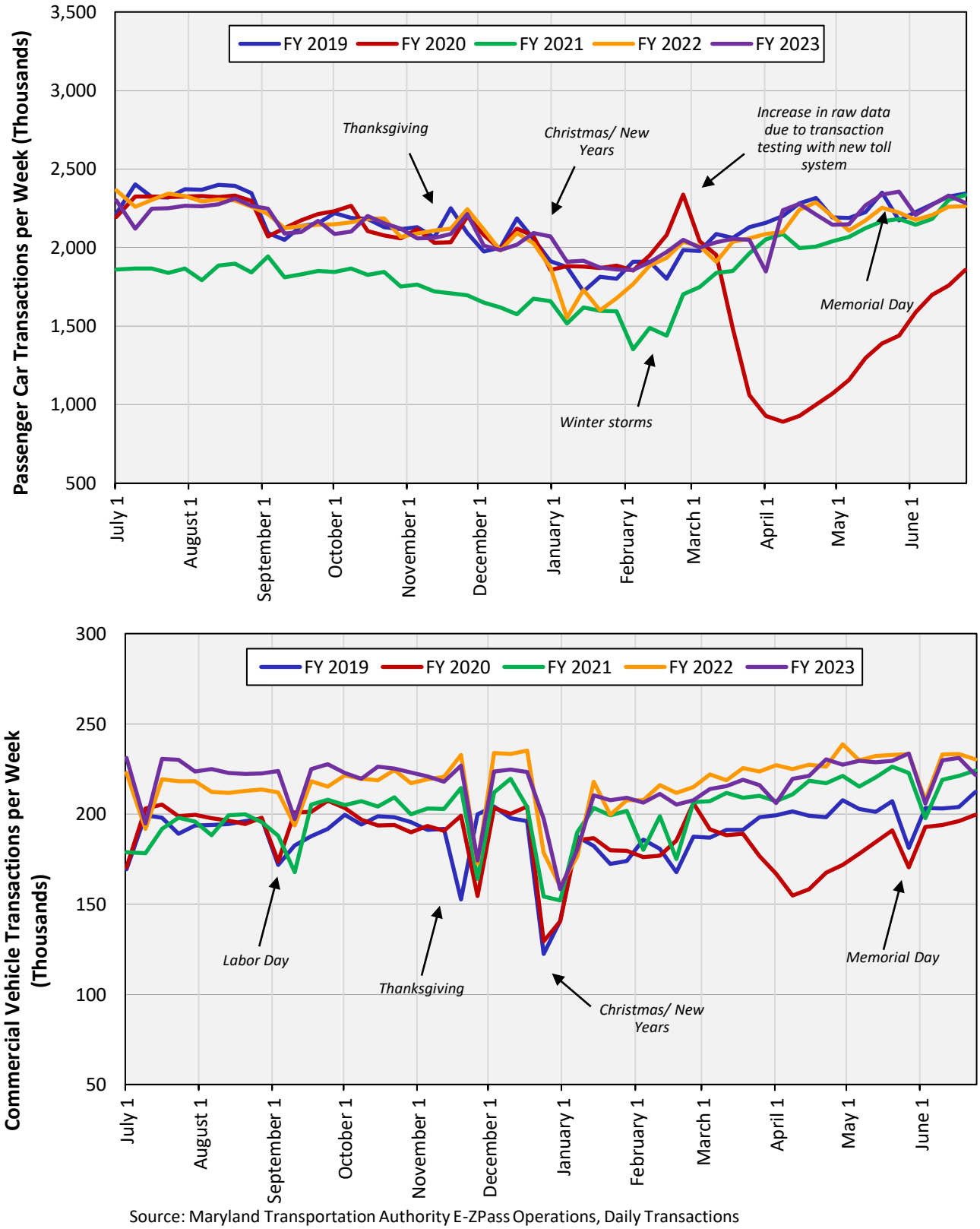
This section provides a brief review of the historical raw in-lane traffic trends for each of the seven MDTA Legacy facilities, I-95 ETLs, and the ICC. Data shown is for traffic at the toll gantry locations. Data for the ICC, which has several toll gantries, is shown as the total in-lane traffic at all toll gantries. This data allows analysis of traffic trends without the impacts of recent collection related challenges. **Table 2-6** summarizes this data annually for FY 2019 through FY 2023 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 has made a strong recovery and experienced significant growth over FY 2020 for all Legacy facilities. In FY 2022, all facilities had positive growth over FY 2021 with the Kennedy Highway, Bay Bridge, and Nice Bridge maintaining higher growth than the other facilities. In FY 2023, all facilities had positive growth, excluding the Hatem Bridge and Fort McHenry Tunnel which both decreased by around one percent for total vehicles.

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 and the congestion relief nature of these two facilities. This sector of traffic dropped significantly as remote working increased during the pandemic. 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. In FY 2022, the ICC and ETLs had positive growth of 24.2 and 34.4 percent, respectively, for passenger cars. Commercial vehicles make up a very small portion of traffic on both of these facilities, but similar to the Legacy facilities they showed less impact due to COVID-19 in FY 2020 and were recovered to 2019 levels between FY 2021 and 2022. In FY 2023, passenger car traffic on the ICC and ETL grew by 7.6 and 0.8, respectively. Similarly, commercial vehicle traffic on the ICC and ETL increased 0.9 and 3.3 percent, respectively. **Figure 2-2** provides a graphical representation of these year-over-year trends for in-lane data from FY 2019 through FY 2023 for the total Legacy System passenger cars and commercial vehicles. **Figure 2-3** and **Figure 2-4** show the same information for the Intercounty Connector and I-95 ETLs.

Table 2-6
MDTA In-Lane Traffic by Fiscal Year

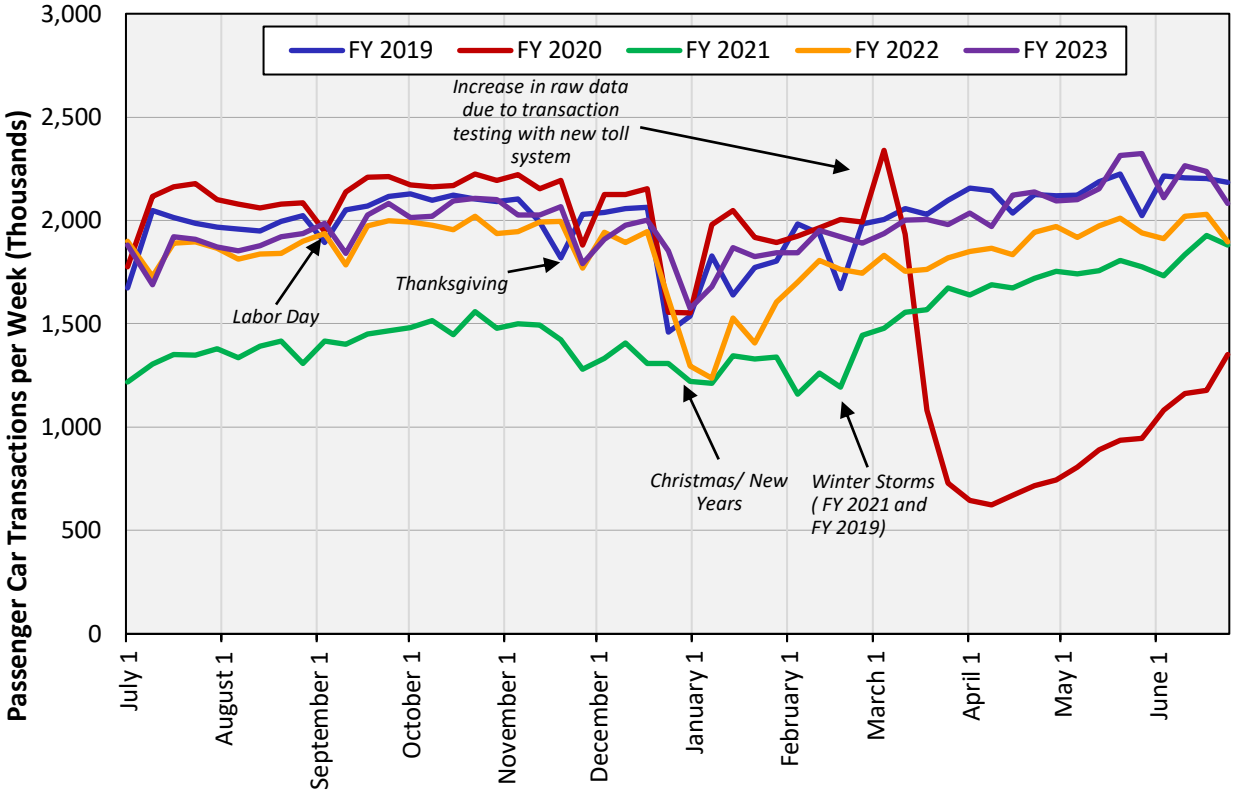
Fiscal Year	Hatem Bridge		Kennedy Highway		Harbor Tunnel		Fort McHenry Tunnel		Key Bridge		Bay Bridge		Nice/Middleton Bridge		ICC [1]		I-95 ETL [1]	
	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change	Value	Change
In-Lane Passenger Car Traffic (in 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)
2022	4.535	9.6	13.445	17.2	26.441	47.2	38.986	2.7	10.936	2.6	12.443	8.1	3.076	16.0	96.283	24.2	8.199	34.4
2023	4.494	(0.9)	13.547	0.8	28.052	6.1	38.502	(1.2)	10.974	0.4	12.674	1.9	3.093	0.6	103.577	7.6	8.263	0.8
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)
2022	0.270	8.4	2.349	6.3	0.921	35.2	5.156	5.1	1.402	7.4	0.946	0.3	0.265	23.3	3.758	4.7	0.678	41.9
2023	0.259	(4.1)	2.360	0.4	1.051	14.1	5.042	(2.2)	1.447	3.2	0.924	(2.4)	0.247	(6.8)	3.791	0.9	0.700	3.3
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)
2022	4.805	9.6	15.795	15.4	27.362	46.7	44.141	3.0	12.338	3.2	13.390	7.5	3.340	16.6	100.041	23.3	8.877	34.9
2023	4.753	(1.1)	15.907	0.7	29.103	6.4	43.544	(1.4)	12.421	0.7	13.598	1.6	3.340	(0.0)	107.368	7.3	8.963	1.0

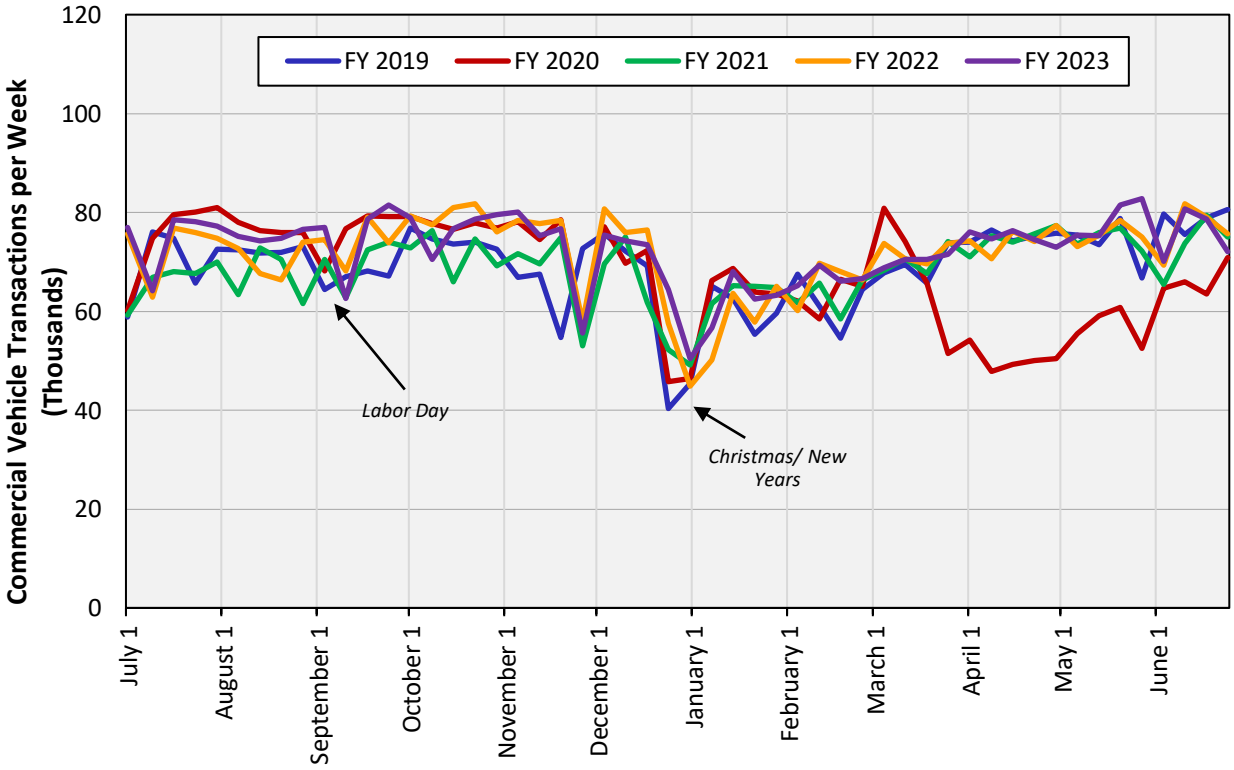


Source: Maryland Transportation Authority E-ZPass Operations, Daily Transactions

TRANSACTIONS PER WEEK BY FISCAL YEAR
TOTAL LEGACY SYSTEM

FIGURE 2-2

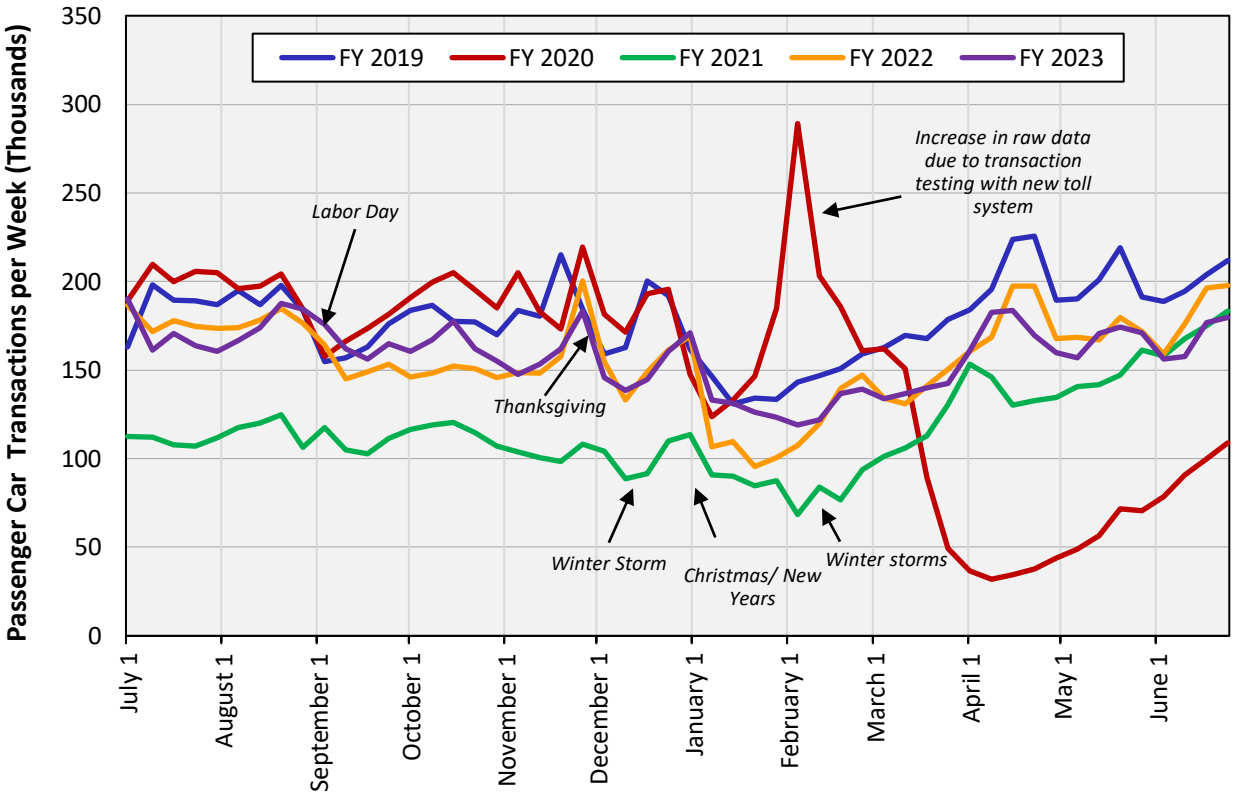


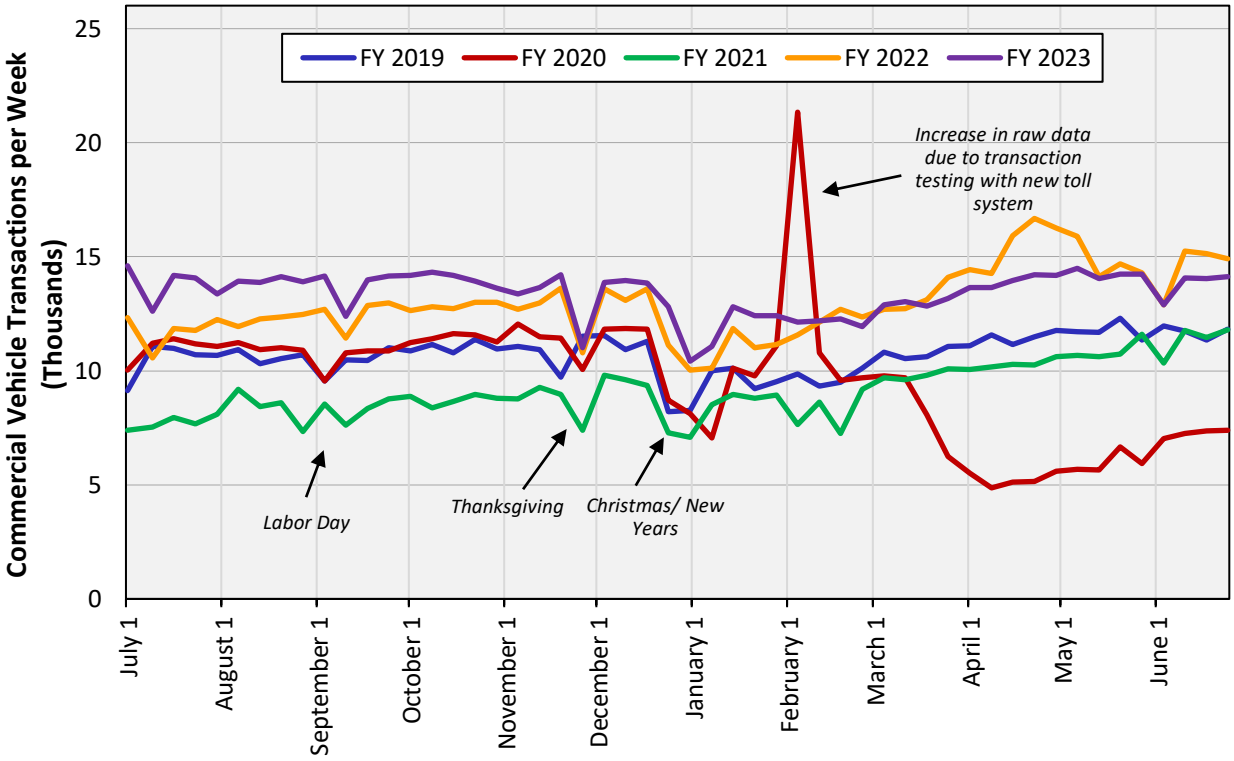


Source: Maryland Transportation Authority E-ZPass Operations, Daily Transactions

TRANSACTIONS PER WEEK BY FISCAL YEAR
INTERCOUNTY CONNECTOR

FIGURE 2-3





Source: Maryland Transportation Authority E-ZPass Operations, Daily Transactions

TRANSACTIONS PER WEEK BY FISCAL YEAR
I-95 EXPRESS TOLL LANES (ETL)

FIGURE 2-4

2.3 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 2022 are presented in **Table 2-7**.

As shown in Table 2-7, 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 an average annual 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. From 2019 to 2022, US 1 grew at an average annual rate of 0.3 percent, indicating recovery from COVID-19 impacts plus some additional growth.

The historical average annual daily traffic volumes and annual growth rates for the central region MSHA roadways are represented in Table 2-7 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 2.0 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. 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 the period from 2019 to 2022, MDTA facilities faired better in that they decreased by 0.4 percent per year compared to MSHA facilities which decreased by 3.3 percent.

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 2-7. 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 from the pandemic. However, both facilities recovered plus some additional growth in 2021.

Table 2-7
Average Annual Daily Traffic Trends on Major Highways

Calendar Year	Northern		Central						Southern					
	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)
2021	13,032	18.8	164,052	13.1	104,800	6.7	146,822	13.1	93,880	7.6	21,422	18.8	141,000	11.0
2022	12,713	(2.4)	165,533	0.9	105,741	0.9	148,143	0.9	94,441	0.6	20,893	(2.5)	N/A	N/A
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 2022[(1)]		0.3		(2.8)		(4.7)		(2.8)		(3.3)		(1.4)		1.4

Source: MSHA and VDOT AADT Reports.

[(1)] Value shown for I-95 (Virginia) is for the period 2019 to 2021 due to data availability.

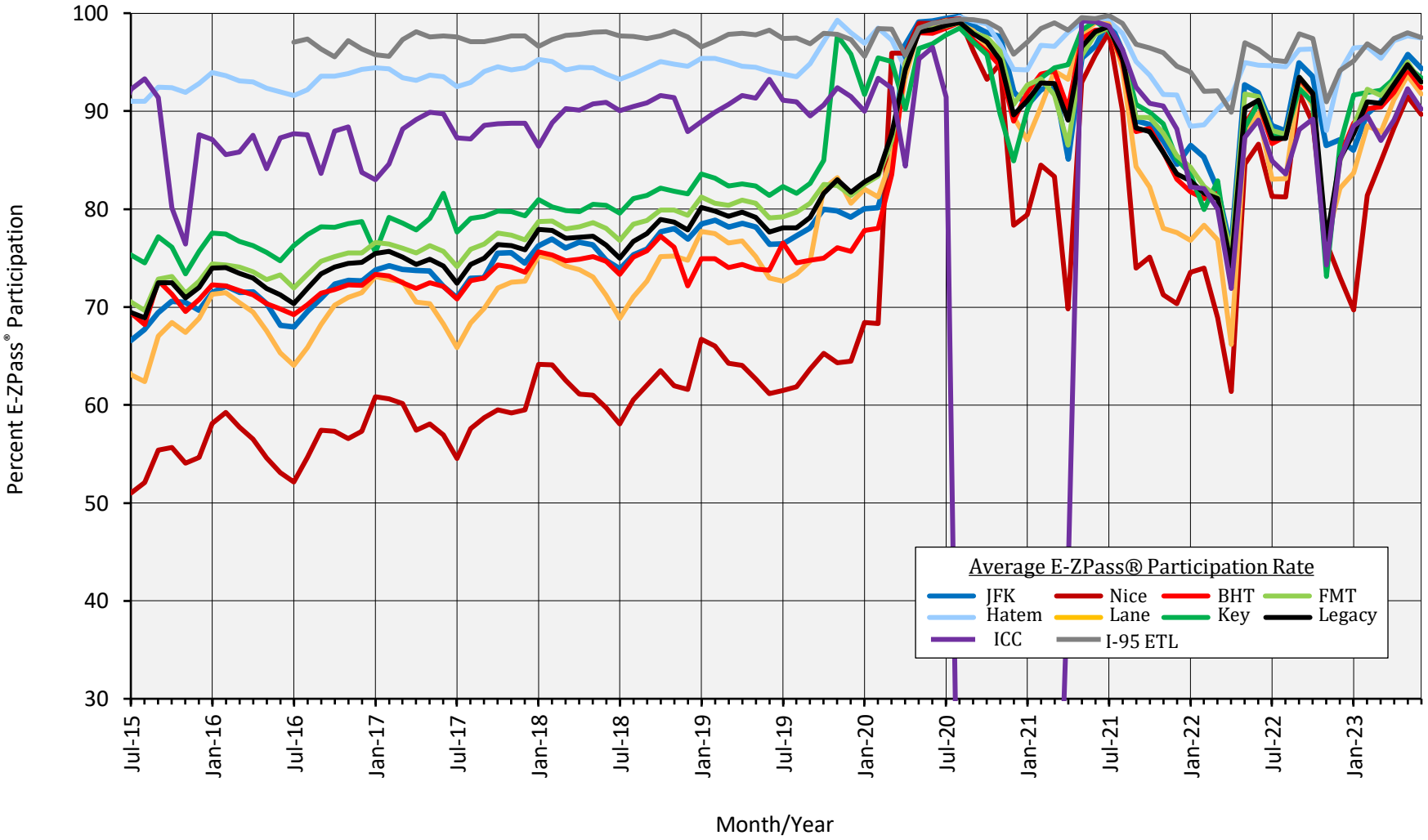
Trends over the past 13-year period for both the MDTA system and the other major highways were used as a reference in assessing the estimated ten-year traffic growth for the traffic and revenue forecasts presented in Chapter 4.

2.4 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 2023 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 and FY 2022 E-ZPass® trends to be more volatile than previous years. In particular, the ICC shows a significant drop in E-ZPass® marketshare in FY 2021 due to challenges with trip reconstruction related to the back-office transition. By the end of FY 2021 in July, E-ZPass® marketshare for all facilities was returning to levels seen initially after transition to all-electronic tolling. In FY 2022, as more NOTD invoices were mailed and paid from the paused period, the E-ZPass marketshare became volatile again as higher shares of video tolls were being paid. Due to this, the share of E-ZPass declined throughout the fiscal year before rebounding in May and June 2022. In FY 2023, there was a significant a drop in E-ZPass marketshare in November 2022 when the customer assistance plan terminated, causing another influx of video transactions being paid. In the second half of the fiscal year, rates rebound to above 90 percent in the final quarter for all facilities.



Note: FY 2021 Intercounty Connector toll revenue collection impacted by delay in trip reconstruction.
FY 2022 and FY 2023 impacted by video toll collection from delayed NOTDs from business rule changes.

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 (SED) 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.

Variables – 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**.

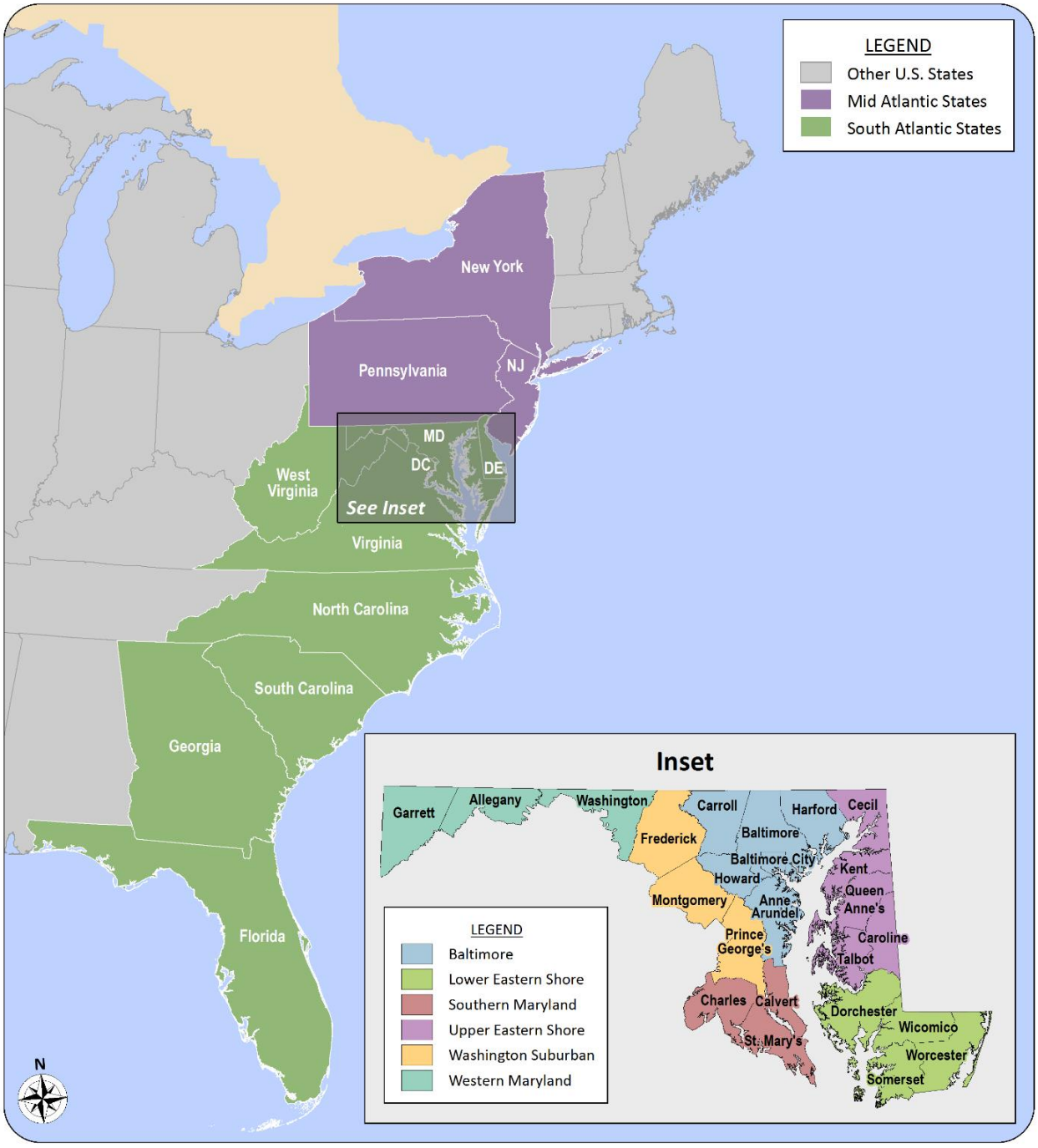
Sources – Government and private sector data sources include:

- 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)
- Woods & Poole Economics, Inc., 2023 Complete Economic and Demographic Data Source (WP23)[1]

Analysis Horizon – Historical socioeconomic data are presented annually, including annual growth rates, and compound annual growth rates (CAGR) in the preceding decade. Forecasts are provided for the next decade in five-year increments (2022-2027 and 2027-2032), as available.

[1]Woods & Poole Economics, Inc. Washington, D.C. Copyright 2023. 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



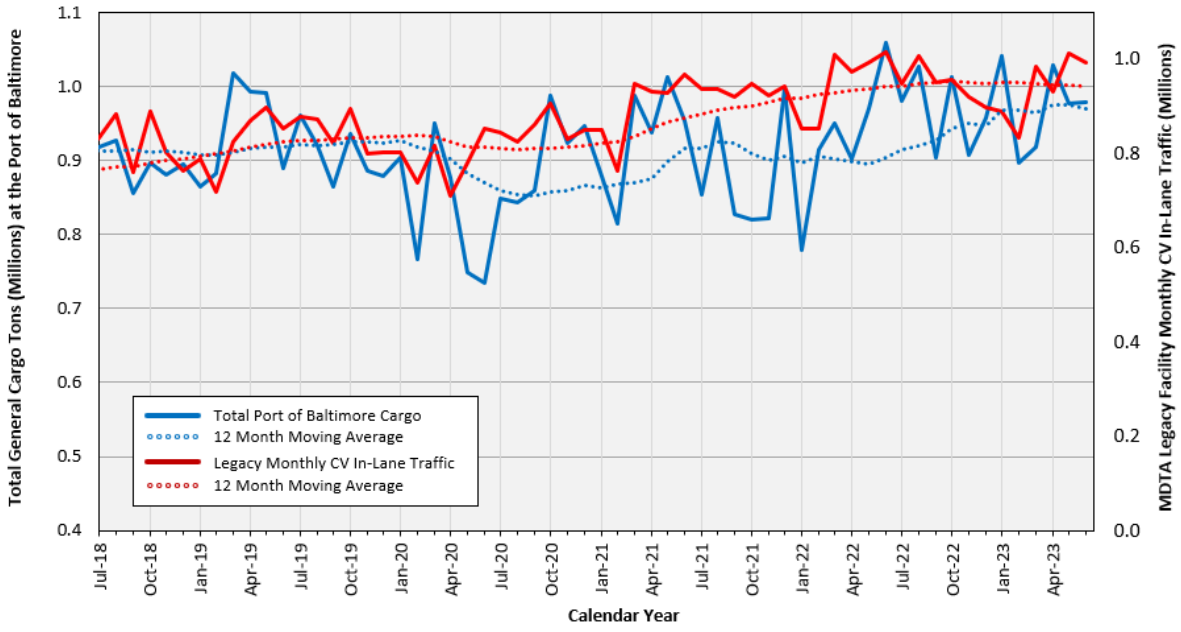
3.2 Recent Growth Trend Explanatory Factors

This section provides local explanatory factors for traffic trends on the MDTA facilities. In particular, this section focuses on the Port of Baltimore cargo which impacts commercial vehicles, and BWI enplanements which impacts trends on the Intercounty Connector,

3.2.1 Port of Baltimore Cargo Trends

Shipping and port activity was 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 3-2** provides a comparison of cargo activity at the port of Baltimore to total Legacy commercial vehicle in-lane traffic from July 2018 through June 2023. 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. Through the winter of 2021 to 2022, additional declines occurred before recovering to more normal trends in the summer of 2022. Throughout this period and through FY 2023, Legacy commercial vehicle transactions and port activity have been exhibiting similar trends.

Figure 3-2
Comparison of Monthly Port of Baltimore Total General Cargo in Tons and MDTA Legacy Facilities Commercial Vehicle In-Lane Traffic, FY 2018 – 2023



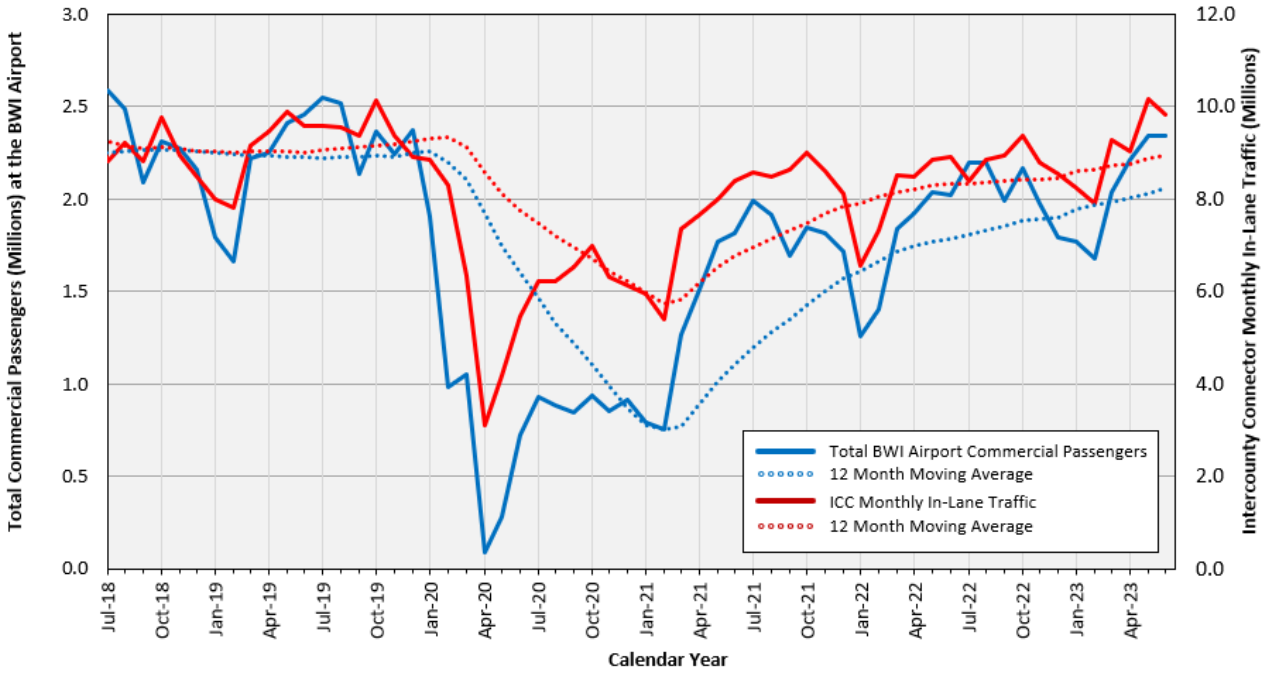
Source: Maryland Department of Transportation Port Administration.

3.2.2 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 3-3** shows the total passengers at BWI and the ICC toll transactions from July 2018 through June 2023. When all domestic and international travel was halted in April 2020, enplanements dropped significantly more than toll

transactions. Since that time, travel has steadily increased year-over-year with some dampening occurring in the winter months, which is apparent in both metrics. The monthly in-lane traffic on the ICC has followed the same trend as the enplanement data with the exclusion of July 2022. This shows the heavy impact airport trips can have on ICC trips.

Figure 3-3
Comparison of Monthly Baltimore Washington International (BWI) Airport and MDTA Intercounty Connector In-Lane Traffic, FY 2018 - 2023



Source: Baltimore/Washington International (BWI) Airport

3.3 Socioeconomic Variables

Table 3-1 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 income data are from 2015, which is several years old, although population and employment were recently updated.

Table 3-1
Socioeconomic Variables: Terms and Sources

Variable	Term(s)	Historical Data	Forecast Data
Population	Persons	U.S. Census Bureau	Woods & Poole, 2023 MD SDC, Dec. 2022
Employment	Persons	U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics	Woods & Poole, 2023 MD SDC, Oct. 2022
Unemployment	Percentage	U.S. Bureau of Labor Statistics	CBO, Feb. 2023 FOMC, Jun. 2023 OMB, Nov. 2022
Real Per Capita Income	2022$	Woods & Poole, 2023	Woods & Poole, 2023 MD SDC, Jan. 2015
Real Gross Domestic/Regional Product	2022$	U.S. Bureau of Economic Analysis, Woods & Poole, 2023	CBO, Feb. 2023 FOMC, Jun. 2023 OMB, Nov. 2022 Woods & Poole, 2023
Inflation	Annual Percentage Change	U.S. Bureau of Labor Statistics	CBO, Feb. 2023 FOMC, Jun. 2023 OMB, Nov. 2022
Fuel Prices	Price per Gallon, Price per Barrel	Energy Information Administration	Energy Information Administration

3.3.1 Population

Historical

Table 3-2 shows U.S. Census Bureau population for 2012 to 2022 (July 1st estimates). National population increased from 313.8 to 333.3 million, equating to 0.6% CAGR; the South Atlantic, which includes Maryland, grew faster at 1.0% annually, and Mid Atlantic growth was almost flat, at 0.2% annually.

Maryland's population grew 278,000, from 5.9 to almost 6.2 million, reflecting a 0.5% CAGR. The most populous sub-state region, Baltimore, grew 0.3% annually while Southern Maryland grew relatively fastest, at 0.8%. 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 0.8% in 2012 to 0.0% in 2021, and declining 0.2% in 2022, indicating effective plateauing. Baltimore's population decelerated earlier than the state, with effectively no growth since 2015.

Table 3-2
Historical Population

Geography	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	'12-'22
Population (Thousands)												
United States	313,831	315,994	318,301	320,635	322,941	324,986	326,688	328,240	331,512	332,032	333,288	19,457
Mid Atlantic	41,185	41,258	41,304	41,307	41,287	41,263	41,217	41,138	42,374	42,138	41,911	726
South Atlantic	61,145	61,729	62,382	63,117	63,907	64,620	65,230	65,785	66,165	66,666	67,453	6,308
Maryland	5,887	5,923	5,957	5,986	6,003	6,024	6,036	6,046	6,173	6,175	6,165	278
Baltimore	2,706	2,720	2,731	2,741	2,745	2,749	2,751	2,750	2,792	2,792	2,784	78
Lower Eastern Shore	211	211	211	211	212	212	213	213	213	215	216	5
Southern Maryland	349	352	355	357	360	363	366	369	374	378	380	30
Upper Eastern Shore	241	241	241	241	241	242	243	243	244	245	247	6
Washington Suburban	2,127	2,147	2,168	2,184	2,194	2,207	2,213	2,220	2,299	2,293	2,287	159
Western Maryland	253	253	252	251	251	251	251	250	251	252	251	-2
Annual Percent Change												
United States	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%	0.5%	0.5%	1.0%	0.2%	0.4%	0.6%
Mid Atlantic	0.3%	0.2%	0.1%	0.0%	-0.1%	-0.1%	-0.1%	-0.2%	3.0%	-0.6%	-0.5%	0.2%
South Atlantic	1.1%	1.0%	1.1%	1.2%	1.3%	1.1%	0.9%	0.9%	0.6%	0.8%	1.2%	1.0%
Maryland	0.8%	0.6%	0.6%	0.5%	0.3%	0.3%	0.2%	0.2%	2.1%	0.0%	-0.2%	0.5%
Baltimore	0.8%	0.5%	0.4%	0.4%	0.1%	0.1%	0.1%	0.0%	1.6%	0.0%	-0.3%	0.3%
Lower Eastern Shore	0.1%	0.1%	0.0%	0.1%	0.2%	0.1%	0.3%	0.4%	-0.1%	0.7%	0.5%	0.2%
Southern Maryland	0.9%	0.9%	0.7%	0.7%	0.8%	0.9%	0.8%	0.8%	1.2%	1.1%	0.5%	0.8%
Upper Eastern Shore	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.4%	0.3%	0.2%	0.7%	0.8%	0.3%
Washington Suburban	1.2%	0.9%	1.0%	0.8%	0.5%	0.6%	0.3%	0.3%	3.6%	-0.3%	-0.3%	0.7%
Western Maryland	-0.2%	-0.2%	-0.3%	-0.3%	0.0%	-0.1%	0.0%	-0.1%	0.4%	0.1%	-0.1%	-0.1%

Forecast

Table 3-3 shows average annual population growth forecasts through 2032 by Woods & Poole (WP23) and the Maryland State Data Center (MD SDC, Dec. 2022).

WP23 projects 0.6% National annualized growth between 2022 and 2032, the same pace as recent decade history. WP23 predicts Mid-Atlantic CAGR of 0.2% and South Atlantic at 0.9%.

Both WP23 and MD SDC project Maryland's population growth at around 0.6%, similar to national projections, 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, WP23 projects 0.5% and 0.6% CGAR, respectively. MD SDC projects similarly at 0.5% and 0.7%, respectively. Maryland and sub-regional forecasts from WP23 and MD SDC appear optimistic given actual population growth (plateauing) observed in recent years.

Table 3-3
Forecast Population Growth

	Historical	WP23			MD SDC		
Geography	'12-'22	'22-'27	'27-'32	'22-'32	'22-'27	'27-'32	'22-'32
United States	0.6%	0.7%	0.6%	0.6%	-	-	-
Mid Atlantic	0.2%	0.2%	0.2%	0.2%	-	-	-
South Atlantic	1.0%	0.9%	0.9%	0.9%	-	-	-
Maryland	0.5%	0.6%	0.5%	0.6%	0.6%	0.6%	0.6%
Baltimore	0.3%	0.5%	0.4%	0.5%	0.5%	0.4%	0.5%
Lower Eastern Shore	0.2%	0.5%	0.5%	0.5%	0.8%	0.8%	0.8%
Southern Maryland	0.8%	1.0%	1.0%	1.0%	1.1%	1.0%	1.0%
Upper Eastern Shore	0.3%	0.6%	0.6%	0.6%	0.7%	0.8%	0.7%
Washington Suburban	0.7%	0.7%	0.6%	0.6%	0.7%	0.6%	0.7%
Western Maryland	-0.1%	0.3%	0.3%	0.3%	0.6%	0.6%	0.6%

3.3.2 Employment

Historical

Employment data in **Table 3-4** are from the U.S. Bureau of Economic Analysis (BEA) through 2021, with 2022 derived via applying the Bureau of Labor Statistics' (BLS) 2022/2021 growth. Between 2012 and 2022, employment increased faster than population, but notably declined in 2020 due to COVID-19 (especially in the first half-year). Growth in the South Atlantic was 2.1% CAGR, higher than the Mid-Atlantic (1.0%) and nationally (1.5%). Mid-Atlantic exhibited the relatively steepest employment decline in 2020 compared to the South Atlantic and the Nation.

Historical Maryland growth was 1.0% CAGR from 2012 to 2022, with a decline in 2020 slightly greater than the Nation, at 3.3% versus 3.1%. Growth in the substate regions was relatively close to statewide during the entire preceding decade, with some annual differences, excepting Western Maryland, which actually declined in total since 2012, with the most pronounced decline in 2020 and due to COVID-19.

Table 3-4
Historical Employment

Geography	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	'12-'22
Employment (Thousands)												
United States	178,980	182,325	186,234	190,326	193,426	196,394	200,281	201,648	195,302	201,143	207,983	29,004
Mid Atlantic	23,771	24,103	24,507	24,913	25,244	25,503	25,969	26,091	24,605	25,343	26,214	2,443
South Atlantic	34,027	34,673	35,561	36,541	37,359	38,207	39,202	39,666	39,072	40,345	41,956	7,929
Maryland	3,439	3,494	3,538	3,603	3,659	3,697	3,751	3,744	3,621	3,714	3,793	354
Baltimore	1,685	1,712	1,732	1,765	1,790	1,810	1,838	1,836	1,773	1,816	1,849	164
Lower Eastern Shore	116	116	117	118	119	120	121	122	117	122	126	10
Southern Maryland	152	153	155	159	164	165	164	165	164	168	171	19
Upper Eastern Shore	117	120	121	122	124	124	126	126	122	127	131	14
Washington Suburban	1,230	1,253	1,272	1,297	1,321	1,336	1,360	1,355	1,313	1,345	1,377	147
Western Maryland	139	140	140	141	141	141	141	139	132	136	138	-1
Annual Percent Change												
United States	1.6%	1.9%	2.1%	2.2%	1.6%	1.5%	2.0%	0.7%	-3.1%	3.0%	3.4%	1.5%
Mid Atlantic	1.0%	1.4%	1.7%	1.7%	1.3%	1.0%	1.8%	0.5%	-5.7%	3.0%	3.4%	1.0%
South Atlantic	1.4%	1.9%	2.6%	2.8%	2.2%	2.3%	2.6%	1.2%	-1.5%	3.3%	4.0%	2.1%
Maryland	1.3%	1.6%	1.3%	1.8%	1.6%	1.0%	1.5%	-0.2%	-3.3%	2.6%	2.1%	1.0%
Baltimore	1.8%	1.6%	1.2%	1.9%	1.4%	1.1%	1.6%	-0.1%	-3.4%	2.4%	1.8%	0.9%
Lower Eastern Shore	1.1%	0.7%	0.6%	1.0%	0.8%	0.8%	0.7%	0.4%	-3.9%	4.5%	3.3%	0.9%
Southern Maryland	0.1%	1.0%	1.2%	2.4%	3.0%	0.8%	-0.3%	0.6%	-0.8%	2.7%	1.7%	1.2%
Upper Eastern Shore	1.5%	2.1%	1.4%	0.7%	1.6%	0.3%	1.6%	-0.5%	-3.1%	4.2%	2.8%	1.1%
Washington Suburban	0.7%	1.9%	1.5%	2.0%	1.8%	1.2%	1.8%	-0.4%	-3.1%	2.4%	2.4%	1.1%
Western Maryland	1.3%	0.2%	0.1%	0.9%	0.2%	-0.3%	0.1%	-1.1%	-5.5%	3.0%	1.9%	-0.1%

Forecast

Table 3-5 shows employment growth forecasts with 1.3% CAGR nationally through 2032, per WP23, slightly decelerated from the recent historical decade. South Atlantic forecast CAGR (1.5%) is expected to be higher than the U.S. and Mid-Atlantic (1.3%). WP23 forecasts 1.3% CAGR for Maryland, slightly accelerated relative to recent history and on-par with national forecasts.

According to the MD SDC (Oct. 2022), Maryland's employment forecast is 0.8% through 2032; almost half the pace forecast by WP23, but closer aligned with recent history. For Baltimore and Washington Suburban, WP23 projects 1.4% and 1.2%, respectively, with Southern Maryland as the relatively fastest region, at 1.4%. MD SDC regionally forecasts 0.8%, 0.8%, and 1.0%, respectively, again slightly decelerated from the recent decade history.

Table 3-5
Forecast Employment Growth

	Historical	WP23			MD SDC		
Geography	'12-'22	'22-'27	'27-'32	'22-'32	'22-'27	'27-'32	'22-'32
United States	1.5%	1.5%	1.2%	1.3%	-	-	-
Mid Atlantic	1.0%	1.5%	1.0%	1.3%	-	-	-
South Atlantic	2.1%	1.6%	1.4%	1.5%	-	-	-
Maryland	1.0%	1.5%	1.1%	1.3%	0.9%	0.7%	0.8%
Baltimore	0.9%	1.6%	1.2%	1.4%	0.8%	0.7%	0.8%
Lower Eastern Shore	0.9%	1.0%	0.8%	0.9%	0.6%	0.7%	0.7%
Southern Maryland	1.2%	1.4%	1.3%	1.4%	0.9%	1.0%	1.0%
Upper Eastern Shore	1.1%	1.3%	1.2%	1.2%	1.2%	1.1%	1.1%
Washington Suburban	1.1%	1.4%	1.1%	1.2%	0.9%	0.7%	0.8%
Western Maryland	-0.1%	1.1%	0.7%	0.9%	0.6%	0.6%	0.6%

3.3.3 Unemployment

Historical

Figure 3-4 shows annual unemployment rates from 2000 to 2022 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. Unemployment rates steadily declined by early 2022 to a relative historical low around 3.5% and remained as such since. On an annualized basis, national unemployment was 3.6% in 2022, with Maryland at 3.2%. So far in 2023, such rates have only marginally changed per month.

Figure 3-4
Historical Unemployment Rates (Macro Geographies)

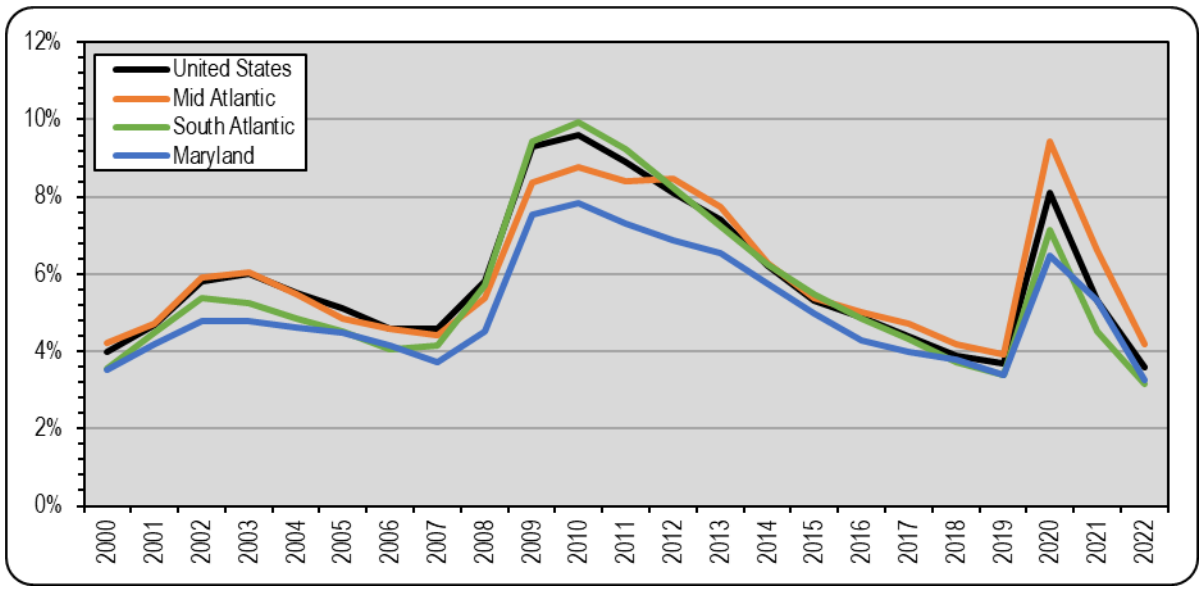
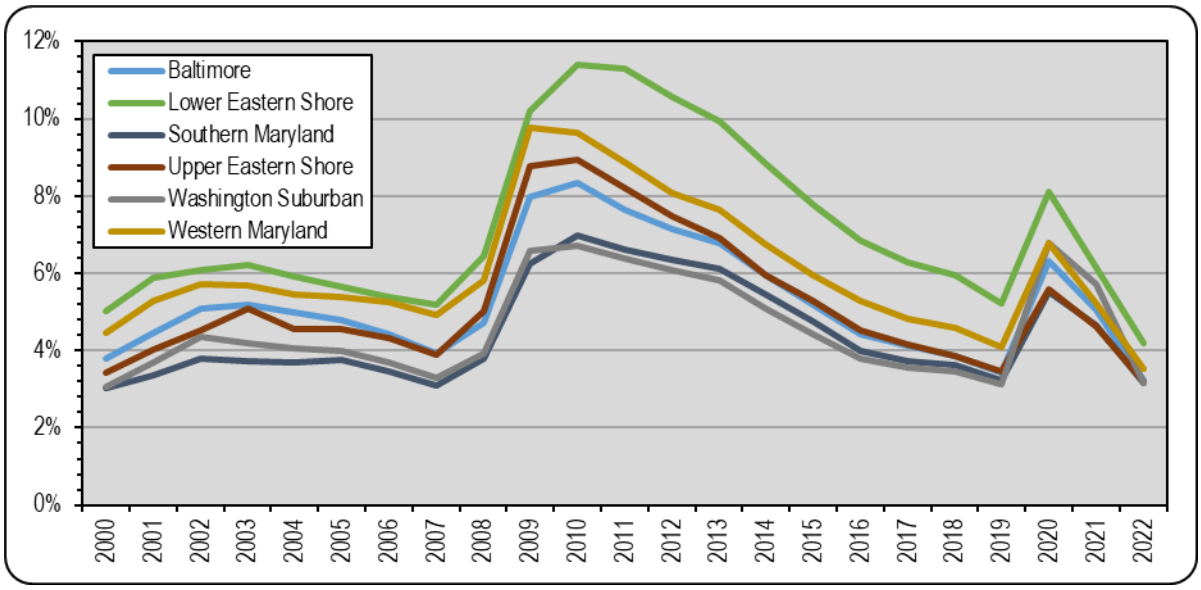


Figure 3-5 shows annual unemployment rates for Maryland's regions. In every year, Southern Maryland and Washington Suburban exhibited lower unemployment rates than elsewhere; unsurprising given the federal (D.C.) jobs concentrated there. Conversely, the Lower Eastern Shore and Western Maryland exhibited 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 steady decline through early 2022, whereby rates have held steadily at relatively low historical levels. On an annual basis, 2022 resulted in unemployment rates ranging between 3.2% and 4.2% for the state regions.

Figure 3-5
Historical Unemployment Rates (Maryland Regions)



Forecast

National unemployment rates in 2020 spiked from COVID-19 and subsequently declined to near-historical lows. Unemployment rate projections from the Congressional Budget Office, the Federal Reserve (FOMC), and Office of Management and Budget expect the annual rates to increase slightly through 2025, mostly expecting responses to the FED FOMC's continued monetary tightening policy (to stem inflation). After 2025, the forecasts are for around 4.0% to 4.5% thereafter, per **Figure 3-6**.

Table 3-6 provides more detail on the short-term unemployment outlook for 2023, 2024, and 2024, sourced from a wide variety of forecasters. The table is organized from most optimistic to most pessimistic forecasts for 2023. Data were compiled in August 2023 with most forecasters publishing data in June or July; the 2023 forecasts range from 3.6% to 4.1%, averaging 3.7% and then to 4.4% in 2024.

Figure 3-6
Forecast U.S. Unemployment Rate

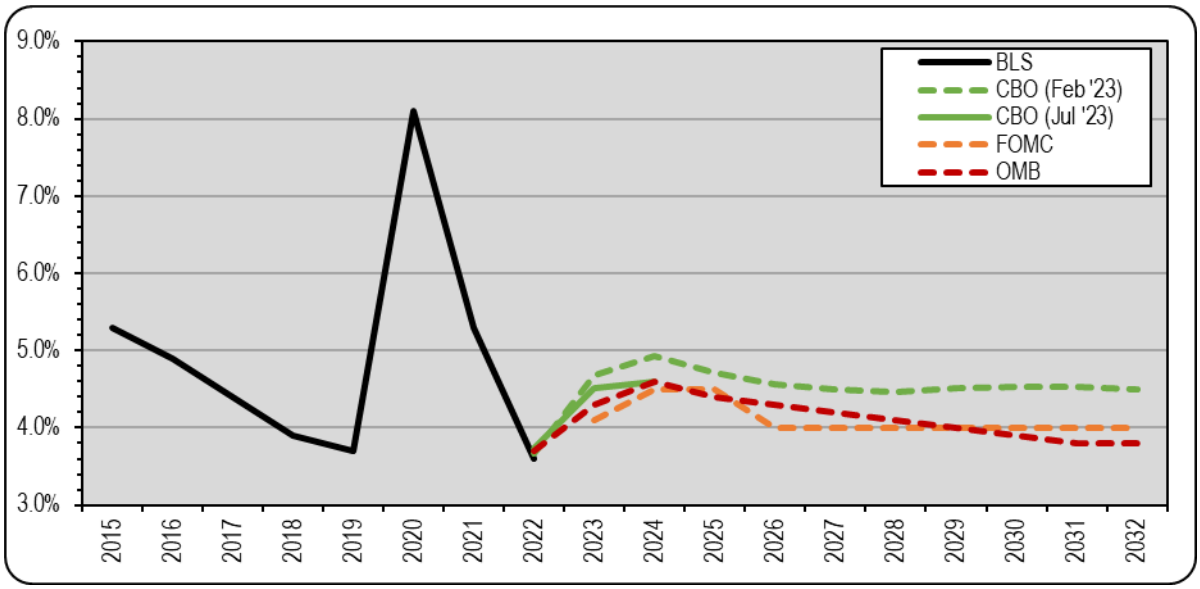


Table 3-6
Short-Term Forecast U.S. Unemployment Rate

Source	Release Date	2023	2024	2025
Wells Fargo Securities Economics Group	July 13, 2023	3.6%	4.4%	#N/A
Conference Board	August 2, 2023	3.6%	4.0%	#N/A
Bank of Montreal (BMO) Capital Markets Economics	August 4, 2023	3.6%	4.4%	#N/A
University of Michigan: Research Seminar in Quantitative Economics (RSQE)	May 19, 2023	3.6%	4.1%	#N/A
Energy Information Administration (EIA): Short-Term Energy Outlook	August 9, 2023	3.6%	4.0%	#N/A
TD Economics	June 15, 2023	3.6%	4.3%	#N/A
Federal Reserve Bank of Philadelphia: Survey of Professional Forecasters*	August 11, 2023	3.6%	4.0%	4.2%
Organization for Economic Cooperation and Development (OECD)	June 7, 2023	3.7%	4.4%	#N/A
ScotiaBank Global Economics	July 20, 2023	3.7%	4.3%	#N/A
National Association of Realtors	July 25, 2023	3.7%	4.1%	#N/A
Congressional Budget Office (CBO)	June 28, 2023	3.7%	4.5%	4.6%
PNC Financial Services Group	June 27, 2023	3.8%	4.8%	5.0%
Office of Management and Budget (OMB)	June 1, 2023	3.8%	4.4%	4.2%
International Monetary Fund (IMF): World Economic Outlook	April 13, 2023	3.8%	4.9%	4.8%
Royal Bank of Canada (RBC) Economics	June 8, 2023	3.9%	4.8%	#N/A
Federal Reserve Bank: Federal Open Market Committee (FOMC)	June 14, 2023	4.1%	4.5%	4.5%
Average		3.7%	4.4%	4.5%

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 2022$[2], is presented in **Table 3-7**, from WP23. Per capita personal income nationally increased from $54,742 in 2012 to $66,967 in 2022, or 2.0% CAGR. In the Mid-Atlantic and South Atlantic, the CAGRs were also 2.0%. Maryland's growth was 1.3%. In Maryland's regions, historical growth was lower than the nation, ranging from 0.8% in Washington Suburban to 1.8% in the Upper Eastern Shore.

While historical growth was relatively slower in Maryland than nationally, the absolute real income per capita was relatively higher. At $73,933, Maryland's per capita personal income was 10.4% higher than the Nation, and 16.8% higher than the South Atlantic in 2022. The Washington Suburban region, at $79,014 in 2022, was 18.0% higher than the nation, and Baltimore's $74,485 was 11.2% higher.

Table 3-7
Historical Real Personal Income Per Capita (2022$)

Geography	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	'12-'22
Total Real Personal Income/Capita (2022$)												
United States	54,742	54,315	56,001	58,069	58,540	59,733	61,023	62,879	66,062	68,131	66,967	12,226
Mid Atlantic	62,946	62,486	63,911	66,258	67,432	69,172	70,296	72,132	75,506	77,448	77,051	14,105
South Atlantic	52,007	50,932	52,587	54,843	55,471	56,776	57,819	59,749	62,301	64,370	63,316	11,310
Maryland	64,876	63,355	64,097	66,537	68,012	68,557	68,741	69,674	72,603	74,074	73,933	9,057
Baltimore	63,071	62,266	63,458	65,547	66,671	67,402	67,930	69,618	73,198	74,669	74,485	11,414
Lower Eastern Shore	45,877	46,139	47,558	49,960	49,531	50,272	49,638	49,642	52,389	54,157	52,432	6,555
Southern Maryland	62,170	61,047	61,482	63,582	64,411	64,643	64,825	65,997	68,986	70,193	69,663	7,493
Upper Eastern Shore	56,453	56,593	57,531	59,397	60,584	61,610	62,237	64,349	66,932	68,721	67,798	11,345
Washington Suburban	72,734	69,681	69,686	72,756	74,983	75,275	74,988	74,912	77,042	78,568	79,014	6,280
Western Maryland	45,309	44,893	46,146	47,471	48,601	48,735	49,430	50,242	53,408	54,573	52,554	7,246
Annual Percent Change												
United States	2.3%	-0.8%	3.1%	3.7%	-0.8%	2.0%	2.2%	3.0%	5.1%	3.1%	-1.7%	2.0%
Mid Atlantic	2.0%	-0.7%	2.3%	3.7%	1.8%	2.6%	1.6%	2.6%	4.7%	2.6%	-0.5%	2.0%
South Atlantic	1.2%	-2.1%	3.2%	4.3%	1.1%	2.4%	1.8%	3.3%	4.3%	3.3%	-1.6%	2.0%
Maryland	-0.1%	-2.3%	1.2%	3.8%	-2.2%	0.8%	0.3%	1.4%	4.2%	2.0%	-0.2%	1.3%
Baltimore	0.2%	-1.3%	1.9%	3.3%	1.7%	1.1%	0.8%	2.5%	5.1%	2.0%	-0.2%	1.7%
Lower Eastern Shore	-0.7%	0.6%	3.1%	5.1%	-0.9%	1.5%	-1.3%	0.0%	5.5%	3.4%	-3.2%	1.3%
Southern Maryland	-1.0%	-1.8%	0.7%	3.4%	1.3%	0.4%	0.3%	1.8%	4.5%	1.7%	-0.8%	1.1%
Upper Eastern Shore	0.2%	0.2%	1.7%	3.2%	2.0%	1.7%	1.0%	3.4%	4.0%	2.7%	-1.3%	1.8%
Washington Suburban	-0.4%	-4.2%	0.0%	4.4%	3.1%	0.4%	-0.4%	-0.1%	2.8%	2.0%	0.6%	0.8%
Western Maryland	0.7%	-0.9%	2.8%	2.9%	2.4%	0.3%	1.4%	1.6%	6.3%	2.2%	-3.7%	1.5%

[2] WP23 provides real income per capita in 2012$, per current BEA data conventions; dollars in inflated to 2022$ using WP23's PCE index.

Forecast

Table 3-8 provides real personal income per capita forecasts. According to WP23, national growth is projected at 1.6% CAGR between 2022-2032; the Mid-Atlantic, South Atlantic, Maryland, and sub-state regions are expected to exhibit similar growth patterns, ranging between 1.6% and 1.7%. Maryland's SDC forecasts a relatively slower growth than WP23, with decelerating growth around or below 1.0% CAGR; however, the data are from 2015.

Table 3-8
Forecast Real Personal Income Per Capita Growth

	Historical	WP23			MD SDC		
Geography	'12-'22	'22-'27	'27-'32	'22-'32	'22-'27	'27-'32	'22-'32
United States	2.0%	1.6%	1.6%	1.6%	-	-	-
Mid Atlantic	2.0%	1.8%	1.6%	1.7%	-	-	-
South Atlantic	2.0%	1.6%	1.6%	1.6%	-	-	-
Maryland	1.3%	1.7%	1.5%	1.6%	1.0%	0.8%	0.9%
Baltimore	1.7%	1.8%	1.7%	1.8%	1.1%	0.8%	1.0%
Lower Eastern Shore	1.3%	1.4%	1.5%	1.5%	1.0%	0.9%	0.9%
Southern Maryland	1.1%	1.5%	1.3%	1.4%	1.1%	0.9%	1.0%
Upper Eastern Shore	1.8%	1.4%	1.5%	1.5%	1.1%	0.8%	0.9%
Washington Suburban	0.8%	1.5%	1.4%	1.4%	0.9%	0.7%	0.8%
Western Maryland	1.5%	1.6%	1.5%	1.5%	1.1%	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 2022$[3], are presented in **Table 3-9**. Real GDP grew at 2.1% CAGR between 2012-2022, and a relatively large 2.8% annual decline in 2020 effectively reset the national economy to 2017 to 2018 levels. However, 2021 rebounded beyond pre-COVID 2019 levels. Growth in the Mid-Atlantic was 2.3%, and the South Atlantic was 1.4% due to the relatively larger COVID-19-related downturn. At 1.0%, Maryland's real GRP historical growth was about half the U.S.

Data in Tables 3-2 and 3-4 showed in 2022, Maryland comprised 9.1% of the South Atlantic's population and 9.0% of employment, respectively. Table 3-9 shows that Maryland accounted for 12.8% of the South Atlantic's real GRP. Within Maryland, the sub-state regions of Baltimore and Washington Suburban accounted for 91.3% of Maryland's real GRP in 2022.

[3] BEA provides real GDP and GRP in 2012$; dollars in inflated to 2022$ using WP23's PCE index. BEA provided county-level data through 2021; data for 2022 are based on WP23's growth.

Table 3-9
Historical Real Gross Domestic/Regional Product (2022$)

Geography	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	'12-'22
Gross Regional Product (2022$ billions)												
United States	19,970	20,337	20,803	21,366	21,722	22,209	22,863	23,388	22,740	24,093	24,589	4,620
Mid Atlantic	3,529	3,574	3,652	3,767	3,860	3,957	4,046	4,138	4,041	4,306	4,419	890
South Atlantic	3,063	3,083	3,127	3,177	3,227	3,258	3,333	3,410	3,254	3,431	3,527	464
Maryland	408.5	410.7	417.2	427.7	442.4	449.9	452.1	452.2	432.9	452.8	453.0	44.4
Baltimore	199.0	202.2	205.4	210.4	217.2	220.9	223.7	226.0	216.0	225.3	235.1	36.1
Lower Eastern Shore	10.2	10.6	11.1	11.6	11.7	11.6	11.5	11.3	10.8	11.6	11.9	1.7
Southern Maryland	19.0	18.8	19.2	19.6	20.5	21.2	20.0	20.1	20.0	20.2	21.1	2.1
Upper Eastern Shore	10.4	10.9	11.0	11.3	11.8	12.2	12.5	12.3	11.6	12.3	12.7	2.3
Washington Suburban	158.0	156.3	158.4	162.7	168.6	171.3	171.5	169.9	162.8	171.1	178.6	20.6
Western Maryland	12.0	11.9	12.1	12.2	12.6	12.8	12.9	12.6	11.9	12.3	12.6	0.6
Annual Percent Change												
United States	2.3%	1.8%	2.3%	2.7%	1.7%	2.2%	2.9%	2.3%	-2.8%	5.9%	2.1%	2.1%
Mid Atlantic	0.6%	1.3%	2.2%	3.1%	2.5%	2.5%	2.3%	2.3%	-2.3%	6.5%	2.6%	2.3%
South Atlantic	2.9%	0.6%	1.4%	1.6%	1.6%	0.9%	2.3%	2.3%	-4.6%	5.4%	2.8%	1.4%
Maryland	0.0%	0.5%	1.6%	2.5%	3.4%	1.7%	0.5%	0.0%	-4.3%	4.6%	0.0%	1.0%
Baltimore	0.9%	1.6%	1.6%	2.5%	3.2%	1.7%	1.3%	1.0%	-4.5%	4.3%	4.3%	1.7%
Lower Eastern Shore	-2.5%	4.5%	4.7%	3.9%	1.0%	-0.8%	-1.0%	-1.6%	-4.5%	8.1%	2.1%	1.6%
Southern Maryland	-1.6%	-0.6%	1.8%	2.2%	4.8%	3.1%	-5.3%	0.1%	-0.6%	1.1%	4.4%	1.1%
Upper Eastern Shore	-0.3%	4.1%	1.2%	3.1%	3.9%	3.3%	2.5%	-1.5%	-5.6%	6.5%	2.9%	2.0%
Washington Suburban	-0.7%	-1.1%	1.3%	2.7%	3.7%	1.6%	0.1%	-0.9%	-4.2%	5.1%	4.4%	1.2%
Western Maryland	-0.2%	-1.0%	2.2%	0.3%	3.8%	1.5%	0.6%	-2.3%	-5.9%	3.9%	2.2%	0.5%

Forecast

Table 3-10 provides gross domestic/regional product forecasts. WP23 projects 2.0% annual real growth through 2032 nationally, and for the South Atlantic slightly faster (2.2%), with Maryland's GRP closer to the national 2.0%. Within Maryland, the highest real GRP growth is expected in Baltimore (2.1%), Southern Maryland (2.2%) and Washington Suburban (2.0%).

Table 3-10
Forecast Real Gross Domestic/Regional Product Growth

	Historical	WP23		
Geography	'12-'22	'22-'27	'27-'32	'22-'32
United States	2.1%	2.0%	2.0%	2.0%
Mid Atlantic	2.3%	2.0%	1.8%	1.9%
South Atlantic	1.4%	2.2%	2.2%	2.2%
Maryland	1.0%	2.1%	2.0%	2.0%
Baltimore	1.7%	2.2%	2.1%	2.1%
Lower Eastern Shore	1.6%	1.5%	1.7%	1.6%
Southern Maryland	1.1%	2.2%	2.2%	2.2%
Upper Eastern Shore	2.0%	1.8%	2.0%	1.9%
Washington Suburban	1.2%	2.1%	1.9%	2.0%
Western Maryland	0.5%	1.5%	1.5%	1.5%

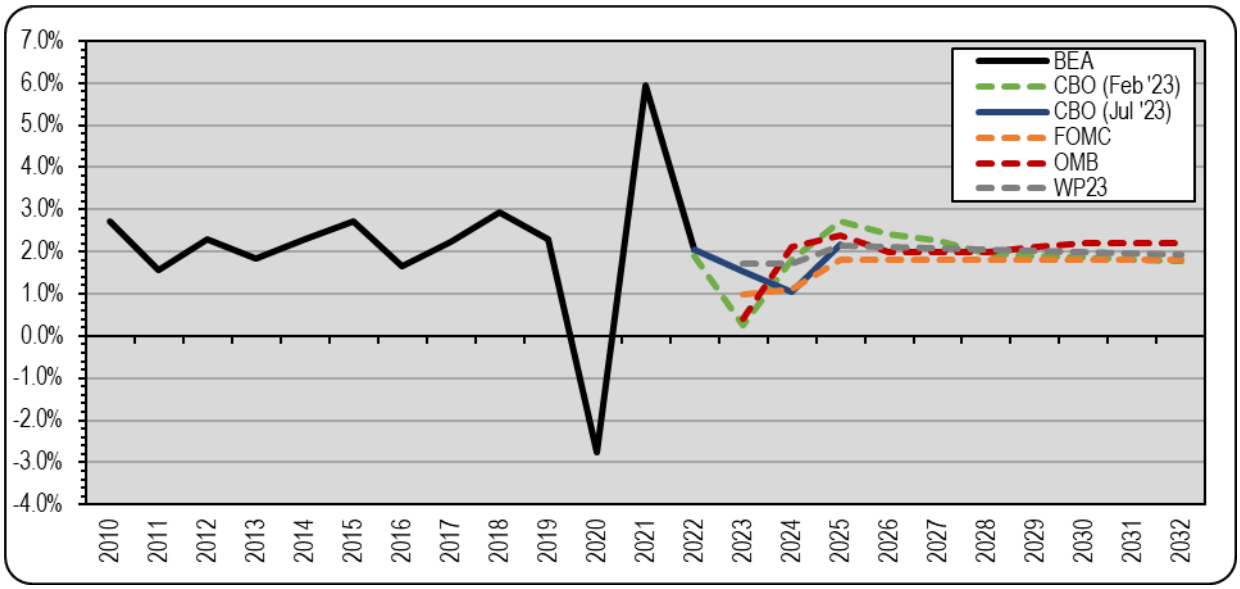
Table 3-11 provides detail on short-term GDP outlook for 2023, 2024 and 2025, sourced from various private and public sector agencies, and is organized from most optimistic to most pessimistic for 2023. As shown, most forecasters expect some decelerated growth in the next couple years, mostly stemming from continued FED FOMC monetary tightening, and some international trade slowdown, with an average of 1.6% in 2023 and 0.8% in 2024.

Table 3-11
Forecast Short-Term Real GDP Growth

Source	Release Date	2023	2024	2025
Bank of Montreal (BMO) Capital Markets Economics	August 4, 2023	2.1%	1.0%	#N/A
Federal Reserve Bank of Philadelphia: Survey of Professional Forecasters*	August 11, 2023	2.1%	1.3%	2.1%
Conference Board	August 2, 2023	1.9%	0.5%	#N/A
Energy Information Administration (EIA): Short-Term Energy Outlook	August 9, 2023	1.9%	1.2%	#N/A
International Monetary Fund (IMF): World Economic Outlook	April 13, 2023	1.8%	1.0%	#N/A
Woods & Poole Economics, Inc.	June 13, 2023	1.7%	1.7%	2.2%
Wells Fargo Securities Economics Group	July 13, 2023	1.7%	0.1%	#N/A
ScotiaBank Global Economics	July 20, 2023	1.6%	0.5%	#N/A
Organization for Economic Cooperation and Development (OECD)	June 7, 2023	1.6%	1.0%	#N/A
Congressional Budget Office (CBO)	June 28, 2023	1.5%	1.0%	2.2%
PNC Financial Services Group	June 27, 2023	1.5%	-0.3%	1.1%
TD Economics	June 15, 2023	1.5%	0.8%	#N/A
National Association of Realtors	July 25, 2023	1.4%	1.7%	#N/A
University of Michigan: Research Seminar in Quantitative Economics (RSQE)	May 19, 2023	1.3%	0.5%	#N/A
World Bank	June 13, 2023	1.1%	0.8%	2.3%
Federal Reserve Bank: Federal Open Market Committee (FOMC)	June 14, 2023	1.0%	1.1%	1.8%
Royal Bank of Canada (RBC) Economics	June 8, 2023	0.9%	0.3%	#N/A
Average		1.6%	0.8%	1.9%

Figure 3-7 shows real GDP historical growth from 2010-2022 and forecasted growth for about the next decade by the CBO, FOMC, OMB, and WP23. In 2023/4, the sources forecast a decelerated growth ranging around 1.5%. After that, all sources forecast a slight acceleration between 2.0% and 3.0% in 2025, and then a continuation of longer-term trends around 2.0% into the future.

Figure 3-7
Forecast Mid-Term Real GDP Growth



3.3.6 Inflation

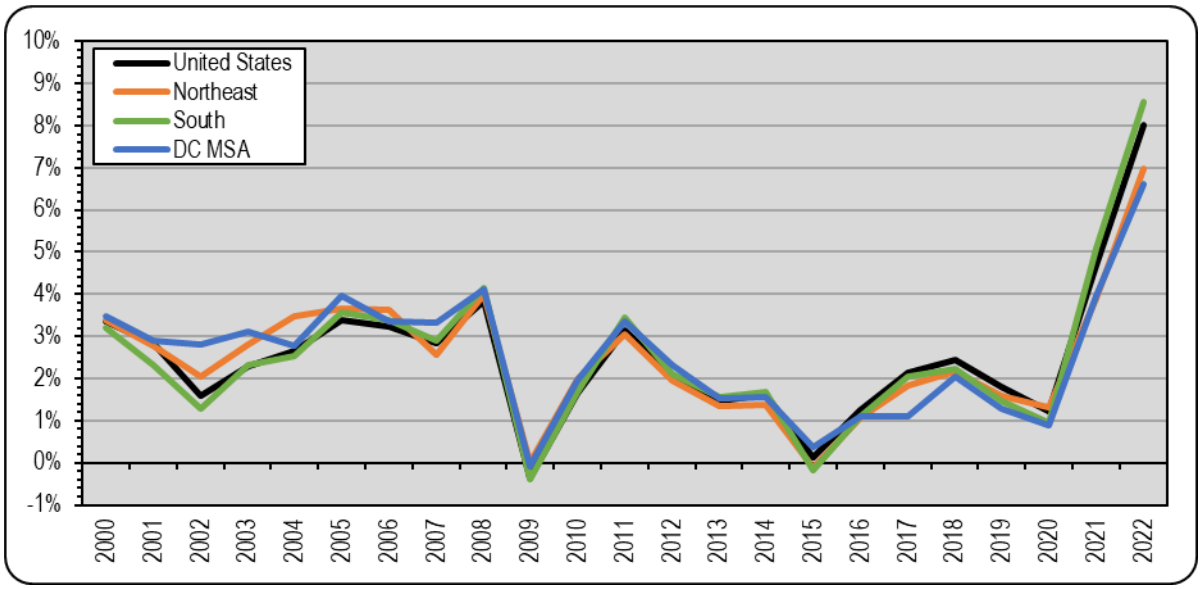
Comparing inflation rates with future toll policy plans can indicate the relative real cost of tolls over time. For example, if toll rates are unchanged during an inflation period, the real toll costs become relatively less expensive.

Historical

From 2000-2022, the national inflation rate[4] via the BLS averaged 2.5%, ranging from a high of 8.0% recently in 2022 to a low of -0.4% in 2009. **Figure 3-8** shows that inflation rates in the Northeast,[5] South,[6] and Washington DC MSA[7] closely tracked the U.S. rate. Although inflation was quite high in 2021 and 2022 as a function of COVID-19 related factors (pent up demand, supply chain restrictions, etc.), the FED FOMC has implemented monetary tightening policies aimed at curtaining further inflation, and has had some success as of 2023, with mid-year year-over-year inflation coming down to the mid-3.0% range.

[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.

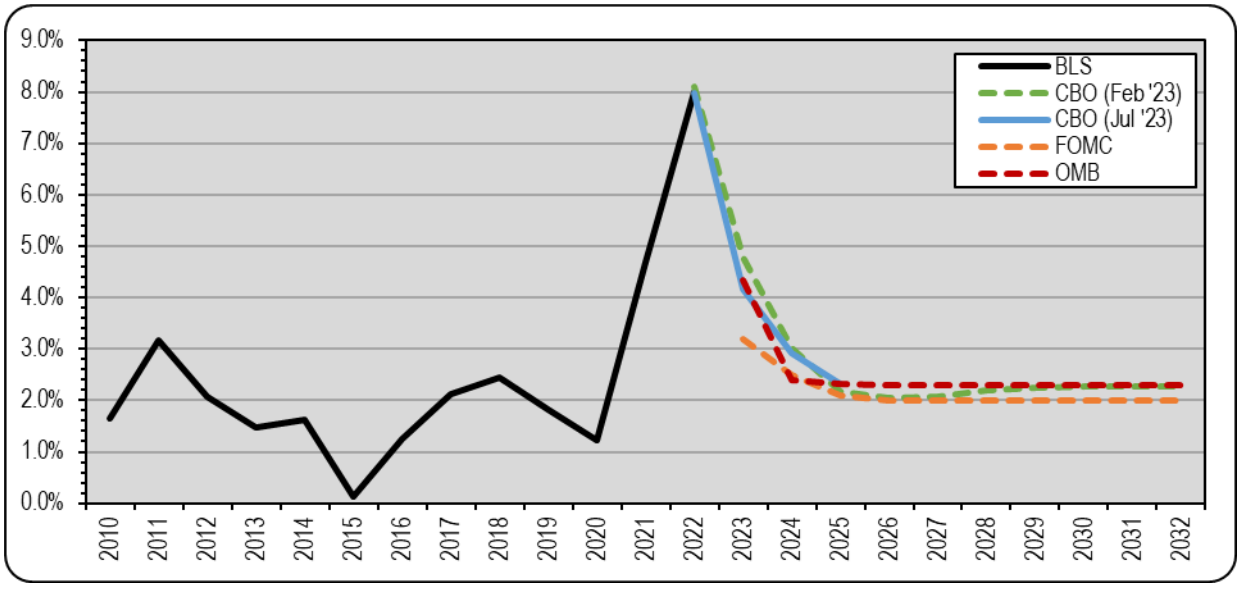
Figure 3-8
Historical Inflation (CPI-U)



Forecast

Figure 3-9 shows the national inflation forecasts by the CBO, FOMC, and OMB. In 2023, the sources expect U.S. inflation around 3.7% and continuously decrease to around 2.1% by 2025. FOMC measures inflation via the Personal Consumption Expenditure (PCE) index, which closely parallels the CPI-U measure. Inflation is thereafter expected to remain at, or close to, the official 2.0% FOMC PCE target rate (that is, monetary policy will work as expected).

Figure 3-9
Forecast Inflation (CPI-U)



3.3.7 Fuel Prices

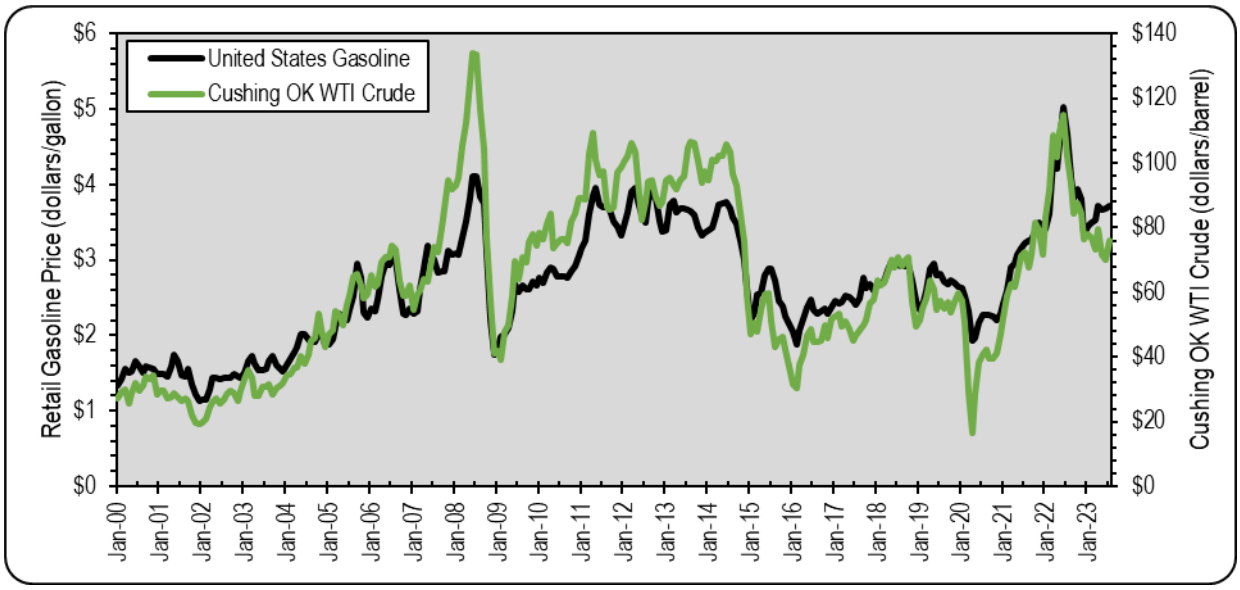
Fuel prices are another important variable related to traffic forecasting. Fuel price increases beyond inflation leads to increasing vehicle operating cost and generally less travel, including less travel on toll facilities. In the reverse, declining fuel prices results in generally more travel. Such divergences and behavioral responses are typically short-lived (within a year).

Historical

Figure 3-10 illustrates the monthly crude oil[8] and retail gasoline prices[9] from 2000 to mid-2023. The price data in Figure 3-10 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 $5.03 per gallon in June 2022. Monthly gasoline since declined to around $3.75. 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.

Figure 3-10
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 3-10 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.).

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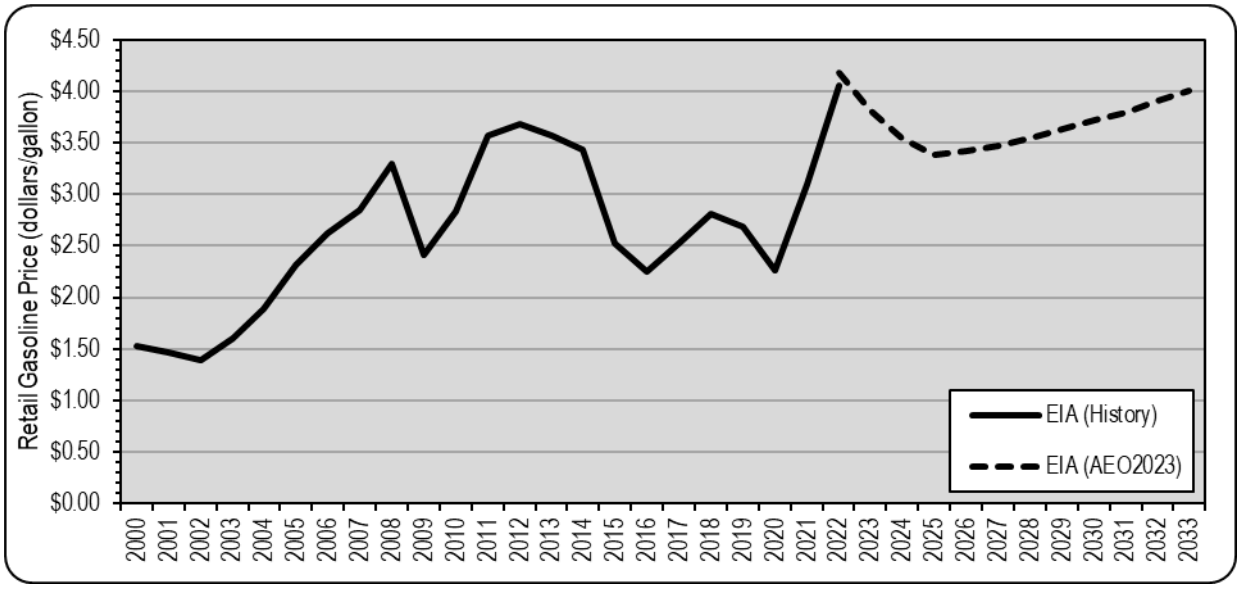
[8] Cushing OK WTI (West Texas Intermediate) spot price per barrel, free on-board delivery.
[9] Retail price per gallon of unleaded gasoline, all grades, all formulations.
[10] 2000 data are presented in 2000 dollars, 2001 data in 2001 dollars, etc.
[11] Central Atlantic includes DE, DC, MD, NJ, NY and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

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. In 2021, prices increased to $68.00 per barrel and in 2022 to $95.00; as of June 2023, prices are down to $76.00

Forecast

Figure 3-11 provides national gasoline price forecasts in current dollars. Retail gasoline prices, averaging $4.06 in 2022 increased notably since 2016; however, the EIA expects prices to steadily reduce through 2025 to $3.38 and thereafter increase about a dime annually.

Figure 3-11
Forecast Fuel Price (Current $)



3.4 Risks and Conclusion

COVID-19 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.

Because of the pandemic, some businesses, especially in certain sectors, experienced significant financial hardship and structurally reorganized (especially professional service and other historically office-collated entities). This will continue to impact employment trends, including geographic dispersion. Some impacts related to business activity and employment were mitigated by Federal stimulus programs. The COVID-19 recession and recovery 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.

Some supply chains and business structured continue to be impacted (such as professional, financial, and real estate) with other industries generally resuming to pre-COVID operations (such as leisure, hospitality, education, and retail). Pessimistic consumer confidence, which has not recovered at-pace with many other improved macroeconomic factors, such as unemployment

declines, coupled with stubborn inflation, are likely to affect spending patterns for a few more years. International trade has shifted due to demand changes, border restrictions, geopolitics (Russia/Ukraine, China, etc.) and accelerated reshoring and supply-chain redundancy trends.

In the long-term, COVID-related impacts and recovery shifts will be institutionalized. Some industries structurally change. For example, this may include some medical care switching to telehealth and in-person college attendance switching to e-learning permanently. 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. 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 continue, despite some recent "reversal" pressures; e-commerce will accelerate shifting passenger to delivery vehicles.

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 2033 are included in this chapter. Monthly forecasts for FY 2024 and FY 2025 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
Growth	The growth forecast produced by the econometric update (WT#12) and used in last year's annual forecast was used for this study. Based on recent in-lane trends, no adjustments were made to the growth forecast. Additionally, no ongoing COVID impacts are assumed in this forecast.
Construction	Traffic impacts on FSK from FSK deck replacement and Curtis/Bear Creek projects reduced significantly based on input from Dept. of Engineering. Duration of significant impacts from I-895 AET conversion compressed to 12 months.
Backlog Transactions	Assuming no further backlog transactions will be processed in FY24. Only 'backlog' that is assumed in this forecast is the outstanding NOTDs that remain unpaid post Customer Assistance Plan termination that have been sent to MVA/CCU.
NOTD Collection Rates	Collection rates reduced in FY24 based on recent trends in FY23 after Customer Assistance Plan termination. NOTD collection rates are tapered back to a long-term trend by FY26 that is around 5% lower than the prior forecast, due to reduced collection rates for MDTA and other similar facilities. Slight increase in collections at Citation/MVA/CCU assumed in conjunction with near-term NOTD collection rate reduction (since less people paying at NOTD level means more people will be eligible to pay at subsequent levels).
Transactions Sent to MVA	MVA details provided by Transcore assumed to include civil penalty revenue. Assumed collections for transactions already flagged and sent courtesy letters will begin collecting in Sept. 2023 at rates used in previous waterfall model. Transactions still to be mailed MVA letters are being sent at a pace of 33,000 letters per week to the mailhouse. To be conservative and account for delays in payment, assumed 17,500 letters sent per week in the forecast. Collection rates for civil penalties for MVA transactions were also reduced compared to previous waterfall assumptions to account for uncertainty in data and potential leniency in collections.
New Vehicle Classifications	New vehicle classification toll rates assumed to begin on July 1, 2024 (FY 2025).
Toll Changes	No future toll rate changes are assumed.
Forecasting Approach	All transactions and toll revenue as well as civil penalty revenue are forecasted in the month of collection (cash accounting).

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 for the Legacy system traffic growth forecasts as detailed in last year's forecast summarized in the report *Maryland Transportation Authority FY 2023 Traffic and Toll Revenue Forecast Update*. 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 traffic growth used in this current study is based on the growth from the econometric analysis with adjustments as necessary to account for the most recent traffic and economic trends related to inflation and gas prices, long-term pandemic-related commuting trend changes, as well as construction impacts summarized in the subsequent section. Passenger car and commercial vehicle transactions were

forecasted independently by facility using these growth rates and by benchmarking to actual FY 2023 trends.

Assumptions including those related to construction impacts, outstanding unpaid NOTD transactions incurred during the Customer Assistance 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 vehicle class (passenger cars and commercial vehicles), and by method of payment.

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 began in January 2023 and initial construction and material procurement will continue through the end of 2023. Major construction will be performed primarily during off-peak night-time closures which will begin in Winter 2023/2024. Preliminary completion is estimated for Fall 2025.

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 Winter of 2023/2024. 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 are 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 18 months. For this study, construction was assumed to begin to January 2024.

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 24 months, with a traffic impact duration of 12 months. For this study, this project was assumed to begin after the completion of the subgrade improvements east of Bear Creek.

4. **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 2025 and continue for three years.

5. **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 Winter of 2025/2026 with an estimated construction duration of 3 years. The construction impacts are anticipated to include concurrent single lane closures in both directions of I-895 for a duration of 12 months.

6. **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 winter of 2029. 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 3 years.

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 fall of 2024. The completion of construction through the MD 24 Interchange is scheduled for winter of 2027/2028. Coinciding with the completion of the northbound extension, direct connectors from I-695 eastbound and westbound to I-95 northbound will open as well. 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 2023 and forecasted collected transactions and toll revenue for FY 2024 through FY 2033 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 2024 transactions and revenue are forecasted to decrease slightly over FY 2023 due to reduced collections of backlogged transactions, as all backlogged transactions have been invoiced and the Customer Assistance plan has terminated. However, the transactions that remain unpaid after the plan termination have been sent to the central collections unit (CCU) or for motor vehicle registration hold/suspension (MVA), and it was assumed the share of transactions that will be paid from these outstanding transactions will occur in FY 2024. No further collection of these transactions is assumed in other years of the forecast, which causes the year-over-year decrease in FY 2025. The decline forecasted to occur in FY 2028 is 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**. After FY 2029, transactions and revenue are not assumed to be impacted by such large construction projects and reflect expected normal growth through the end of the forecast period in FY 2033.

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 2024 and FY 2025. **Table 4-4** provides the forecasted monthly transactions and **Table 4-5** provides the forecasted monthly toll revenue for the total Legacy system. Actual 2023 data is shown for July through September 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
2023 [2]	106.4	10.5	**116.9**	398.9	261.1	**660.0**
2024	104.9	10.1	**115.0**	390.5	252.6	**643.1**
2025	104.5	10.3	**114.9**	390.0	256.9	**646.8**
2026	106.3	10.4	**116.7**	397.8	260.1	**657.8**
2027	106.4	10.5	**116.9**	398.1	262.1	**660.2**
2028	105.0	10.5	**115.6**	393.0	263.7	**656.7**
2029	109.0	10.6	**119.6**	407.7	264.4	**672.1**
2030	109.7	10.6	**120.3**	410.6	264.9	**675.5**
2031	110.4	10.7	**121.1**	413.3	265.8	**679.1**
2032	111.2	10.7	**121.9**	416.1	267.0	**683.1**
2033	112.0	10.8	**122.8**	418.9	268.5	**687.4**

[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) [4]								Percent Growth
	JFK	Hatem	BHT	FMT	FSK	Bay	Nice	Total [2]	
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	4.5	26.0	43.4	12.2	14.8	3.4	**120.0**	68.0
2023	15.1	4.5	27.4	41.5	12.1	13.3	3.1	**116.9**	(2.6)
2024 [3]	14.8	4.6	27.6	41.1	11.5	12.3	3.0	**115.0**	(1.6)
2025	15.1	4.6	27.3	41.6	11.2	12.1	3.0	**114.9**	(0.1)
2026	15.3	4.6	26.5	43.1	11.6	12.6	3.1	**116.7**	1.6
2027	15.3	4.6	23.7	44.6	12.6	12.9	3.1	**116.9**	0.2
2028 [3]	15.4	4.6	17.7	47.1	14.6	12.9	3.1	**115.6**	(1.1)
2029	15.5	4.6	28.4	42.8	12.2	13.0	3.2	**119.6**	3.5
2030	15.6	4.6	29.7	42.8	11.4	13.0	3.2	**120.3**	0.6
2031	15.7	4.6	30.3	43.2	10.9	13.0	3.2	**121.1**	0.6
2032	15.7	4.7	30.6	43.5	11.0	13.1	3.2	**121.9**	0.7
2033	15.8	4.7	30.5	43.7	11.7	13.1	3.3	**122.8**	0.7
Fiscal Year [1]	Toll Revenue ($ Millions) [4]								Percent Growth
	JFK	Hatem	BHT	FMT	FSK	Bay	Nice	Total [2]	
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	197.0	18.3	95.7	225.6	55.9	61.9	24.7	**679.0**	75.3
2023	191.9	15.1	102.2	215.5	56.8	56.4	22.1	**660.0**	(2.8)
2024 [3]	187.0	15.6	103.4	212.0	53.7	50.8	20.6	**643.1**	(2.6)
2025	192.2	15.6	101.8	214.4	51.8	49.8	21.2	**646.8**	0.6
2026	194.4	15.8	99.4	221.1	53.5	52.0	21.6	**657.8**	1.7
2027	195.5	15.9	89.5	226.5	57.5	53.5	21.8	**660.2**	0.4
2028 [3]	196.6	15.9	67.9	235.3	65.4	53.6	21.9	**656.7**	(0.5)
2029	197.7	15.9	105.3	220.5	56.7	53.8	22.1	**672.1**	2.3
2030	198.7	16.0	110.7	221.1	52.8	54.0	22.2	**675.5**	0.5
2031	199.8	16.0	113.6	223.0	50.2	54.1	22.4	**679.1**	0.5
2032	200.8	16.1	114.6	224.3	50.5	54.3	22.6	**683.1**	0.6
2033	201.8	16.1	113.5	225.0	53.8	54.4	22.7	**687.4**	0.6

[1] Actual data presented for FY 2019 through FY 2023.

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

[3] Leap Year

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

Table 4-4
Monthly Collected Transactions by Method of Payment
FY 2024 and FY 2025

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 2024											
July	1.678	3.904	2.740	1.187	0.090	0.273	**9.872**	0.784	0.052	**0.836**	**10.708**
August	1.666	3.631	2.563	0.904	0.092	0.261	**9.116**	0.779	0.032	**0.811**	**9.927**
September	1.928	3.886	2.402	0.799	0.111	0.293	**9.419**	0.858	0.034	**0.892**	**10.310**
October	2.005	3.289	2.541	1.197	0.114	0.286	**9.431**	0.957	0.046	**1.003**	**10.434**
November	1.675	2.697	2.379	1.207	0.091	0.274	**8.323**	0.755	0.047	**0.803**	**9.126**
December	1.679	2.721	2.086	1.161	0.086	0.273	**8.006**	0.717	0.045	**0.762**	**8.768**
January	1.663	2.424	2.040	1.211	0.092	0.280	**7.710**	0.730	0.050	**0.780**	**8.490**
February	1.649	2.374	1.778	1.116	0.090	0.254	**7.260**	0.676	0.045	**0.721**	**7.981**
March	1.972	2.933	2.189	1.247	0.111	0.291	**8.743**	0.850	0.052	**0.902**	**9.645**
April	1.723	2.834	2.535	1.211	0.097	0.275	**8.675**	0.791	0.047	**0.839**	**9.513**
May	1.894	3.216	2.605	1.262	0.097	0.275	**9.349**	0.849	0.051	**0.900**	**10.250**
June	1.743	3.079	2.463	1.306	0.100	0.281	**8.973**	0.821	0.052	**0.873**	**9.846**
FY TOTAL	**21.273**	**36.989**	**28.321**	**13.808**	**1.171**	**3.316**	**104.877**	**9.568**	**0.553**	**10.121**	**114.998**
FY 2025											
July	1.712	3.907	2.844	1.025	0.091	0.272	**9.852**	0.799	0.045	**0.844**	**10.696**
August	1.700	3.633	2.660	1.065	0.093	0.260	**9.411**	0.793	0.049	**0.843**	**10.254**
September	1.967	3.888	2.493	1.090	0.112	0.293	**9.845**	0.874	0.050	**0.924**	**10.768**
October	2.045	3.291	2.637	1.077	0.116	0.286	**9.452**	0.975	0.047	**1.022**	**10.474**
November	1.709	2.699	2.469	1.025	0.092	0.274	**8.269**	0.769	0.047	**0.817**	**9.086**
December	1.713	2.723	2.165	0.989	0.087	0.273	**7.950**	0.731	0.045	**0.776**	**8.726**
January	1.696	2.426	2.117	0.933	0.093	0.280	**7.545**	0.744	0.045	**0.789**	**8.334**
February	1.682	2.376	1.846	0.885	0.091	0.253	**7.133**	0.689	0.043	**0.731**	**7.864**
March	2.012	2.935	2.272	0.902	0.112	0.291	**8.525**	0.866	0.044	**0.910**	**9.435**
April	1.758	2.836	2.631	0.921	0.098	0.275	**8.519**	0.806	0.042	**0.848**	**9.367**
May	1.932	3.219	2.704	0.976	0.098	0.275	**9.203**	0.865	0.046	**0.911**	**10.115**
June	1.779	3.082	2.556	1.047	0.101	0.281	**8.846**	0.837	0.047	**0.884**	**9.730**
FY TOTAL	**21.705**	**37.015**	**29.396**	**11.935**	**1.186**	**3.313**	**104.550**	**9.748**	**0.552**	**10.300**	**114.850**

[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 2024 and FY 2025

Month	Passenger Cars (2-Axle)							Commercial Vehicles (3+ Axle)			
	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	Total [1]
FY 2024											
July	$ 2.458	$ 12.737	$ 14.106	$ 8.267	$ -	$ -	**$ 37.567**	$ 18.995	$ 1.575	**$ 20.570**	**$ 58.138**
August	2.440	11.775	13.167	6.215	-	-	**33.596**	19.005	0.957	**19.962**	**53.558**
September	2.815	12.577	12.276	5.395	-	-	**33.063**	20.873	1.059	**21.931**	**54.994**
October	2.941	11.485	13.020	6.453	-	-	**33.899**	23.587	1.331	**24.918**	**58.817**
November	2.457	9.370	12.300	7.611	-	-	**31.739**	18.667	1.371	**20.038**	**51.777**
December	2.462	9.460	10.804	7.326	-	-	**30.052**	18.123	1.321	**19.444**	**49.496**
January	2.440	8.371	10.590	7.633	-	-	**29.034**	18.456	1.514	**19.970**	**49.004**
February	2.415	8.126	9.065	7.036	-	-	**26.642**	16.898	1.345	**18.242**	**44.885**
March	2.890	10.138	11.278	7.830	-	-	**32.137**	21.110	1.563	**22.672**	**54.809**
April	2.530	9.805	13.115	7.699	-	-	**33.149**	19.519	1.391	**20.911**	**54.060**
May	2.779	11.152	13.489	7.969	-	-	**35.389**	20.778	1.496	**22.275**	**57.664**
June	2.562	10.714	12.663	8.286	-	-	**34.225**	20.177	1.523	**21.699**	**55.925**
FY TOTAL	**$ 31.190**	**$ 125.710**	**$ 145.874**	**$ 87.720**	**$ -**	**$ -**	**$ 390.494**	**$ 236.188**	**$ 16.446**	**$ 252.633**	**$ 643.128**
FY 2025											
July	$ 2.508	$ 12.829	$ 14.647	$ 7.032	$ -	$ -	**$ 37.017**	$ 19.197	$ 1.419	**$ 20.616**	**$ 57.633**
August	2.490	11.860	13.672	7.280	-	-	**35.301**	19.207	1.589	**20.796**	**56.097**
September	2.873	12.668	12.747	7.370	-	-	**35.658**	21.095	1.622	**22.716**	**58.375**
October	3.001	11.569	13.520	7.218	-	-	**35.307**	23.838	1.544	**25.382**	**60.689**
November	2.507	9.439	12.772	6.838	-	-	**31.556**	18.865	1.551	**20.416**	**51.972**
December	2.513	9.529	11.218	6.608	-	-	**29.868**	18.316	1.520	**19.836**	**49.704**
January	2.490	8.432	10.996	6.194	-	-	**28.112**	18.652	1.543	**20.195**	**48.307**
February	2.464	8.185	9.413	5.889	-	-	**25.951**	17.078	1.453	**18.530**	**44.482**
March	2.949	10.212	11.711	5.948	-	-	**30.821**	21.334	1.476	**22.811**	**53.631**
April	2.582	9.876	13.619	6.177	-	-	**32.253**	19.727	1.395	**21.122**	**53.375**
May	2.836	11.233	14.007	6.487	-	-	**34.563**	20.999	1.509	**22.508**	**57.071**
June	2.614	10.792	13.149	7.004	-	-	**33.559**	20.391	1.542	**21.934**	**55.493**
FY TOTAL	**$ 31.827**	**$ 126.623**	**$ 151.471**	**$ 80.045**	**$ -**	**$ -**	**$ 389.966**	**$ 238.700**	**$ 18.163**	**$ 256.863**	**$ 646.829**

[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 the latest fiscal year, and adjusting base growth rates estimated in the most recent previous ICC forecast update, as necessary. Estimated trips and revenue reflects collected toll revenue by MDTA after assumed reductions due to leakage of unbillable and unpaid trips. The forecasts reflect the assumptions listed in **Section 4.1**, including those 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 2023 and the forecasted collected trips and revenue for FY 2024 through FY 2033, by ETC and video. Due to the historical changes in MDTA business rules and tapering of collection of video transactions incurred prior to termination of the Customer Assistance program, video transactions are forecasted to decrease in FY 2024 over FY 2023, but video revenue will increase. This is largely due to assumptions on the portion of MVA transactions collected in FY 2024 and the average toll associated with these specific transactions. ETC transactions and revenue are both forecasted to increase in FY 2024. Latest daily in-lane traffic trends show the recovery from the pandemic for commuters has leveled off in the most recent fiscal year, so no additional recovery beyond normal growth was assumed in the forecast.

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 2024 and FY 2025. **Table 4-7** presents the Intercounty Connector monthly forecasted trips and collected toll revenue for FY 2024 and FY 2025. Actual 2023 data is shown for July through September 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
2023 [2]	29.9	4.2	**34.1**	58.3	11.9	**70.2**
2024	30.4	3.7	**34.2**	59.0	12.7	**71.8**
2025	30.7	3.1	**33.9**	59.7	8.9	**68.6**
2026	31.3	3.4	**34.7**	60.9	9.5	**70.4**
2027	32.0	3.4	**35.4**	62.1	9.7	**71.8**
2028	32.6	3.5	**36.1**	63.4	9.8	**73.2**
2029	33.3	3.6	**36.8**	64.6	10.0	**74.6**
2030	33.9	3.6	**37.5**	65.9	10.2	**76.1**
2031	34.4	3.7	**38.1**	66.9	10.4	**77.3**
2032	35.0	3.7	**38.7**	67.9	10.5	**78.4**
2033	35.5	3.8	**39.3**	69.0	10.7	**79.7**

[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 2024								
July	2.549	0.078	0.337	**2.964**	$ 4.484	$ 0.546	$ 0.961	**$ 5.992**
August	2.340	0.074	0.264	**2.677**	4.024	0.466	0.733	**5.224**
September	2.846	0.087	0.231	**3.163**	5.072	0.638	0.660	**6.370**
October	2.625	0.091	0.326	**3.041**	4.684	0.680	0.923	**6.287**
November	2.302	0.072	0.317	**2.691**	4.028	0.539	1.167	**5.734**
December	2.279	0.071	0.302	**2.652**	4.027	0.546	1.118	**5.690**
January	2.259	0.068	0.328	**2.655**	3.958	0.522	1.202	**5.681**
February	2.038	0.059	0.302	**2.398**	3.650	0.465	1.129	**5.244**
March	2.479	0.074	0.336	**2.889**	4.396	0.569	1.228	**6.193**
April	2.444	0.079	0.309	**2.832**	4.388	0.595	1.145	**6.127**
May	2.796	0.084	0.334	**3.214**	4.972	0.633	1.228	**6.833**
June	2.563	0.079	0.340	**2.982**	4.552	0.597	1.226	**6.375**
FY TOTAL	**29.518**	**0.915**	**3.725**	**34.159**	**$ 52.235**	**$ 6.797**	**$ 12.719**	**$ 71.750**
FY 2025								
July	2.599	0.079	0.234	**2.913**	$ 4.581	$ 0.578	$ 0.638	**$ 5.798**
August	2.085	0.074	0.255	**2.414**	3.698	0.541	0.729	**4.967**
September	2.994	0.098	0.287	**3.379**	5.316	0.727	0.827	**6.871**
October	2.666	0.091	0.298	**3.055**	4.755	0.665	0.849	**6.270**
November	2.338	0.073	0.274	**2.685**	4.089	0.527	0.769	**5.385**
December	2.314	0.071	0.262	**2.648**	4.088	0.534	0.731	**5.353**
January	2.295	0.068	0.260	**2.622**	4.018	0.511	0.728	**5.256**
February	2.070	0.059	0.247	**2.376**	3.705	0.455	0.700	**4.860**
March	2.517	0.075	0.249	**2.842**	4.463	0.557	0.701	**5.722**
April	2.482	0.080	0.238	**2.800**	4.455	0.582	0.668	**5.704**
May	2.840	0.084	0.264	**3.188**	5.048	0.620	0.748	**6.415**
June	2.603	0.079	0.276	**2.958**	4.621	0.585	0.777	**5.983**
FY TOTAL	**29.803**	**0.932**	**3.142**	**33.877**	**$ 52.838**	**$ 6.882**	**$ 8.864**	**$ 68.583**

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

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 FY 2023 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 update the I-95 ETL forecast spreadsheet model, a series of counts were first obtained from the Maryland ITMS count monitoring site to produce a 2022 average weekday traffic profile. The profile was balanced to 2022 levels so to provide a "normal" traffic profile accounting for any new trends on the system after the COVID-19 pandemic. The balanced traffic profile and speed data from INRIX 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 and I-695 direct connectors 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.

4.4.2 Forecast Results

Table 4-8 provides the forecasted annual trips and toll revenue for the total of the existing section and planned extensions of the I-95 ETLs, including the I-695 direct connectors. Access changes to and from the ETLs are planned with the opening of the extensions

Table 4-8
I-95 ETL Total with Extensions Forecasted Collected Annual Trips and Toll Revenue

	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
Fiscal Year	E-ZPass	Video	Total	E-ZPass	Video	Total
2023 [2]	8.6	0.4	**9.0**	13.3	0.8	**14.1**
2024	8.9	0.4	**9.2**	13.6	0.8	**14.4**
2025 [3]	9.8	0.4	**10.2**	17.4	1.0	**18.5**
2026	10.7	0.4	**11.2**	21.4	1.3	**22.7**
2027	11.2	0.5	**11.6**	22.4	1.3	**23.7**
2028 [4]	13.5	0.6	**14.0**	28.7	1.7	**30.4**
2029	15.6	0.6	**16.3**	34.3	2.0	**36.3**
2030	16.2	0.7	**16.9**	35.6	2.1	**37.7**
2031	16.8	0.7	**17.5**	37.0	2.2	**39.2**
2032	17.4	0.7	**18.1**	38.4	2.2	**40.6**
2033	18.0	0.7	**18.8**	39.8	2.3	**42.1**

[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 and I-695 DCs 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 2024 and FY 2025. **Table 4-9** provides the monthly forecasted collected trips and toll revenue for the I-95 ETLs by passenger car and commercial vehicle. Actual 2023 data is shown for July through September for transactions and revenue. All other monthly data presented in this table is forecasted.

Table 4-9
I-95 ETL Forecasted Monthly Collected Trips and Toll Revenue

Month	Trips (Millions) [1]			Toll Revenue ($ Millions) [1]		
	E-ZPass	Video	Total	E-ZPass	Video	Total
FY 2024						
July	0.776	0.035	**0.811**	1.149	0.079	**1.228**
August	0.801	0.027	**0.828**	1.189	0.056	**1.245**
September	0.713	0.028	**0.741**	1.106	0.066	**1.172**
October	0.768	0.034	**0.802**	1.188	0.078	**1.267**
November	0.755	0.031	**0.786**	1.161	0.071	**1.232**
December	0.725	0.030	**0.754**	1.122	0.069	**1.191**
January	0.617	0.025	**0.641**	0.976	0.058	**1.034**
February	0.576	0.022	**0.598**	0.908	0.050	**0.958**
March	0.705	0.026	**0.732**	1.112	0.062	**1.173**
April	0.804	0.031	**0.835**	1.228	0.070	**1.298**
May	0.807	0.031	**0.838**	1.248	0.071	**1.320**
June	0.810	0.033	**0.844**	1.250	0.076	**1.326**
FY TOTAL	**8.857**	**0.352**	**9.209**	**$ 13.638**	**$ 0.806**	**$ 14.444**
FY 2025						
July	0.858	0.039	**0.897**	1.507	0.102	**1.609**
August	0.922	0.038	**0.960**	1.622	0.099	**1.722**
September	0.824	0.038	**0.862**	1.471	0.099	**1.570**
October	0.841	0.037	**0.879**	1.497	0.096	**1.594**
November	0.827	0.034	**0.861**	1.462	0.088	**1.549**
December	0.794	0.033	**0.827**	1.414	0.085	**1.499**
January	0.676	0.027	**0.703**	1.233	0.071	**1.305**
February	0.632	0.024	**0.655**	1.146	0.062	**1.208**
March	0.774	0.029	**0.802**	1.404	0.076	**1.480**
April	0.881	0.034	**0.914**	1.544	0.087	**1.631**
May	0.884	0.034	**0.918**	1.573	0.088	**1.661**
June	0.888	0.036	**0.924**	1.574	0.094	**1.668**
FY TOTAL	**9.800**	**0.403**	**10.203**	**$ 17.448**	**$ 1.048**	**$ 18.496**

[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 Vehicle Fees and Discounts
    a. Post-Usage Discount
    b. Supplemental Rebate Plan
    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. Note 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 Mount and Flex transponders are $13.50 and $16.50, respectively. The Standard is the more typical windshield mounted transponder, the Exterior is mounted to a passenger car's front license plate, and the Flex is for those traveling on Express Lanes and allows vehicles to indicate if they have the number of people in their vehicle to qualify for HOV discounts using the switch to display "HOV On".

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. Monthly fees are still assessed on Maryland E-ZPass® accounts for out-of-state customers but were temporarily paused in FY 2022 as part of customer focused business rule changes. These fees were resumed in FY 2023 on August 10th, 2022.

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 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 2023 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:

- Civil penalties were reduced from $50 to $25 in FY 2021 for all transactions with civil penalties and will remain at $25 for the duration of the forecast.
- Civil penalty collections in FY 2023 were impacted due to the MDTA customer assistance program which was initiated in February 2022 and terminated December 14, 2022. Civil penalty collections are assumed to be returned to normal procedure in FY 2024.

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 4-10 provides the historical and forecasted other revenue for the Legacy facilities, ICC, and I-95 ETLs. Historical data is shown for FY 2019 through FY 2023. Due to the business rule changes taken by MDTA, other revenue increased by 43 percent from FY 2021 to FY 2022, and 25 percent from FY 2022 to FY 2023. This is due to an increase in processing of the backlogged video transactions, leading to an increase in civil penalty collections in FY 2022 and FY 2023, particularly after to the termination of the customer assistance program. Other revenue is forecasted to increase again significantly in FY 2024 due to the outstanding unpaid video transactions that have been sent to MVA/CCU. It is assumed that a large amount of civil penalty revenue will be collected from these outstanding transactions, before returning to a more normal trend in FY 2025 and FY 2026.

Table 4-11 provides the FY 2024 and FY 2025 monthly other revenue forecast for the combined Legacy facilities, ICC, and I-95 ETLs.

Table 4-10
Other Revenue by Facility

Fiscal Year [1]	Legacy Facilities								Intercounty Connector & I-95			Total Other Revenue [2]
	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	Post-Usage Discount	High Frequency Discount	Over-size Permit Fee	Trans-ponder Sales	Monthly Account Fees	Civil Penalties	
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	11.41	0.33	(0.32)	1.76	18.03	(10.87)	(1.02)	1.19	0.04	(0.04)	6.17	**26.68**
2023	16.90	0.29	2.36	1.86	14.42	(8.54)	(0.97)	1.28	0.03	0.26	5.47	**33.36**
2024	15.86	0.29	2.14	1.86	57.39	(8.58)	(0.98)	1.29	0.03	0.26	11.89	**81.45**
2025	15.94	0.29	2.15	1.87	29.25	(8.63)	(0.98)	1.30	0.03	0.27	6.65	**48.14**
2026	16.02	0.29	2.16	1.87	27.97	(8.67)	(0.98)	1.30	0.03	0.27	6.43	**46.69**
2027	16.10	0.29	2.17	1.88	28.19	(8.71)	(0.99)	1.31	0.03	0.27	6.56	**47.10**
2028	16.18	0.29	2.18	1.88	28.41	(8.76)	(0.99)	1.32	0.03	0.27	6.69	**47.50**
2029	16.26	0.29	2.19	1.89	28.63	(8.80)	(1.00)	1.32	0.03	0.27	6.82	**47.91**
2030	16.34	0.29	2.20	1.89	28.85	(8.85)	(1.00)	1.33	0.03	0.27	6.93	**48.29**
2031	16.42	0.29	2.21	1.90	29.06	(8.89)	(1.01)	1.34	0.03	0.27	7.03	**48.67**
2032	16.50	0.29	2.23	1.90	29.28	(8.93)	(1.01)	1.34	0.03	0.28	7.14	**49.04**
2033	16.59	0.29	2.24	1.91	29.49	(8.98)	(1.02)	1.35	0.03	0.28	7.25	**49.42**

Source: Historical data from MDTA

(1) FY 2019 - 2023 represents actual data.

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

Table 4-11
Forecasted Monthly Other Revenue

Month	Total Other Revenue
FY 2024	
July	4.044
August	4.446
September	5.615
October	8.437
November	7.285
December	7.027
January	6.683
February	6.283
March	7.679
April	7.665
May	8.395
June	7.895
FY TOTAL	**$ 81.454**
FY 2025	
July	4.068
August	3.764
September	4.017
October	3.812
November	3.959
December	4.151
January	4.003
February	4.043
March	4.202
April	4.196
May	4.041
June	3.882
FY TOTAL	**$ 48.138**

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 2023 actual and the FY 2024 to FY 2033 forecast.

Table 5-1
Total System Collected Transactions/Trips

Fiscal Year	Transactions (millions)				
	Legacy	ICC	I-95 ETL	Total [1]	Percent Change
2023 [2]	116.9	34.1	9.0	**160.0**	-
2024	115.0	34.2	9.2	**158.4**	(1.0)
2025	114.9	33.9	10.2	**158.9**	0.4
2026	116.7	34.7	11.2	**162.6**	2.3
2027	116.9	35.4	11.6	**163.9**	0.8
2028	115.6	36.1	14.0	**165.7**	1.1
2029	119.6	36.8	16.3	**172.7**	4.2
2030	120.3	37.5	16.9	**174.7**	1.2
2031	121.1	38.1	17.5	**176.7**	1.1
2032	121.9	38.7	18.1	**178.7**	1.2
2033	122.8	39.3	18.8	**180.8**	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 2023 actual and the FY 2024 to FY 2033 forecast.

Figure 5-1 provides a graphical representation of the share of transactions/trips by facility for the first year and last year of the 10-year forecast, FY 2024 and 2033. In FY 2024, the Legacy system is forecasted to account for 73 percent of total transactions and trips, and the I-95 ETLs are forecasted to account for the smallest share at six percent. By FY 2033, due to comparatively higher growth rates on the ICC and I-95 ETLs, and the I-95 ETL extension, the Legacy system is forecasted to account for 68 percent of total transactions. ICC trips are forecasted to increase slightly from 21 to 22 percent, and the I-95 ETL trips are forecasted to increase to 10 percent by FY 2033.

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
2023 [3]	660.0	70.2	14.1	33.4	**777.6**	-
2024	643.1	71.8	14.4	81.5	**810.8**	4.3
2025	646.8	68.6	18.5	48.1	**782.0**	(3.5)
2026	657.8	70.4	22.7	46.7	**797.6**	2.0
2027	660.2	71.8	23.7	47.1	**802.7**	0.6
2028	656.7	73.2	30.4	47.5	**807.8**	0.6
2029	672.1	74.6	36.3	47.9	**830.9**	2.9
2030	675.5	76.1	37.7	48.3	**837.5**	0.8
2031	679.1	77.3	39.2	48.7	**844.2**	0.8
2032	683.1	78.4	40.6	49.0	**851.2**	0.8
2033	687.4	79.7	42.1	49.4	**858.6**	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 2024 and FY 2033

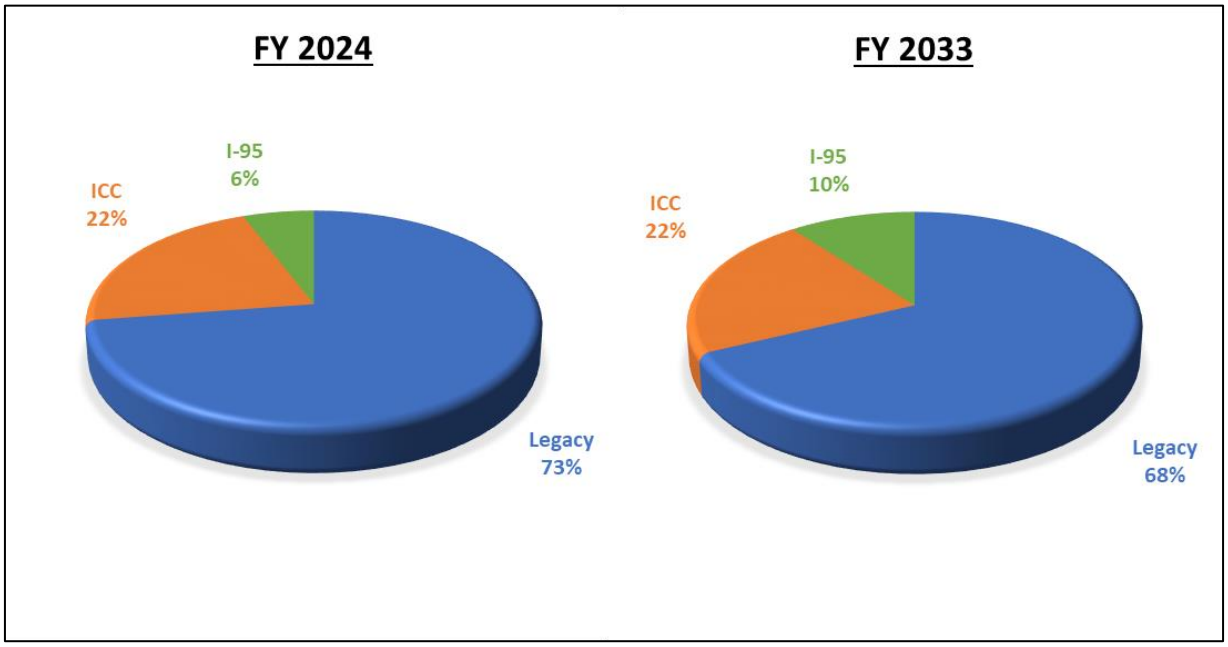


Figure 5-2 provides the same graphical representation for collected total revenue, separated by facility toll revenue and other revenue. Due to the higher share of transactions, the Legacy system also provides the highest share of total revenue and is forecasted to stay at 80 percent in FY 2024 and FY 2033. The ICC and I-95 ETLs will increase slightly from FY 2024 to FY 2033, while other revenue is forecasted to decrease in share of total revenue from 10 percent in FY 2024 to six percent in FY 2033 due to the increase in civil penalty revenue from outstanding NOTD transactions. Therefore, it should be taken into account that FY 2024 other revenue will be higher than a typical year.

Figure 5-2
Share of Collected Total Revenue, FY 2024 and FY 2033

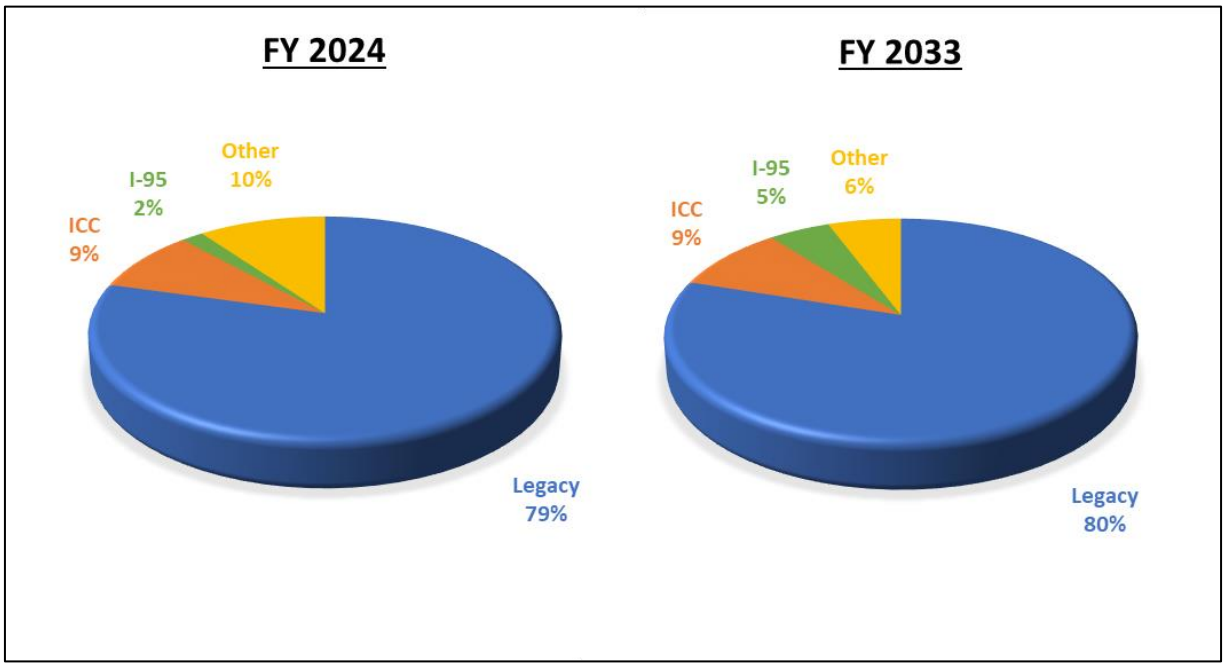


Table 5-3 summarizes the FY 2024 and FY 2025 monthly forecasted transactions, toll revenue, and other revenue for the combined Legacy system, ICC, and I-95 ETL's.

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 2023				
July	14.482	65.358	4.044	**69.402**
August	13.433	60.027	4.446	**64.473**
September	14.215	62.537	5.615	**68.152**
October	14.277	66.371	8.437	**74.808**
November	12.603	58.743	7.285	**66.028**
December	12.174	56.377	7.027	**63.404**
January	11.786	55.719	6.683	**62.402**
February	10.977	51.086	6.283	**57.370**
March	13.265	62.176	7.679	**69.855**
April	13.180	61.485	7.665	**69.150**
May	14.302	65.817	8.395	**74.212**
June	13.671	63.626	7.895	**71.521**
FY TOTAL	**158.366**	**$ 729.322**	**$ 81.454**	**$ 810.776**
FY 2024				
July	14.506	65.040	4.068	**69.108**
August	13.628	62.786	3.764	**66.550**
September	15.009	66.815	4.017	**70.832**
October	14.408	68.553	3.812	**72.365**
November	12.631	58.907	3.959	**62.866**
December	12.200	56.556	4.151	**60.707**
January	11.660	54.868	4.003	**58.871**
February	10.895	50.550	4.043	**54.593**
March	13.079	60.833	4.202	**65.035**
April	13.081	60.711	4.196	**64.906**
May	14.221	65.147	4.041	**69.188**
June	13.613	63.144	3.882	**67.026**
FY TOTAL	**158.930**	**$ 733.908**	**$ 48.138**	**$ 782.046**

[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 the previous forecasts from the November 2022 annual update in the report "Maryland Transportation Authority FY 2023 Traffic and Toll Revenue Forecast Update."

Table 6-1 provides the forecast comparison for the Legacy system, with actual revenue shown for FY 2022 and FY 2023 in the current forecast. Passenger car revenue is forecasted to be higher than the previous forecast in all years due to increased E-ZPass transactions and updated construction impacts. In the current forecast construction schedules and traffic impacts were updated, as detailed in **Section 4.2.2,** with certain start dates and project durations being affected. Commercial vehicles have performed well during the pandemic and have shown growth even over pre-pandemic levels. In the current forecast, the overperformance from FY 2023 of 7.6 percent is expected to increase to around 10 percent throughout the forecast.

Table 6-1
Legacy System Toll Revenue Comparison

Fiscal Year	Passenger Cars			Commercial Vehicles			Total Vehicles		
	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]
2022	$ 413.6	-	$ 413.6	$ 265.4	-	$ 265.4	$ 679.0	-	$ 679.0
2023	371.8	7.3%	398.9	242.5	7.6%	261.1	614.3	7.4%	660.0
2024	369.5	5.7%	390.5	234.1	7.9%	252.6	603.6	6.6%	643.1
2025	372.3	4.7%	390.0	233.6	10.0%	256.9	605.9	6.8%	646.8
2026	367.1	8.3%	397.8	234.9	10.7%	260.1	602.1	9.3%	657.8
2027	369.8	7.6%	398.1	236.2	11.0%	262.1	606.0	8.9%	660.2
2028	379.2	3.6%	393.0	237.8	10.9%	263.7	617.0	6.4%	656.7
2029	388.0	5.1%	407.7	239.6	10.3%	264.4	627.6	7.1%	672.1
2030	388.4	5.7%	410.6	240.8	10.0%	264.9	629.2	7.4%	675.5
2031	391.1	5.7%	413.3	241.9	9.9%	265.8	633.0	7.3%	679.1
2032	396.0	5.1%	416.1	243.0	9.9%	267.0	639.0	6.9%	683.1
2033	-	-	418.9	-	-	268.5	-	-	687.4

[1] Actual revenue shown for 2022 and 2023.

Table 6-2 provides the forecast comparison for the Intercounty Connector. The current forecast is higher than the November 2022 forecast by 9.4 percent in FY 2024, tapering down to -3.2 percent by FY 2026. This reduction is due to revised forecast assumptions that some portion of the impacts of the pandemic on commuting and travel patterns will persist throughout the forecast period. Further recovery beyond normal growth on trips on the ICC and I-95 ETLs was not assumed in the current forecast. Additionally, the current forecast has been benchmarked to latest trends on the ICC including the average toll, which more accurately adjusts the vehicle class distribution and trip length in the transactions on the facility compared to last year's forecast.

Table 6-2
Intercounty Connector Comparison

Fiscal Year	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]
2022	$ 84.9	0.0%	$ 84.9
2023	63.5	10.4%	70.2
2024	65.6	9.4%	71.8
2025	68.2	0.6%	68.6
2026	72.7	-3.2%	70.4
2027	74.2	-3.2%	71.8
2028	75.6	-3.2%	73.2
2029	77.1	-3.2%	74.6
2030	78.7	-3.3%	76.1
2031	79.9	-3.3%	77.3
2032	81.1	-3.3%	78.4
2033	-	-	79.7

[1] Actual revenue shown for 2022 and 2023.

Table 6-3 provides the forecast comparison for the I-95 ETLs. In the current forecast, near-term projections were revised to the latest FY 2023 trends. Baseline growth from the November 2022 forecast was used, but all COVID-19 recovery assumptions were removed, similar to the ICC. In FY 2028, the opening of the final piece of the northbound extension and I-695 direct connector ramps are assumed to open mid-fiscal year. The trips produced from this new portion were increased based on updates to the traffic profile using calendar year 2022 traffic counts provided by MDTA.

Table 6-3
I-95 ETLs Comparison

Fiscal Year	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]
2022	$ 14.1	0.0%	$ 14.1
2023	16.1	-12.7%	14.1
2024	17.2	-16.0%	14.4
2025	19.4	-4.7%	18.5
2026	21.5	5.3%	22.7
2027	22.8	4.1%	23.7
2028	27.2	11.8%	30.4
2029	32.1	13.2%	36.3
2030	33.9	11.2%	37.7
2031	35.7	9.7%	39.2
2032	37.7	7.9%	40.6
2033	-	-	42.1

[1] Actual revenue shown for 2022 and 2023.

Table 6-4 provides the forecast comparison for other revenue. Actual FY 2023 other revenue came in much higher than forecast, due to overperformance in civil penalty collections. The previous forecast assumed no civil penalties would be collected until after the termination of customer assistance plan, but some customers continued to pay outstanding civil penalties in the first half of the fiscal year. FY 2024 other revenue is forecasted to be nearly 76 percent higher than the previous forecast due to the assumptions for MVA/CCU collections. In the previous forecast, it was assumed that processing of the backlog transactions would still be ongoing through this fiscal year but that has already been completed. All the transactions that remain unpaid after the termination of the customer assistance plan have been flagged for motor vehicle registration suspension and sent to the CCU. It was assumed in the current forecast that many of these transactions would be paid in FY 2024 as normal enforcement resumes. For all remaining years of the forecast, the current forecast is lower in the range of 5 to 10 percent based on conservativeness for civil penalty collections until normal trends are established on the system under the AET condition.

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

Table 6-4
Other Revenue Comparison[1]

Fiscal Year	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [2]
2022	$ 26.7	0.0%	$ 26.7
2023	22.6	47.7%	33.4
2024	46.4	75.5%	81.5
2025	50.6	-4.8%	48.1
2026	50.0	-6.6%	46.7
2027	50.6	-6.9%	47.1
2028	52.5	-9.4%	47.5
2029	53.1	-9.7%	47.9
2030	53.4	-9.5%	48.3
2031	53.8	-9.5%	48.7
2032	54.2	-9.5%	49.0
2033	-	-	49.4

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

[2] Actual revenue shown for 2022 and 2023.

Table 6-5
Total System Revenue Comparison

Fiscal Year	Total System		
	Nov. 2022	% Diff - Current vs. Nov. 2022	Current [1]
2022	$ 804.7	0.0%	$ 804.7
2023	716.6	8.5%	777.6
2024	732.8	10.6%	810.8
2025	744.1	5.1%	782.0
2026	746.3	6.9%	797.6
2027	753.5	6.5%	802.7
2028	772.3	4.6%	807.8
2029	789.9	5.2%	830.9
2030	795.1	5.3%	837.5
2031	802.3	5.2%	844.2
2032	812.0	4.8%	851.2
2033	-	-	858.6

[1] Actual revenue shown for 2022 and 2023.

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.

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