



101 East River Drive, Suite 1A  
East Hartford, Connecticut 06108  
tel: 860 529-7615

March 22, 2024

Mr. Richard Dreher  
Chief Financial Officer  
Pennsylvania Turnpike Commission  
700 South Eisenhower Boulevard  
Middletown, PA 17057

Subject: Pennsylvania Turnpike Commission 2024 Traffic and Toll Revenue Bring Down Letter

Dear Mr. Dreher:

The Pennsylvania Turnpike Commission (PTC or Commission) asked CDM Smith to prepare this *2024 Traffic and Toll Revenue Bring Down Letter (2024 Bring Down Letter)* to be used in support of the Commission's financial planning, ongoing capital improvement program, and other funding requirements. This letter provides an update to the *2023 Traffic and Revenue Forecast Study (2023 IG Study)* dated May 2023.

The 2023 IG Study included actual data through March 2023 and presented traffic and gross toll revenue forecasts from fiscal year (FY) 2022-23 through FY 2052-53. A fiscal year runs from June 1 through May 31. An additional 10 months of actual data (through January 2024) were available for this 2024 Bring Down Letter. The forecast period for this study is one additional year into the future, now extending through FY 2053-54.

This report will provide a summary of differences between the current traffic and revenue forecast and the one provided in the 2023 IG Study.

The updated forecasts reflect the following changes from the 2023 IG Study:

- E-ZPass + v-toll market share estimates over the forecast period were reviewed and updated as needed.
- Actual traffic and toll revenue data were updated to include an additional 10 months of data, from April 2023 through January 2024.
- Additional adjustments to account for continuing recovery of passenger car (PC) transactions from the COVID-19 pandemic have been removed from the forecast.

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- A review of scheduled major roadway improvements was conducted to determine if there have been any changes since completion of the 2023 IG Study. Six new projects have been added or split off from existing projects, and the timing of others has been adjusted. This will be discussed in the Committed Roadway Improvements section of this report.
- The underlying econometric model that was developed as part of the 2023 IG Study was maintained. However, model inputs were adjusted to reflect the revised socioeconomic forecasts.
- The modest downward adjustment to transactions and gross toll revenue to account for a 50-percent probability of a recession beginning in late 2023 has been removed due to economic forecasters' decreasing confidence of a recession occurring.
- The forecast for discounts and adjustments was updated. The discounts given in the 10 months since the 2023 IG Study have been slightly lower than expected, resulting in a positive impact on net revenue.
- Based on recent experience and trends, the percentage of Toll By Plate (TBP) Bad Debt Expense has been revised upwards.

These differences are described in more detail in the sections that follow below.

The intent of this 2024 Bring Down Letter is to review and revise, if warranted, the forecasts developed as part of the 2023 IG Study. Any adjustments would be made based on the 10 months of new actual traffic and toll revenue experience since the 2023 IG Study was completed, as well as revised assumptions summarized in the bullet points above.

## Historical Toll Rate Increases and Current Toll Rates

**Table 1** provides a summary of historical toll rate increases on the Turnpike System from 1987 to the most recent increase implemented on January 7, 2024. Rate increases are presented as a percent increase over the prior toll rate for cash/video and E-ZPass. Note that toll rate increases are generally applied systemwide, although occasional exemptions occur, as indicated in Table 1.



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**Table 1**  
**Historical Toll Rate Increases**  
**Pennsylvania Turnpike**

Date	Percent Increase		Comment
	Cash/Video	E-ZPass	
1/2/1987	40.0	NA	E-ZPass was not yet implemented on the Turnpike
6/1/1991	32.0	NA	E-ZPass was not yet implemented on the Turnpike
8/1/2004	42.5	42.5	
1/4/2009	25.0	25.0	No increase on Findlay Connector or MFE between Uniontown and Brownsville
1/3/2010	3.0	3.0	No increase on Findlay Connector
1/2/2011	10.0	3.0	No increase on Findlay Connector
1/1/2012	10.0	0.0	No increase on Findlay Connector
1/6/2013	10.0	2.0	
1/5/2014	12.0	2.0	No increase on Findlay Connector
1/4/2015	5.0	5.0	No increase on Findlay Connector
1/3/2016	6.0	6.0	No increase on Findlay Connector; DRB converted from ticket system to barrier system and rate changes implemented
1/8/2017	6.0	6.0	No increase on Findlay Connector or DRB
1/7/2018	6.0	6.0	No increase on Findlay Connector, DRB, or the Northeast Extension barrier facilities
4/29/2018	6.0	6.0	Northeast Extension barrier facilities only (1)
6/3/2018	6.0	6.0	Findlay Connector only (1)
1/6/2019	6.0	6.0	
10/27/2019	6.0	6.0	BVE, AKH, and Gateway only; additional 45% surcharge over cash rate added to video rate at these locations
1/5/2020	6.0	6.0	No increase on BVE, AKH, or Gateway
1/3/2021	6.0	6.0	Additional 45% surcharge over cash rate added to video rate for Ticket System and MFE
1/2/2022	5.0	5.0	No increase on Southern Beltway
1/8/2023	5.0	5.0	
1/7/2024	5.0	5.0	

Note: Beginning in 2016, all cash toll rate increases also reflect video toll rate increases.

(1) Toll rate increase coincided with vehicle classification changes from a weight-based to an axle-based system.



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Periodic toll rate increases were implemented on the Turnpike System in 1987, 1991, and 2004. Beginning in 2009, annual toll increases have been implemented. During the 2000s decade, E-ZPass was phased into the Turnpike System. Until 2011, cash and E-ZPass toll rates always increased by the same percent. The toll rate schedule implemented on January 2, 2011 created a differential between cash and E-ZPass, as E-ZPass rates were increased by 3.0 percent and cash toll were increased by 10.0 percent. Rate increases differed between cash and E-ZPass in 2012, 2013, and 2014 further increasing the differential between cash and E-ZPass toll rates. After 2014, rate increases have been applied equally to both cash/video and E-ZPass.

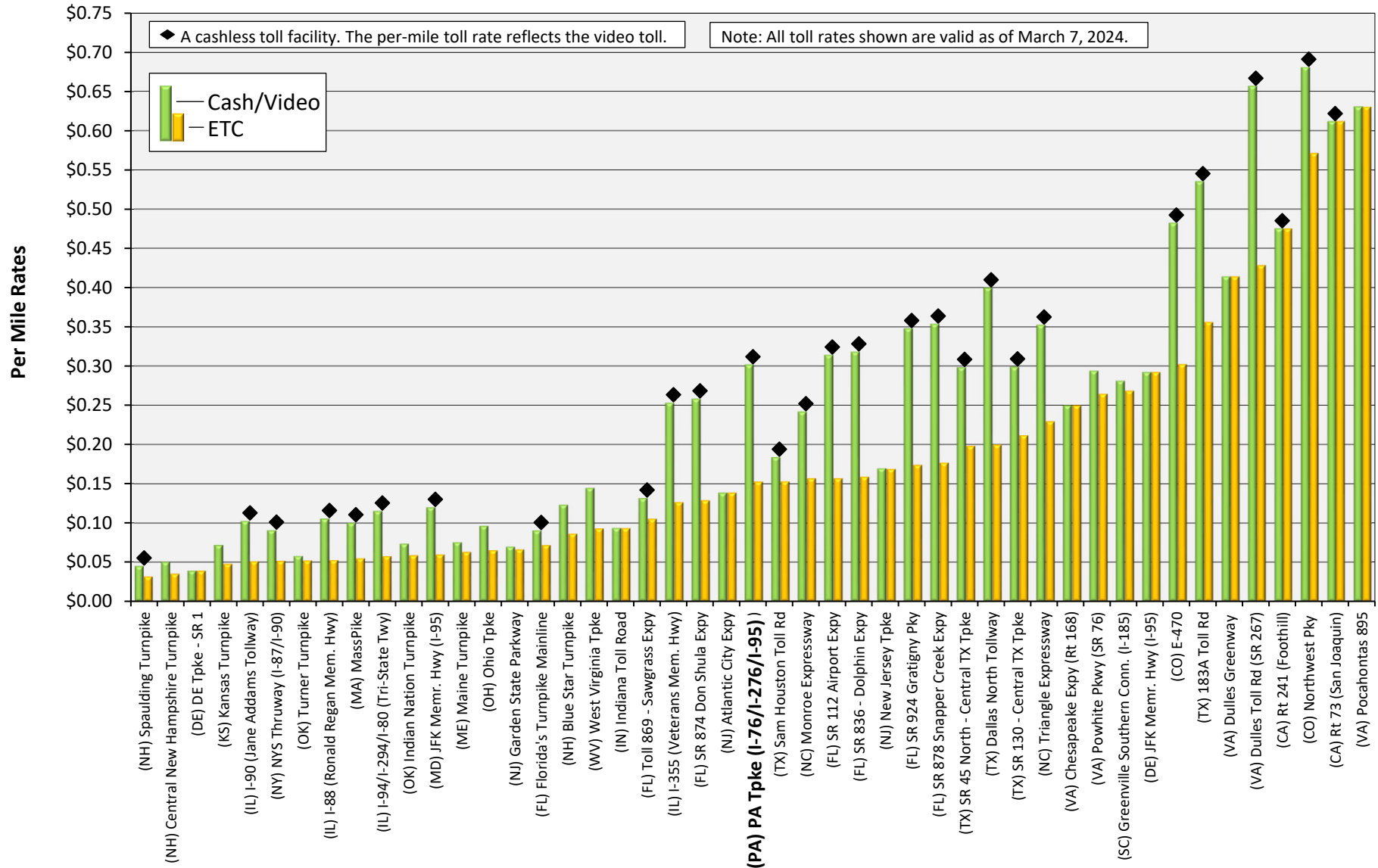
In 2015 toll rates increased by 5.0 percent. Both cash/video and E-ZPass toll rates increased by 6.0 percent annually from 2016 to 2021 and by 5.0 percent from 2022 to 2024. As of June 2020, the entire Pennsylvania Turnpike System is an all-electronic tolling (AET) system; cash is no longer accepted, with all payments being conducted via E-ZPass or video tolling.

PTC policy has also been to implement a video toll surcharge upon conversion to AET; this has generally amounted to an additional 45-percent increase, making video rates about double E-ZPass rates. This 45-percent video surcharge was implemented on the last two components of the Pennsylvania Turnpike System that had previously lacked it, the Ticket System and Mon/Fayette Expressway, in conjunction with the system-wide toll increase that was implemented on January 3, 2021. It is assumed that annual toll rate increases will occur throughout the forecast period, as described in the section Actual and Assumed Toll Rate Increases and shown in Table 8.

**Figures 1 and 2** show the 2024 per-mile toll rates for a through-trip on 47 U.S. toll facilities, for PCs and 5-axle commercial vehicles (CVs), respectively. Per-mile rates are shown for both cash/video and electronic toll collection (ETC) transactions in each figure, although the vast majority of both PC and CV trips are made using the more cost-effective E-ZPass payment method. If a facility uses AET, i.e., it does not accept cash payments, the video toll rate is shown as the equivalent of a cash toll rate. All AET facilities are marked with a diamond in Figures 1 and 2.

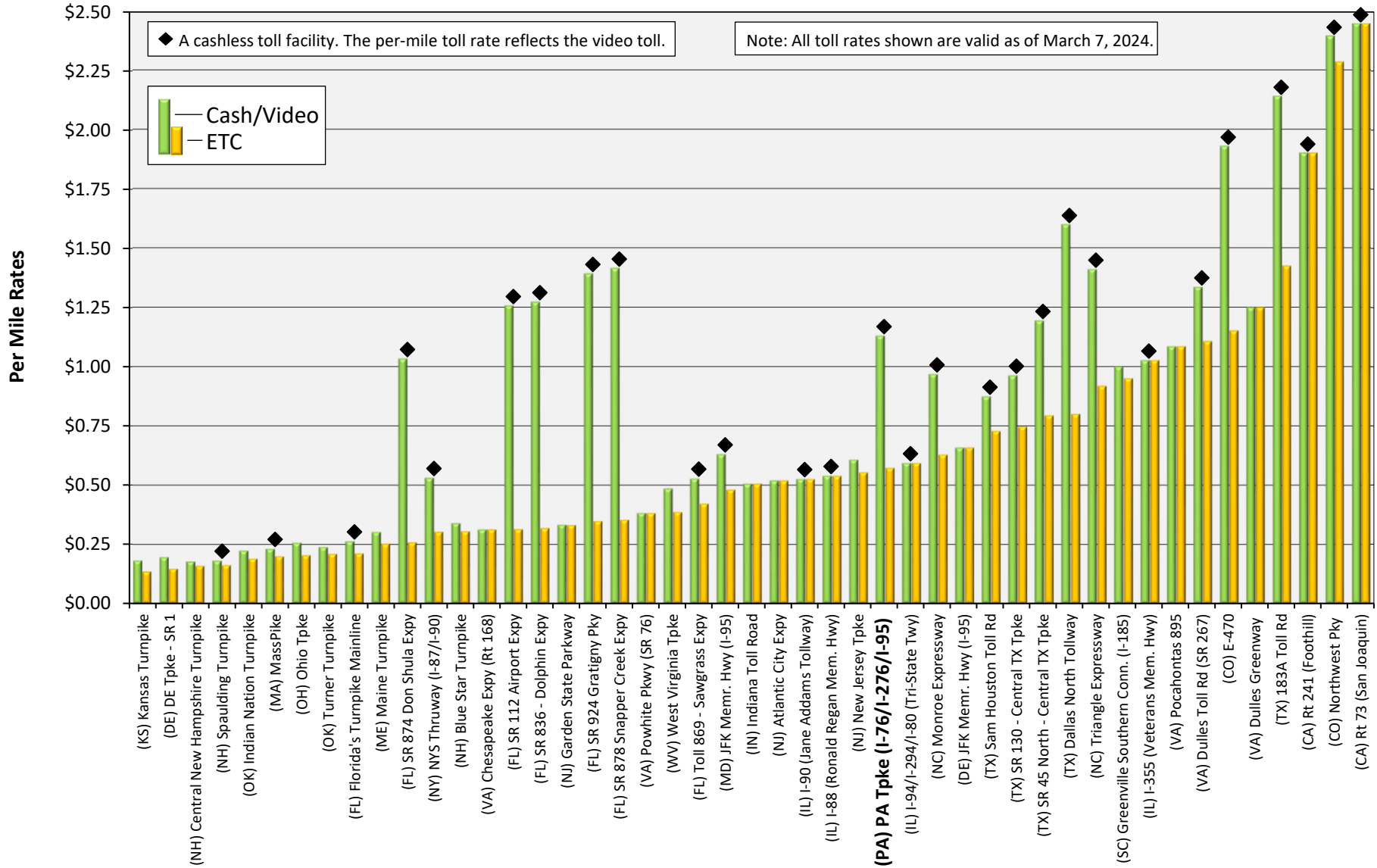
The per-mile through-trip toll rate is shown for the Pennsylvania Turnpike Mainline, which represents a trip on I-76/I-276/I-95 between Ohio and New Jersey. Figure 1 shows that despite 16 consecutive annual toll increases beginning in 2009, the Pennsylvania Turnpike Mainline PC per-mile toll rates of 15 cents per mile for E-ZPass customers and 30 cents per mile for video customers are still reasonably priced compared to other U.S. toll facilities. This ranks exactly in the middle of the 47 surveyed facilities.

Through-trip toll rates on the Pennsylvania Turnpike Mainline for 5-axle CVs (represented by weight class 6) are 57 cents per mile for E-ZPass and \$1.13 per mile for video transactions, which puts the Mainline's ETC per-mile rates as the 19<sup>th</sup> most expensive facility of the 47 that are tracked.



**COMPARISON OF 2024 PASSENGER CAR PER-MILE THROUGH TRIP TOLL RATES  
(DATA SORTED BY ETC TOLL RATES)**





**COMPARISON OF 2024 FIVE-AXLE VEHICLE PER-MILE THROUGH TRIP TOLL RATES  
(DATA SORTED BY ETC TOLL RATES)**





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## **Annual Transaction and Gross Toll Revenue Trends**

**Table 2** provides a summary of annual systemwide transactions and gross toll revenue trends from FY 1994-95 through FY 2022-23. The Pennsylvania Turnpike System is a large, mature system that has demonstrated long-term growth in transactions and toll revenue. Between FY 1994-95 and FY 2007-08 there was only one toll rate increase (in 2004) and Turnpike transactions and gross toll revenue grew by an average annual rate of 3.0 percent and 5.5 percent, respectively. Conversely, in the 11 years from FY 2007-08 through FY 2018-19, which was the last fiscal year to be completed before the onset of the COVID-19 pandemic, there were toll rate increases every year. During this period Turnpike transactions grew more slowly, by 1.1 percent annually, but due to the annual toll rate increases, Turnpike revenue grew more quickly, by 7.6 percent annually. In the four fiscal years that have been completed since the start of the pandemic, from the close of FY 2018-19 to the close of FY 2022-23, total transactions fell by a total of 3.3 percent compared to FY 2018-19, an average decline of 0.8 percent per year. However, due to toll rate increases, total revenue was able to grow over the same period by a total of 24.4 percent, or 5.6 percent per year.



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**Table 2**  
**Annual Systemwide Traffic and Gross Toll Revenue Trends**  
**Pennsylvania Turnpike System**  
 (in thousands)

Fiscal Year (1)	Transactions						Gross Toll Revenue					
	Percent Change over		Percent Change over		Percent Change over		Percent Change over		Percent Change over		Percent Change over	
	Cars	Prior Year	Trucks	Prior Year	Total	Prior Year	Cars	Prior Year	Trucks	Prior Year	Total	Prior Year
1994-95	114,033	6.9	15,620	9.5	129,653	7.2	\$165,850	4.9	\$131,749	7.2	\$297,599	5.9
1995-96	121,911	6.9	16,719	7.0	138,630	6.9	172,339	3.9	136,269	3.4	308,608	3.7
1996-97	126,654	3.9	17,479	4.5	144,133	4.0	179,303	4.0	140,837	3.4	320,140	3.7
1997-98	132,472	4.6	18,627	6.6	151,099	4.8	186,290	3.9	149,036	5.8	335,326	4.7
1998-99	136,399	3.0	19,833	6.5	156,232	3.4	191,804	3.0	158,761	6.5	350,565	4.5
1999-00	138,762	1.7	21,341	7.6	160,103	2.5	195,301	1.8	172,035	8.4	367,336	4.8
2000-01	141,033	1.6	21,278	(0.3)	162,311	1.4	193,563	(0.9)	172,337	0.2	365,900	(0.4)
2001-02	150,496	6.7	22,298	4.8	172,794	6.5	212,650	9.9	163,101	(5.4)	375,751	2.7
2002-03	156,220	3.8	23,179	4.0	179,399	3.8	219,201	3.1	168,021	3.0	387,222	3.1
2003-04	163,612	4.7	24,407	5.3	188,019	4.8	228,515	4.2	180,229	7.3	408,744	5.6
2004-05	163,316	(0.2)	25,109	2.9	188,425	0.2	309,032	35.2	236,126	31.0	545,158	33.4
2005-06	160,590	(1.7)	25,311	0.8	185,901	(1.3)	321,268	4.0	267,369	13.2	588,637	8.0
2006-07	160,107	(0.3)	25,316	0.0	185,423	(0.3)	322,781	0.5	269,861	0.9	592,642	0.7
2007-08	164,097	2.5	25,455	0.5	189,552	2.2	327,761	1.5	271,165	0.5	598,926	1.1
2008-09	162,638	(0.9)	23,583	(7.4)	186,220	(1.8)	356,345	8.7	259,259	(4.4)	615,605	2.8
2009-10	166,497	2.4	23,705	0.5	190,201	2.1	415,981	16.7	302,057	16.5	718,038	16.6
2010-11	167,761	0.8	24,529	3.5	192,290	1.1	435,752	4.8	328,105	8.6	763,856	6.4
2011-12	167,971	0.1	24,860	1.3	192,831	0.3	455,133	4.4	342,646	4.4	797,779	4.4
2012-13	166,961	(0.6)	24,985	0.5	191,945	(0.5)	471,514	3.6	350,226	2.2	821,740	3.0
2013-14	167,387	0.3	25,729	3.0	193,116	0.6	497,671	5.5	368,395	5.2	866,066	5.4
2014-15	170,371	1.8	27,130	5.4	197,501	2.3	533,054	7.1	401,197	8.9	934,252	7.9
2015-16 (2)	176,369	3.5	28,414	4.7	204,783	3.7	588,295	10.4	443,325	10.5	1,031,620	10.4
2016-17 (3,4)	178,244	1.1	28,898	1.7	207,142	1.2	638,787	8.6	476,188	7.4	1,114,975	8.1
2017-18 (5)	179,125	0.5	29,985	3.8	209,110	1.0	678,720	6.3	524,438	10.1	1,203,158	7.9
2018-19	181,946	1.6	31,347	4.5	213,292	2.0	740,205	9.1	595,180	13.5	1,335,385	11.0
2019-20 (6,7,8)	158,738	(12.8)	30,602	(2.4)	189,340	(11.2)	683,511	(7.7)	606,050	1.8	1,289,561	(3.4)
2020-21 (9)	137,714	(13.2)	31,887	4.2	169,601	(10.4)	610,353	(10.7)	648,458	7.0	1,258,812	(2.4)
2021-22 (10)	165,128	19.9	34,976	9.7	200,103	18.0	819,784	34.3	749,243	15.5	1,569,027	24.6
2022-23	170,355	3.2	35,898	2.6	206,253	3.1	868,352	5.9	793,355	5.9	1,661,707	5.9

**Average Annual Percent Change**

Fiscal Year	Transactions			Gross Toll Revenue		
	Cars	Trucks	Total	Cars	Trucks	Total
FY 1994-95 - FY 2007-08	2.8	3.8	3.0	5.4	5.7	5.5
FY 2007-08 - FY 2018-19	0.9	1.9	1.1	7.7	7.4	7.6
FY 2018-19 - FY 2022-23	(1.6)	3.4	(0.8)	4.1	7.4	5.6
FY 1994-95 - FY 2022-23	1.4	3.0	1.7	6.1	6.6	6.3

- (1) Fiscal year beginning June 1.
- (2) The Delaware River Bridge toll plaza was converted from part of the Ticket System to a one-way barrier AET facility in January 2016.
- (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (4) AET conversion was implemented on Turnpike I-376 Beaver Valley Expressway in May 2017.
- (5) AET conversion and vehicle classification changes were implemented on the Northeast Extension Barrier Facilities in April 2018.
- (6) Toll by Plate surcharge for I-376 Beaver Valley Expressway was increased in October 2019.
- (7) AET conversion was implemented at Gateway Toll Plaza and Turnpike 66 in October 2019.
- (8) AET conversion with no surcharge for Toll by Plate was implemented on the Ticket System on March 16, 2020.
- (9) AET conversion with no surcharge for Toll by Plate was implemented on the Mon/Fayette Expressway on June 16, 2020.
- (10) A 13.2 mile extension of the Southern Beltway opened on October 15, 2021.

Note: Refer to Table 1 for toll rate increase information.



## Monthly Transactions and Gross Toll Revenue Trends

**Tables 3 through 5** present recent monthly transaction and gross toll revenue trends from FY 2020-21 through the first eight months of FY 2023-24 (January 2024) for all PTC facilities. The information is provided for PCs, CVs, and total vehicles. The facilities are summarized in the following order:

- Table 3 – the total Turnpike System (combined total of the Ticket System and Barrier System);
- Table 4 – the Ticket System (comprised of I-76/I-276 and I-476);
- Table 5 – the combined Barrier System (comprised of all facilities listed below);
  - Turnpike 43 (Mon/Fayette Expressway) (MFE);
  - Turnpike 66 (Amos K. Hutchinson Bypass) (AKH);
  - Northeast Extension (I-476) barrier plazas;
  - Turnpike I-376 (Beaver Valley Expressway) (BVE);
  - Turnpike I-576 (Southern Beltway – Findlay Connector);
  - Delaware River Bridge (DRB); and
  - Gateway Toll Plaza.

In each of these tables, the first fiscal year shown, FY 2020-21, experienced suppressed transactions and revenues due to the COVID-19 pandemic. During the early months of this fiscal year, there were still extant stay-at-home orders, limitations on public gatherings, and school closures. Over the course of the year, these were generally eased and eventually removed. By the start of FY 2021-22, almost all formal restrictions had been lifted, but many workers continued to telecommute.

As shown in Table 3, total systemwide transactions increased by 18.0 percent in FY 2021-22 as traffic rebounded from the effects of the pandemic. Although PC transaction growth of 19.9 percent was much higher than CV revenue growth of 9.7 percent, PCs were more significantly impacted by the pandemic and experienced steep declines during FY 2020-21, while CV transactions were impacted less severely and had returned to growth by September 2020. Total systemwide gross toll revenue experienced a similar trajectory, with 24.6 percent growth in FY 2021-22, with PC revenue growth of 34.3 and CV revenue growth of 15.5 percent.



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In FY 2022-23, transactions continued their recovery, albeit at a slower rate, with PC transactions growing by 3.2 percent, CV transactions growing by 2.6 percent, and total transactions growing by 3.1 percent. PC, CV, and total vehicle revenue all grew by 5.9 percent. Despite these similar growth numbers for PCs and CVs, there were noticeable differences in their growth throughout the year. PC transactions and revenue growth varied from month-to-month but were generally positive due to continued recovery from the COVID-19 pandemic. January 2023 experienced abnormally high growth of 16.3 percent for transactions and 11.0 percent for revenue due to multiple winter storms in January 2022 suppressing traffic during that month. CV traffic however, performed strongly through the summer, with transaction growth at or greater than 5.0% percent in June, August, and September of 2022. Throughout the rest of the fiscal year, however, growth stalled, with transactions growth only twice exceeding 2.0 percent and negative transactions growth in December 2022, March 2023, and April 2023. This coincided with rising inflation rates and gasoline prices and a general slowdown in freight shipping across the U.S. economy.

These divergent trends of PC and CV growth have continued thus far in FY 2023-24. PC transactions have grown 1.9 percent over the first eight months of the fiscal year, from June 2023 through January 2024, with positive growth in all months except January. CV transactions have declined a total of 0.9 percent over the same period, with negative growth in all months except October 2023 and January 2024. When combined, total transactions have increased 1.4 percent during this period. Revenue has experienced similar trends, although growth rates have been higher due to a toll rate increase of five percent. PC gross revenue has grown 6.7 percent between June 2023 and January 2024, while CV revenue has grown 3.5 percent. Total vehicle revenue has grown 5.2 percent over this eight-month period.

As previously mentioned, the Ticket System is by far the largest component of both traffic and toll revenue on the Turnpike System. As such, its overall growth patterns generally resemble those for the total system. As shown in Table 4, in FY 2021-22 total transactions increased 16.9 percent from the prior year, while toll revenue increased by 24.5 percent. PC transactions increased by 19.0 percent, while toll revenue grew 34.9 percent. CV transactions grew by 7.9 percent and toll revenue grew 15.2 percent compared to FY 2020-21.

As with the overall system, overall transactions continued to grow in FY 2022-23, but at a slower pace of 1.0 percent. Due to toll rate increases, total revenue grew at a faster rate of 4.9 percent. PC transactions exhibited stronger growth of 1.3 percent, while CV transactions declined 0.3 percent. These trends continued through the first eight months of FY 2023-24, with total revenue growth (4.8 percent) outpacing total transactions growth (1.0 percent) and PC transactions continuing to grow (1.5 percent) while CV transactions continued to decline (1.2). Despite these divergent trends of PC and CV growth over the past two years, PC transactions remain below 2019 levels while CV transactions continue to exceed 2019 levels due to the above normal growth of CV traffic during the pandemic and the resiliency of the work from home phenomenon,



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Table 5 provides the same information for all barrier toll facilities combined. Barrier facility toll revenue comprises about 17 percent of total systemwide toll revenue, although this has grown from less than 15 percent prior to the pandemic as some barrier facilities have expanded and grown faster than the Ticket System over the past few fiscal years.

In FY 2021-22, Barrier System total transactions grew 21.0 percent, even stronger than the 16.9 percent growth experienced on the Ticket System. PC growth (22.3 percent) outpaced CV growth (14.9 percent), although the difference was smaller than on the Ticket System. Due to toll rate increases, revenue growth was even stronger, with 31.8 percent growth for PCs, 17.5 percent growth for CVs, and total vehicle growth of 25.6 percent. Part of these faster growth rates for the barrier system in FY 2021-22 can be attributable to a 13.2-mile extension of the Southern Beltway that opened on October 15, 2021.

While growth slowed in FY 2022-23, the slowdown was less significant than on the Ticket System. Unlike the Ticket System, CV transactions experienced positive year-over-year growth in every month of the fiscal year and grew 10.9 percent overall, higher than PC growth of 8.1 percent. Total vehicle transaction growth was 8.5 percent, and total vehicle revenue growth was 11.4 percent. Once again, these figures were positively impacted by the opening of the Southern Beltway extension, as traffic continued to ramp up in its second year of operation.

Growth slowed in the first eight months of FY 2023-24, with total vehicle transactions growing by 2.3 percent and total vehicle revenue growing by 7.2 percent compared to the same eight-month period in the prior fiscal year, although both these figures are higher than the growth exhibited by the Ticket System. Like the Ticket System, CV transaction growth underperformed PC transaction growth in most months.



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**Table 3**  
**Total Turnpike System - Monthly Transaction and Revenue Trends**  
 Transactions Include Revenue and Non-Revenue Vehicles

Month	Passenger Cars							Commercial Vehicles							Total Vehicles							
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	
	June	10,557	36.0	14,360	2.1	14,665	5.9	15,529	2,716	10.6	3,002	7.9	3,239	(0.7)	3,217	13,273	30.8	17,363	3.1	17,904	4.7	18,746
July	12,228	24.1	15,171	(0.3)	15,120	3.2	15,602	2,788	6.5	2,970	2.6	3,047	(1.5)	3,003	15,016	20.8	18,141	0.1	18,167	2.4	18,605	
August	12,762	17.7	15,017	2.7	15,427	3.1	15,908	2,745	10.3	3,026	9.8	3,323	(0.3)	3,311	15,507	16.4	18,044	3.9	18,750	2.5	19,220	
September	12,193	15.3	14,060	3.4	14,539	0.7	14,647	2,758	8.2	2,983	5.0	3,133	(4.4)	2,997	14,951	14.0	17,042	3.7	17,672	(0.2)	17,644	
October	12,702	17.8	14,963	0.3	15,002	1.6	15,243	2,841	7.6	3,057	1.4	3,100	2.5	3,179	15,543	15.9	18,021	0.5	18,102	1.8	18,421	
November	10,730	30.4	13,995	0.1	14,008	2.2	14,321	2,509	14.6	2,874	1.3	2,910	(0.5)	2,895	13,238	27.4	16,869	0.3	16,918	1.8	17,216	
December	9,949	36.4	13,570	1.2	13,730	1.6	13,952	2,492	12.6	2,806	(1.8)	2,756	(3.0)	2,672	12,441	31.6	16,376	0.7	16,485	0.8	16,624	
January	9,939	9.4	10,877	16.3	12,646	(4.5)	12,079	2,410	6.4	2,565	6.2	2,723	0.4	2,735	12,348	8.9	13,442	14.3	15,369	(3.6)	14,814	
February	8,785	30.6	11,472	4.5	11,986			2,175	17.4	2,554	0.1	2,556			10,960	28.0	14,026	3.7	14,542			
March	11,777	12.2	13,213	4.4	13,797			2,816	8.8	3,064	(1.7)	3,012			14,593	11.5	16,277	3.3	16,810			
April	12,444	11.7	13,906	1.3	14,093			2,833	4.7	2,965	(3.1)	2,874			15,277	10.4	16,871	0.6	16,967			
May	13,650	6.4	14,523	5.6	15,343			2,805	10.8	3,109	3.7	3,224			16,456	7.1	17,632	5.3	18,567			
Total Year	137,714	19.9	165,128	3.2	170,355			31,887	9.7	34,976	2.6	35,898			169,601	18.0	200,103	3.1	206,253			
Subtotal	91,058	23.0	112,014	2.8	115,137	1.9	117,281	21,257	9.5	23,284	4.1	24,231	(0.9)	24,008	112,315	20.5	135,298	3.0	139,368	1.4	141,289	
Jun-Jan																						

Month	Passenger Cars							Commercial Vehicles							Total Vehicles							
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	
	June	\$43,987	58.1	\$69,542	8.4	\$75,387	11.2	\$83,857	\$52,201	18.1	\$61,648	12.6	\$69,420	3.1	\$71,598	\$96,188	36.4	\$131,190	10.4	\$144,807	7.4	\$155,455
July	52,274	57.1	82,121	0.5	82,549	3.4	85,370	52,730	16.8	61,582	8.4	66,772	1.3	67,654	105,004	36.9	143,703	3.9	149,321	2.5	153,024	
August	57,496	35.3	77,797	5.9	82,405	(1.3)	81,364	53,529	16.9	62,598	14.4	71,638	(1.4)	70,647	111,025	26.5	140,394	9.7	154,043	(1.3)	152,011	
September	50,963	28.3	65,407	13.8	74,449	10.9	82,542	52,040	14.4	59,534	12.4	66,931	1.1	67,692	103,003	21.3	124,941	13.2	141,379	6.3	150,234	
October	55,416	41.6	78,451	(5.4)	74,223	5.5	78,285	55,697	18.3	65,892	0.7	66,341	6.9	70,906	111,112	29.9	144,344	(2.6)	140,564	6.1	149,191	
November	44,030	36.5	60,100	16.5	70,031	6.2	74,404	49,039	15.2	56,500	11.6	63,075	2.0	64,352	93,069	25.3	116,600	14.2	133,106	4.2	138,756	
December	42,347	68.2	71,239	(5.5)	67,345	16.0	78,125	51,072	20.9	61,742	(2.9)	59,946	9.2	65,461	93,418	42.3	132,981	(4.3)	127,291	12.8	143,586	
January	44,324	26.5	56,090	11.0	62,236	2.8	63,988	51,916	14.2	59,310	4.1	61,751	6.9	65,981	96,240	19.9	115,400	7.4	123,987	4.8	129,969	
February	37,804	42.7	53,956	6.4	57,427			48,175	19.9	57,775	2.5	59,224			85,979	30.0	111,731	4.4	116,651			
March	52,941	18.3	62,609	12.6	70,482			61,248	12.2	68,693	2.3	70,252			114,189	15.0	131,302	7.2	140,733			
April	59,506	16.2	69,160	5.5	72,986			59,747	8.2	64,647	2.3	66,146			119,253	12.2	133,806	4.0	139,132			
May	69,267	5.8	73,312	7.5	78,833			61,065	13.5	69,323	3.7	71,858			130,332	9.4	142,635	5.6	150,692			
Total Year	\$610,353	34.3	\$819,784	5.9	\$868,352			\$648,458	15.5	\$749,243	5.9	\$793,355			\$1,258,812	24.6	\$1,569,027	5.9	\$1,661,707			
Subtotal	390,836	43.5	560,747	5.0	588,624	6.7	\$627,935	418,224	16.9	488,805	7.6	525,875	3.5	\$544,292	809,059	29.7	1,049,552	6.2	1,114,499	5.2	\$1,172,227	
Jun-Jan																						

NOTES:

- (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
- (2) AET conversion was implemented on the Ticket System and Mon/Fayette Expressway in June 2020.
- (3) A 13.2 mile extension of the Southern Beltway opened on October 15, 2021.



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**Table 4**  
**Ticket System - Monthly Transaction and Revenue Trends**  
 Transactions Include Revenue and Non-Revenue Vehicles

Month	Passenger Cars							Commercial Vehicles							Total Vehicles							
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	
	June	7,560	39.8	10,569	(1.0)	10,458	5.2	10,997	2,024	11.3	2,253	3.6	2,334	(2.2)	2,283	9,584	33.8	12,822	(0.2)	12,793	3.8	13,280
July	8,817	26.1	11,115	(4.2)	10,650	2.5	10,913	2,077	7.6	2,235	(2.2)	2,185	(2.2)	2,137	10,894	22.5	13,350	(3.9)	12,835	1.7	13,050	
August	9,241	18.6	10,964	(0.9)	10,867	2.7	11,159	2,053	10.8	2,276	4.5	2,379	(0.9)	2,359	11,294	17.2	13,240	0.0	13,246	2.0	13,517	
September	8,824	16.7	10,295	(0.3)	10,261	0.3	10,288	2,052	9.3	2,243	(0.3)	2,237	(4.4)	2,139	10,876	15.3	12,538	(0.3)	12,498	(0.6)	12,427	
October	9,269	17.2	10,867	(2.2)	10,623	1.5	10,782	2,126	6.8	2,270	(2.6)	2,211	3.0	2,278	11,395	15.3	13,137	(2.3)	12,834	1.8	13,059	
November	7,872	27.8	10,063	(0.8)	9,984	2.1	10,193	1,892	11.3	2,106	(1.1)	2,083	(0.2)	2,080	9,764	24.6	12,169	(0.8)	12,067	1.7	12,273	
December	7,314	33.5	9,762	0.5	9,806	1.6	9,965	1,892	8.7	2,057	(3.4)	1,987	(3.2)	1,923	9,205	28.4	11,819	(0.2)	11,793	0.8	11,888	
January	7,341	6.4	7,808	16.3	9,085	(4.7)	8,658	1,821	3.2	1,879	4.6	1,965	0.3	1,970	9,162	5.7	9,687	14.1	11,049	(3.8)	10,628	
February	6,398	29.8	8,307	3.4	8,586			1,626	14.9	1,869	(1.6)	1,840			8,024	26.8	10,177	2.4	10,426			
March	8,622	10.0	9,483	3.7	9,837			2,121	5.0	2,228	(2.7)	2,168			10,743	9.0	11,710	2.5	12,005			
April	9,122	8.9	9,934	0.7	10,007			2,120	1.6	2,154	(4.5)	2,056			11,243	7.5	12,088	(0.2)	12,063			
May	10,014	3.2	10,332	5.3	10,883			2,106	6.3	2,238	2.2	2,288			12,119	3.7	12,569	4.8	13,170			
Total Year	100,394	19.0	119,499	1.3	121,046			23,910	7.9	25,807	(0.3)	25,733			124,304	16.9	145,306	1.0	146,779			
Subtotal	66,238	23.0	81,443	0.4	81,734	1.5	82,955	15,937	8.7	17,318	0.4	17,381	(1.2)	17,168	82,175	20.2	98,761	0.4	99,115	1.0	100,123	
Jun-Jan																						

Month	Passenger Cars							Commercial Vehicles							Total Vehicles							
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	
	June	\$35,319	62.5	\$57,377	7.3	\$61,561	10.8	\$68,213	\$45,213	18.6	\$53,638	11.7	\$59,916	2.7	\$61,524	\$80,532	37.9	\$111,015	9.4	\$121,477	6.8	\$129,737
July	42,697	60.3	68,423	(1.6)	67,357	2.6	69,078	45,733	17.3	53,654	7.4	57,631	1.1	58,250	88,430	38.0	122,077	2.4	124,988	1.9	127,328	
August	46,956	38.1	64,828	4.2	67,533	(2.6)	65,746	46,518	17.4	54,595	13.3	61,836	(1.8)	60,716	93,474	27.8	119,423	8.3	129,369	(2.2)	126,462	
September	41,486	29.3	53,642	12.7	60,460	10.5	66,784	45,044	14.7	51,683	11.4	57,574	1.0	58,142	86,530	21.7	105,325	12.1	118,034	5.8	124,926	
October	45,050	44.2	64,959	(7.8)	59,891	5.1	62,919	48,290	18.7	57,319	(0.5)	57,051	6.8	60,909	93,340	31.0	122,279	(4.4)	116,941	5.9	123,828	
November	36,273	32.8	48,187	18.1	56,911	5.8	60,228	42,656	13.9	48,605	11.7	54,268	1.9	55,300	78,929	22.6	96,792	14.9	111,179	3.9	115,528	
December	34,329	72.9	59,349	(8.0)	54,612	15.8	63,219	44,492	20.5	53,632	(3.6)	51,699	9.4	56,568	78,821	43.3	112,981	(5.9)	106,311	12.7	119,787	
January	36,314	26.5	45,926	9.2	50,149	3.0	51,656	45,231	14.1	51,605	3.1	53,183	7.0	56,890	81,545	19.6	97,532	5.9	103,331	5.0	108,546	
February	30,899	40.9	43,533	5.5	45,943			42,135	18.8	50,044	2.1	51,084			73,034	28.1	93,578	3.7	97,027			
March	43,127	17.6	50,734	12.0	56,814			53,427	11.3	59,456	1.9	60,613			96,553	14.1	110,190	6.6	117,427			
April	48,848	14.9	56,151	4.8	58,847			51,990	7.4	55,817	2.2	57,046			100,838	11.0	111,968	3.5	115,892			
May	57,404	3.8	59,559	6.9	63,650			53,338	12.5	60,013	2.7	61,657			110,743	8.0	119,573	4.8	125,307			
Total Year	\$498,703	34.9	\$672,668	4.6	\$703,728			\$564,067	15.2	\$650,063	5.2	\$683,556			\$1,062,770	24.5	\$1,322,732	4.9	\$1,387,284			
Subtotal	318,425	45.3	462,691	3.4	478,474	6.1	\$507,842	363,177	16.9	424,732	6.7	453,156	3.3	\$468,299	681,602	30.2	887,423	5.0	931,630	4.8	\$976,141	
Jun-Jan																						

NOTES:

- (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
- (2) AET conversion occurred in June 2020.
- (3) Ticket System includes the Mainline (I-76/I-276) and Northeast Extension (I-476).



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**Table 5**  
**Combined Barrier Facilities - Monthly Transaction and Revenue Trends**  
 Transactions Include Revenue and Non-Revenue Vehicles

Month	Passenger Cars							Commercial Vehicles							Total Vehicles						
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24
	June	2,997	26.5	3,791	11.0	4,207	7.7	4,532	692	8.3	749	20.8	905	3.2	934	3,689	23.1	4,541	12.6	5,112	6.9
July	3,410	18.9	4,056	10.2	4,470	4.9	4,689	711	3.5	736	17.3	863	0.3	865	4,121	16.3	4,792	11.3	5,332	4.2	5,554
August	3,521	15.1	4,053	12.5	4,560	4.1	4,749	692	8.5	751	25.7	944	1.0	953	4,212	14.0	4,804	14.6	5,504	3.6	5,702
September	3,369	11.8	3,765	13.6	4,278	1.9	4,359	706	4.8	739	21.2	896	(4.2)	858	4,074	10.6	4,504	14.9	5,174	0.8	5,217
October	3,433	19.3	4,097	6.9	4,378	1.9	4,461	715	10.1	787	13.0	889	1.3	901	4,148	17.7	4,884	7.9	5,268	1.8	5,362
November	2,858	37.6	3,932	2.3	4,024	2.6	4,127	617	24.5	768	7.7	827	(1.4)	815	3,474	35.3	4,700	3.2	4,851	1.9	4,943
December	2,635	44.5	3,809	3.0	3,924	1.6	3,987	600	24.8	749	2.6	768	(2.5)	749	3,235	40.9	4,557	3.0	4,692	0.9	4,737
January	2,597	18.2	3,069	16.1	3,562	(4.0)	3,421	589	16.6	686	10.5	758	0.9	765	3,186	17.9	3,755	15.0	4,320	(3.1)	4,186
February	2,387	32.6	3,165	7.4	3,400			549	24.8	685	4.6	716			2,935	31.1	3,849	6.9	4,116		
March	3,155	18.2	3,730	6.2	3,960			695	20.4	837	0.9	844			3,849	18.6	4,567	5.2	4,804		
April	3,322	19.6	3,972	2.9	4,086			713	13.8	811	0.8	818			4,035	18.5	4,783	2.5	4,904		
May	3,637	15.2	4,191	6.4	4,460			699	24.5	871	7.5	937			4,336	16.7	5,062	6.6	5,397		
Total Year	37,320	22.3	45,629	8.1	49,309			7,977	14.9	9,169	10.9	10,165			45,296	21.0	54,798	8.5	59,474		
Subtotal Jun-Jan	24,820	23.2	30,571	9.3	33,403	2.8	34,326	5,321	12.1	5,965	14.8	6,850	(0.1)	6,841	30,141	21.2	36,537	10.2	40,253	2.3	41,166

Month	Passenger Cars							Commercial Vehicles							Total Vehicles						
	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24	2020-21	% Chg	2021-22	% Chg	2022-23	% Chg	2023-24
	June	\$8,667	40.4	\$12,165	13.7	\$13,826	13.1	\$15,644	\$6,989	14.6	\$8,010	18.7	\$9,504	6.0	\$10,075	\$15,656	28.9	\$20,175	15.6	\$23,330	10.2
July	9,577	43.0	13,699	10.9	15,191	7.2	16,292	6,997	13.3	7,928	15.3	9,142	2.9	9,404	16,574	30.5	21,627	12.5	24,333	5.6	25,696
August	10,540	23.0	12,969	14.7	14,872	5.0	15,618	7,012	14.1	8,002	22.5	9,803	1.3	9,932	17,552	19.5	20,971	17.7	24,674	3.5	25,549
September	9,477	24.1	11,765	18.9	13,988	12.7	15,758	6,995	12.2	7,851	19.2	9,357	2.1	9,550	16,472	19.1	19,616	19.0	23,345	8.4	25,308
October	10,366	30.2	13,492	6.2	14,332	7.2	15,367	7,406	15.8	8,573	8.4	9,291	7.6	9,997	17,772	24.2	22,065	7.1	23,623	7.4	25,364
November	7,756	53.6	11,913	10.1	13,120	8.0	14,176	6,383	23.7	7,895	11.6	8,807	2.8	9,052	14,140	40.1	19,808	10.7	21,927	5.9	23,229
December	8,018	48.3	11,890	7.1	12,733	17.1	14,906	6,580	23.3	8,109	1.7	8,247	7.8	8,893	14,597	37.0	19,999	4.9	20,980	13.4	23,799
January	8,010	26.9	10,163	18.9	12,088	2.0	12,332	6,685	15.3	7,705	11.2	8,568	6.1	9,091	14,695	21.6	17,868	15.6	20,656	3.7	21,423
February	6,905	50.9	10,423	10.2	11,483			6,040	28.0	7,731	5.3	8,141			12,945	40.2	18,154	8.1	19,624		
March	9,815	21.0	11,875	15.1	13,668			7,821	18.1	9,237	4.4	9,639			17,636	19.7	21,112	10.4	23,307		
April	10,658	22.1	13,009	8.7	14,139			7,757	13.8	8,830	3.1	9,101			18,414	18.6	21,839	6.4	23,240		
May	11,862	15.9	13,753	10.4	15,183			7,727	20.5	9,309	9.6	10,201			19,589	17.7	23,062	10.1	25,384		
Total Year	\$111,651	31.8	\$147,115	11.9	\$164,624			\$84,391	17.5	\$99,180	10.7	\$109,800			\$196,042	25.6	\$246,295	11.4	\$274,423		
Subtotal Jun-Jan	72,411	35.4	98,056	12.3	110,151	9.0	\$120,093	55,046	16.4	64,073	13.5	72,718	4.5	\$75,993	127,457	27.2	162,129	12.8	182,869	7.2	\$196,086

NOTES:

- (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
- (2) AET Conversion of Mon/Fayette Expressway occurred in June 2020.
- (3) A 13.2 mile extension of the Southern Beltway opened on October 15, 2021.
- (4) Barrier System includes Mon/Fayette Expressway (PA 43), Amos K. Hutchinson Bypass (PA 66), Northeast barriers (Clarks and Keyser), Beaver Valley Expressway (I-376), Southern Beltway (PA 576), Delaware River Bridge (New Jersey border), and Gateway Toll Plaza (Ohio border).

## Committed Roadway Improvements

**Table 6** lists major capacity-enhancing roadway improvements with dedicated funding on the Pennsylvania Turnpike System. The locations of these projects are illustrated in **Figure 3**. Most of these projects are part of PTC's statewide Total Reconstruction Initiative, which is a multi-year project to widen the mainline and the Northeast Extension to six lanes (three in each direction). On the Mainline I-76/I-276 this includes work throughout the Pittsburgh, Somerset, and Philadelphia areas. Since the 2023 IG Study Bring Down letter, funding has been designated for the construction of a bypass around the Allegheny Mountain Tunnel and three mainline widening projects (from mileposts 131 to 134, 316 to 319, and 320 to 324) and the widening projects for miles 57-67 on the Mainline and 38-44 on the Northeast Extension have each been split into two separate phases. Table 6 has been updated to reflect these changes. No projects have been completed since the 2023 IG Study, so no projects have been removed from the list. Furthermore, some dates and mileposts were updated to reflect the latest information available from PTC.

Table 6 also highlights eight non-widening projects:

- The relocation of the Gateway Toll Plaza to milepost 5.4 and conversion of vehicle classifications;
- A new cashless tolling interchange between I-76 and SR 130 in Westmoreland County;
- The construction of a realignment of the Mainline Turnpike to bypass the Allegheny Mountain Tunnel in Somerset County;
- A new cashless tolling interchange between I-276 and Lafayette Street in Montgomery County;
- The construction of two interchanges between I-476 and I-81 to create a Scranton Beltway;
- An eight-mile extension of MFE to from PA 51 to PA 2043 in Allegheny County;
- The conversion of the entire Ticket System from entry-exit tolling to segment-based tolling; and
- The conversion of vehicle classification from weight-based to axle- and height-based on all Turnpike Systems.



Mr. Richard Dreher

March 22, 2024

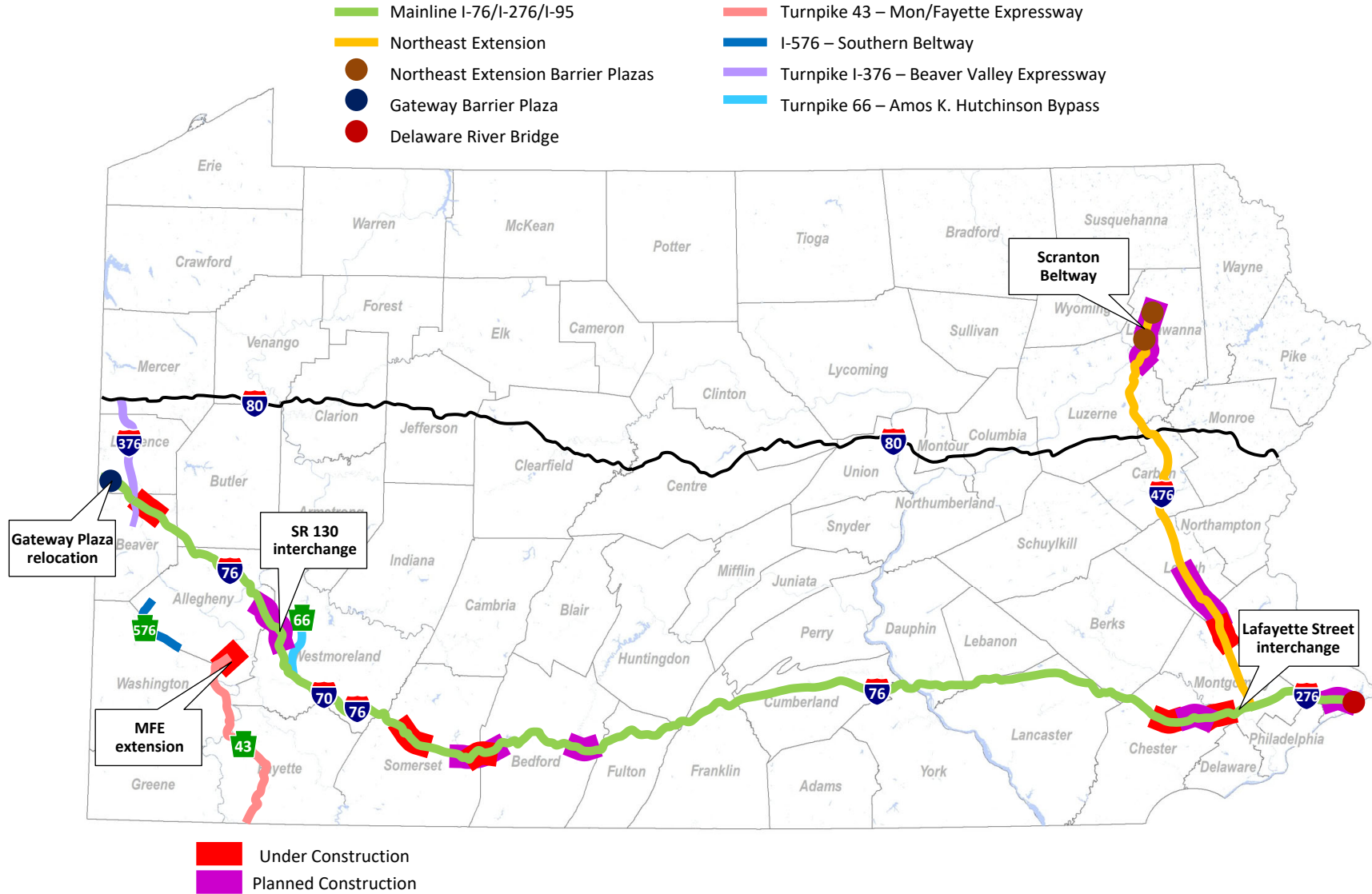
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**Table 6  
Major Committed Roadway Improvements on the Pennsylvania Turnpike System (1)**

Milepost	Counties	Description	Actual or Assumed Start Date	Assumed Completion Date
<b>Mainline I-76/I-276/I-95</b>				
Gateway Toll Plaza	Lawrence	Relocate toll plaza to MP 5.4 and convert vehicle classification	2024	2027
12-14	Beaver	Replacement of bridge over Beaver River and widen to 3 lanes in	December 2022	September 2027
49-53	Allegheny	Reconstruct and widen to 3 lanes in each direction	2033	2036
53-57	Allegheny	Reconstruct and widen to 3 lanes in each direction	2029	2033
57-62	Allegheny and Westmoreland	Reconstruct and widen to 3 lanes in each direction	2033	2037
62-67	Westmoreland	Reconstruct and widen to 3 lanes in each direction	2029	2033
63	Westmoreland	Construct a new cashless tolling interchange at SR 130	2032	2035
102-109	Somerset County	Reconstruct and widen to 3 lanes in each direction	January 2021	August 2024
121-125	Somerset County	Construct new stretch of mainline roadway to realign Turnpike around existing Allegheny Mountain Tunnel	2034	2040
126-131	Somerset and Bedford	Reconstruct and widen to 3 lanes in each direction	June 2022	Fall 2026
131-134	Bedford	Reconstruct and widen to 3 lanes in each direction	2032	2036
149-155	Bedford	Reconstruct and widen to 3 lanes in each direction	2032	2036
312-316	Chester	Reconstruct and widen to 3 lanes in each direction	Spring 2023	2027
316-319	Chester	Reconstruct and widen to 3 lanes in each direction	2029	2033
320-324	Chester	Reconstruct and widen to 3 lanes in each direction	2026	2031
324-326	Chester and Montgomery	Reconstruct and widen to 3 lanes in each direction	Fall 2021	May 2025
331	Montgomery	Construct a new cashless tolling interchange at Lafayette Street	2027	2030
350-352	Bucks	Reconstruct and widen to 3 lanes in each direction	2032	2035
352-355	Bucks	Reconstruct and widen to 3 lanes in each direction	2027	2031
355-356	Bucks	Reconstruct and widen to 3 lanes in each direction	2024	2027
<b>Northeast Extension I-476</b>				
A38-A43	Montgomery and Bucks	Reconstruct and widen to 3 lanes in each direction	April 2022	Summer 2025
A43-A44	Bucks	Reconstruct and widen to 3 lanes in each direction	2028	2031
A44-A48	Bucks and Lehigh	Reconstruct and widen to 3 lanes in each direction	2031	2036
A48-A53	Lehigh	Reconstruct and widen to 3 lanes in each direction	2027	2032
A53-A57	Lehigh	Reconstruct and widen to 3 lanes in each direction	2031	2035
Scranton Beltway	Lackawanna and Luzerne	Link I-476 to I-81 with two interchanges to create a Scranton Beltway	2029	2032
<b>Mon/Fayette Expressway Turnpike 43</b>				
PA 51 to PA 2043	Allegheny	Construct an extension of the existing Turnpike 43 including one new interchange	March 2023	Winter 2028
<b>System-wide</b>				
System-wide		Convert from entry-exit tolling to segment-based (open road) tolling	2025	2027
System-wide		Convert vehicle classification from from weight-based to axle- and height-based	2025	2027

(1) The major committed roadway improvement projects listed here are a small subset of all projects listed in PTC's FY 2024 Ten Year Capital Plan.





**PENNSYLVANIA TURNPIKE COMMISSION (PTC)  
MAJOR ROADWAY IMPROVEMENT PROJECTS**



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For purposes of conservatism, each of the listed projects are assumed to have no net effect on Turnpike revenue figures.

Ongoing construction-related impacts stemming from roadway widening and reconstruction projects on the Turnpike System are expected to be minimal. Construction projects on the Turnpike System are planned to minimize lane closures or any restrictions to the Turnpike. When such measures are necessary, they are conducted overnight to avoid interfering with heavier daytime traffic volumes. Generally, preference is given to Turnpike Mainline traffic and construction-related disruptions are more likely to affect cross streets and Turnpike access points. Two travel lanes are maintained in both directions during construction activities.

Conversion of the Ticket System from an entry-exit system to segment-based tolling, also known as open road tolling (ORT), will begin on the Northeast Extension and the eastern part of the state (east of Reading) in 2025, while ORT will roll out in the western part of the state beginning in late 2026, with completion in 2027. Although the conversion will significantly alter the way in which tolls are charged, there is expected to be no net revenue impact to the Turnpike System. Under the segment-based system there will be a toll gantry in between each set of interchanges, and drivers will be charged a given rate at each gantry they pass through rather than one rate based on entry and exit points. As a result, the number of transactions on the Ticket System will increase significantly once ORT is implemented although gross revenue is intended to remain unchanged on a system-wide basis. The segment-based system will result in a simpler toll rate structure with each segment having a set price and no need for a complex matrix of entry-exit combinations. Additionally, the toll overhead toll gantries on the Mainline will eliminate the need for toll plazas on entrance and exit ramps, which will be removed and allow for free-flowing traffic on the ramps.

Axle- and height-based vehicle classification on the Ticket System will occur concurrently with ORT conversion and has been separately analyzed and assumed to have no net effect on either transactions or revenue. Planned vehicle classification changes are summarized in **Table 7**, although the toll rates for the new classifications have not yet been decided. PTC will decide what these revenue-neutral toll rates will be prior to system conversion.

Conversion to axle- and height-based vehicle classification on barrier systems that have not yet been converted has not yet been analyzed but is expected to have no or minimal revenue impacts. While the extension of MFE and construction of new interchanges with SR 130, Lafayette Street, and I-81 are expected to bring more transactions, and possibly more revenue, to the Turnpike System, construction of these projects is not expected to be completed until after ORT conversion. Therefore, traffic and revenue impacts of these projects has not yet been analyzed or accounted for in this forecast.



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**Table 7  
 Planned Vehicle Classification Changes on the Pennsylvania Turnpike System**

Roadway	Current Classification	Current Number of Classes	2025 Classification	2025 Number of Classes
Mainline and Northeast Extension	Weight and Axles (1-9)	9		
Warrendale	Axle only (2-6+)	5	Axle and Height (2L-7H)	align="center">11
Clarks Summit and Keyser Avenue <sup>(1)</sup>	Axle and height (2L-7H)	11		
Findlay and Southern Beltway <sup>(1)</sup>	Axle and height (2L-7H)	11		
Mid-County <sup>(2)</sup>	Axle only (2-6+)	5	N/A	N/A
DRB and Gateway <sup>(1)</sup>	Axle only (2-6+)	5	Axle only (2-6+)	align="center">5
BVE and AKH (Mainline) <sup>(1)</sup>	Weight and Axles (1-9)	9		
BVE and AKH (Ramps)	Axle only (2-6+)	2		
Mon/Fayette <sup>(1)</sup>	Axle only (2-6+)	5		

(1) No change in 2025

(2) Eliminated with ORT

In addition to PTC-funded projects, the Pennsylvania Department of Transportation’s (PennDOT’s) Transportation Improvement Program (TIP) was reviewed. This review found no projects on competing or complementary routes that are expected to have an impact on Pennsylvania Turnpike System traffic and revenue.

### Actual and Assumed Toll Rate Increases

Annual toll rate increases are assumed to occur on the entire Turnpike System. The toll rate increases are assumed to occur at 12:01 AM on the first Sunday after January 1 of each year unless otherwise noted. **Table 8** presents the annual actual and planned percent increases in toll rates for each calendar year from 2023 through 2054.

Rate increase assumptions are unchanged since the 2023 IG Study. Toll adjustment assumptions for the years 2025 and beyond are proposed and have not yet been formally approved by the PTC Board.

As discussed previously, PTC is in process of converting the entirety of the Ticket System from an entry-exit system to a segment-based system. Although these changes will result in an entirely new toll rate structure and toll rate tables, annual toll rate increases will continue according to the schedule displayed in Table 8.



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**Table 8**  
**Actual and Assumed Future Toll Rate Increases (1)**

Calendar Year	Percent Increase (1)	Sample Toll Rates		
		\$1.00 Toll	\$2.50 Toll	\$10.00 Toll
2023 (2)(3)	5.0	\$1.00	\$2.50	\$10.00
2024 (2)(3)	5.0	1.10	2.70	10.50
2025 (4)	5.0	1.16	2.84	11.03
2026	4.0	1.21	2.95	11.47
2027	3.5	1.25	3.05	11.87
2028	3.0	1.29	3.14	12.23
2029	3.0	1.33	3.23	12.60
2030	3.0	1.37	3.33	12.98
2031	3.0	1.41	3.43	13.37
2032	3.0	1.45	3.53	13.77
2033	3.0	1.49	3.64	14.18
2034	3.0	1.53	3.75	14.61
2035	3.0	1.58	3.86	15.05
2036	3.0	1.63	3.98	15.50
2037	3.0	1.68	4.10	15.97
2038	3.0	1.73	4.22	16.45
2039	3.0	1.78	4.35	16.94
2040	3.0	1.83	4.48	17.45
2041	3.0	1.88	4.61	17.97
2042	3.0	1.94	4.75	18.51
2043	3.0	2.00	4.89	19.07
2044	3.0	2.06	5.04	19.64
2045	3.0	2.12	5.19	20.23
2046	3.0	2.18	5.35	20.84
2047	3.0	2.25	5.51	21.47
2048	3.0	2.32	5.68	22.11
2049	3.0	2.39	5.85	22.77
2050	3.0	2.46	6.03	23.45
2051	3.0	2.53	6.21	24.15
2052	3.0	2.61	6.40	24.87
2053	3.0	2.69	6.59	25.62
2054	3.0	2.77	6.79	26.39

- (1) Future toll rate increases are assumed to be implemented within several days of January 1.
- (2) Reflects actual toll rate increases on the Turnpike System.
- (3) By PTC Policy, all rates are rounded up to the nearest dime.
- (4) Beginning in 2025, tolls are rounded to the nearest penny due to undetermined policies after conversion to ORT.

## Actual and Assumed E-ZPass Penetration Rates

**Table 9** presents the actual and assumed annual E-ZPass penetration rates from calendar year 2023 through 2053. The rates shown include both E-ZPass and v-toll transactions, which are image-based transactions where the license plate is matched to an existing E-ZPass customer account. Because v-toll transactions are charged the E-ZPass rate, these transactions are aggregated with E-ZPass transactions when considering penetration rates. This E-ZPass + v-toll penetration rate reflects the true customer base that has an E-ZPass transponder, as by definition all v-toll transactions must be conducted by an E-ZPass customer.

Since the beginning of the pandemic and the implementation of system-wide AET in the spring of 2020, the system-wide share of v-toll transactions has increased notably, as illustrated in **Figure 4**. In this figure the yellow line represents the monthly share of system-wide E-ZPass transactions, the blue line represents the system-wide share of combined E-ZPass and v-toll transactions, and the difference between the two lines represents v-toll transactions. E-ZPass usage declined sharply between April and July of 2020 and has yet to recover. After the decline experienced in 2020, E-ZPass market share remained very consistent from 2021 to 2023, peaking at about 77 percent every winter and falling to about 74 percent every summer as vacation travelers that are less likely to have an E-ZPass account comprise a larger portion of users.

Conversely, as seen in **Figure 5**, the share of transactions conducted via v-toll has been increasing since 2015, which is the year prior to PTC's first AET system implementation on the Delaware River Bridge (DRB). As PTC converted more of its systems to AET, the share of v-toll transactions has increased as E-ZPass customers traveling without a transponder on a given day are now captured via Toll By Plate (TBP) tolling and cannot stop to pay cash instead. In 2015, the year prior to AET implementation on the DRB, v-tolls accounted for only 1.5 percent of system-wide transactions. By 2021, which was the first full calendar year with system-wide AET, v-tolls had grown to 9.6 percent of all transactions. V-toll usage grew to 11.7 percent of all transactions in calendar year 2023 and is expected to continue growing until reaching 12.9 percent of transactions in 2028.

In Table 9, the first three columns show the E-ZPass + v-toll market share assumptions for the 2024 Bring Down Letter. These were adjusted slightly on a facility-by-facility basis, by the amount shown in the three rightmost columns, over assumptions used in the 2023 IG Study. These adjustments were made considering the trends of stable E-ZPass usage and rising v-toll usage discussed in the preceding paragraphs.

Assumed E-ZPass + v-toll market shares for PCs have only minor differences from those assumed in the 2023 IG Study. However, E-ZPass + v-toll market share for CV traffic was 0.3 percent higher than expected in 2023 and future year market shares have accordingly been revised upwards between 0.5 and 0.7 percent. The resulting impact to total E-ZPass + v-toll market share is an upwards revision of between 0.0 and 0.1 percent annually as compared to the 2023 IG Study.



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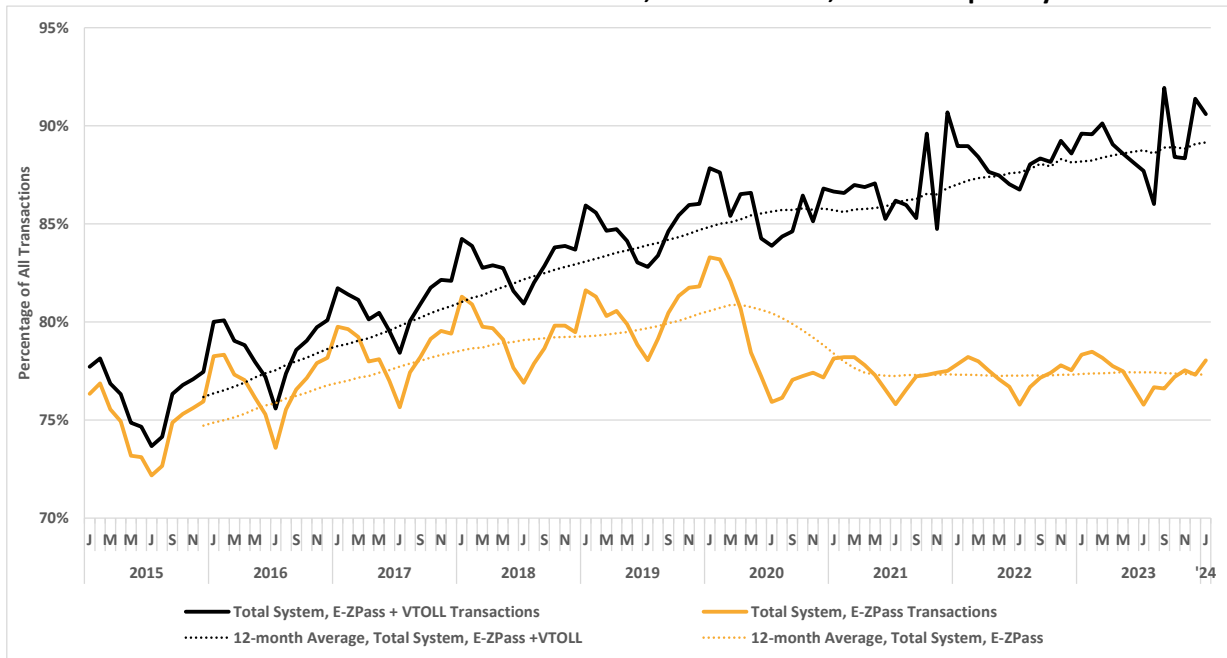
**Table 9**  
**Actual and Assumed Percent E-ZPass + v-Toll Penetration**  
**Pennsylvania Turnpike System**

Calendar	E-ZPass Penetration Rates					
	2024 Bring Down Letter			Difference from 2023 IG Study		
	Year	Cars	Trucks	Total	Cars	Trucks
2023 (1)	88.3	92.2	89.0	-0.1	0.3	0.0
2024	89.0	92.7	89.7	-0.1	0.5	0.1
2025	89.5	93.2	90.1	0.0	0.7	0.1
2026	89.7	93.4	90.4	0.0	0.7	0.1
2027	89.8	93.5	90.4	0.0	0.7	0.1
2028	89.8	93.5	90.4	0.0	0.6	0.1
2029	89.8	93.5	90.4	0.0	0.6	0.1
2030	89.8	93.5	90.4	0.0	0.6	0.1
2031	89.8	93.5	90.4	0.0	0.6	0.1
2032	89.8	93.5	90.4	0.0	0.6	0.0
2033	89.8	93.5	90.4	0.0	0.6	0.0
2034	89.8	93.5	90.4	0.0	0.6	0.0
2035	89.8	93.5	90.5	0.0	0.6	0.1
2036	89.8	93.5	90.5	0.0	0.6	0.1
2037	89.8	93.5	90.5	0.0	0.6	0.1
2038	89.8	93.5	90.5	0.0	0.6	0.1
2039	89.8	93.5	90.5	-0.1	0.6	0.1
2040	89.8	93.5	90.5	-0.1	0.6	0.1
2041	89.8	93.5	90.5	-0.1	0.6	0.1
2042	89.8	93.5	90.5	-0.1	0.6	0.1
2043	89.8	93.5	90.5	-0.1	0.6	0.1
2044	89.8	93.5	90.5	-0.1	0.6	0.1
2045	89.8	93.5	90.5	-0.1	0.6	0.1
2046	89.8	93.5	90.5	-0.1	0.6	0.0
2047	89.8	93.5	90.5	-0.1	0.6	0.0
2048	89.9	93.5	90.5	0.0	0.6	0.0
2049	89.9	93.5	90.5	0.0	0.6	0.0
2050	89.9	93.5	90.5	0.0	0.6	0.0
2051	89.9	93.5	90.6	0.0	0.6	0.1
2052	89.9	93.5	90.6	0.0	0.6	0.1
2053	89.9	93.5	90.6	0.0	0.6	0.1

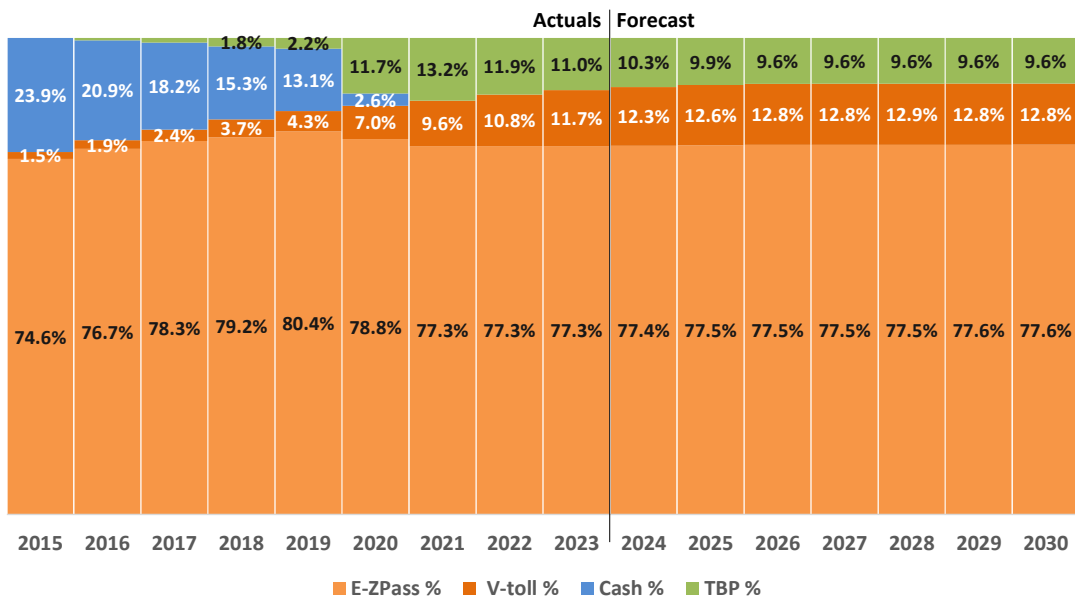
(1) 2023 E-ZPass penetration rates are actual for the 2024 Bring Down Letter only.

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**Figure 4**  
**Historical E-ZPass and V-toll Transactions, Total Vehicles, Total Turnpike System**



**Figure 5**  
**Historical and Forecast Market Shares of Total System-wide Transactions**





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## **Estimated COVID-19 Traffic and Toll Revenue Impacts**

Since March 2020, traffic and revenue on the Pennsylvania Turnpike System and all other highways have been impacted by the COVID-19 pandemic. Generally speaking, PC traffic has been negatively impacted as rates of telecommuting increased substantially and, at least in the early stages of the pandemic, social distancing and closure and capacity limitations of many businesses, public facilities, and events discouraged recreational travel. However, after an initial decline in the spring and summer of 2020, CV traffic has been positively impacted as freight traffic grew due to increased consumer demand for ecommerce. While most of these impacts have now been reflected into baseline growth, CDM Smith has made minor adjustments to forecast PC and CV traffic to account for additional normalization expected to occur.

PC traffic on the Pennsylvania Turnpike and other peer systems in the northeast and Midwest have not yet returned to 2019 levels due to shifts in commuting and travel patterns caused by the pandemic. Conversely, the high levels of growth experienced by CV traffic since 2020 due to the pandemic and increased demand for consumer goods has resulted in monthly CV traffic exceeding 2019 levels in most months since the fall of 2020.

The 2023 IG Study accounted for continued normalization of both PC and CV traffic by assuming an additional 3.5-percent growth in baseline PC traffic and an additional 1.8-percent to 3.5-percent decline in CV traffic over the following years. Even after these adjustments were built into the forecast, PC traffic would remain below 2019 levels while CV traffic would remain above 2019 levels. CDM Smith believes that PC traffic has mostly stabilized from any COVID-19 impacts and no further adjustments for PC traffic are included in this forecast.

It is also expected that CV traffic will continue to decline from its height in 2022. This forecast modifies the assumptions used in the 2023 IG Study so to reflect a continued decline in CV transactions in 2024, reduced growth in 2025, and return to normal growth in 2026.

## **Short-term Economic Outlook**

CDM Smith reviewed the Wall Street Journal Economic Forecasting Survey (WSJ EFS), which is a quarterly survey of more than 75 economic forecasters, to inform any potential adjustments for the short-term economic outlook. The forecast developed as part of the 2023 IG Study included a small adjustment to account for a 50-percent probability of a mild recession in 2023. At the time of that study, the aggregated forecast of respondents indicated that there was more than a 60-percent probability of a recession occurring in 2023. However, in the most recent iteration of the WSJ EFS, only 30 percent of economists surveyed expected negative gross domestic product (GDP) growth in the second quarter of 2024. Therefore, all recessionary impacts have been removed from this forecast.



## Summary of Changes in Future Year Estimates for U.S. Gross Domestic Product and Pennsylvania Gross State Product

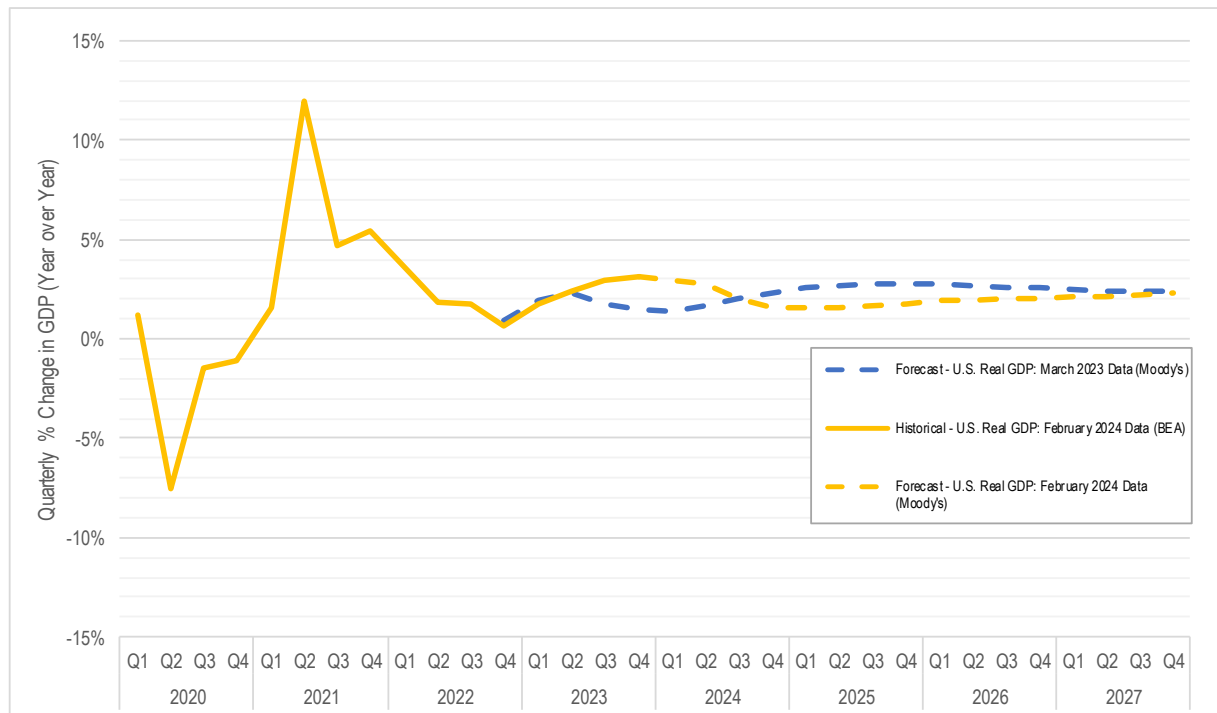
This section presents a comparison of the GDP and Pennsylvania gross state product (GSP) information available for the 2024 Bring Down Letter with updated forecasts for both measures from Moody's Analytics. This information was a key input in developing estimated growth forecasts for the Turnpike System. All GDP and GSP figures in this section refer to year-over-year comparisons. For example, the fourth quarter 2023 percent change would reflect the fourth quarter of 2023 versus the fourth quarter of 2022.

**Figure 6** shows actual and estimated GDP at the time of the 2023 IG Study as well as the revised figures based on updated Moody's Analytics' forecasts as of February 2024. At the time of the 2023 IG Study, the most recent actual GDP figure available was for quarter four (Q4) of 2022. Economic forecasters generally expected a recession in the second half of 2023 and/or early 2024, as reflected in the 2023 IG Study.

Since then, actual GDP growth figures have been released for each of the four quarters of 2023. During the first two quarters of 2023, actual GDP growth was close to the forecast GDP for those periods, growing 0.2 percent less than estimated in Q1 and 0.1 percent more than estimated in Q2. In the second half of the year, however, GDP growth was much stronger than expected, with 2.9 percent growth in Q3 and 3.1 percent growth in Q4. This is 1.1 percent higher than the 1.8 percent estimated growth in Q3 and 1.6 percent higher than the 1.5 percent estimated growth in Q4. This is due to the lack of a recession or economic slowdown during this period as was predicted.

Accordingly, GDP growth through the first half of 2024 is now expected to be higher than previously forecast, as a recession is no longer predicted. However, beginning in 2024 Q4, growth is now expected to be lower than previously predicted, largely because GDP growth continued to occur throughout 2023 and there is no longer an expected "recovery" period in late 2024 and 2025. Longer term, in the latest February 2024 forecast, year-over-year GDP is expected to grow at a steady rate of between 1.9 and 2.3 percent throughout 2026 and 2027. Although this rate of growth is below the 2.4 to 2.8 percent growth that was predicted during these years in the last forecast, the actual GDP is projected to be higher in the latest forecast because of continued growth throughout 2023 and 2024.

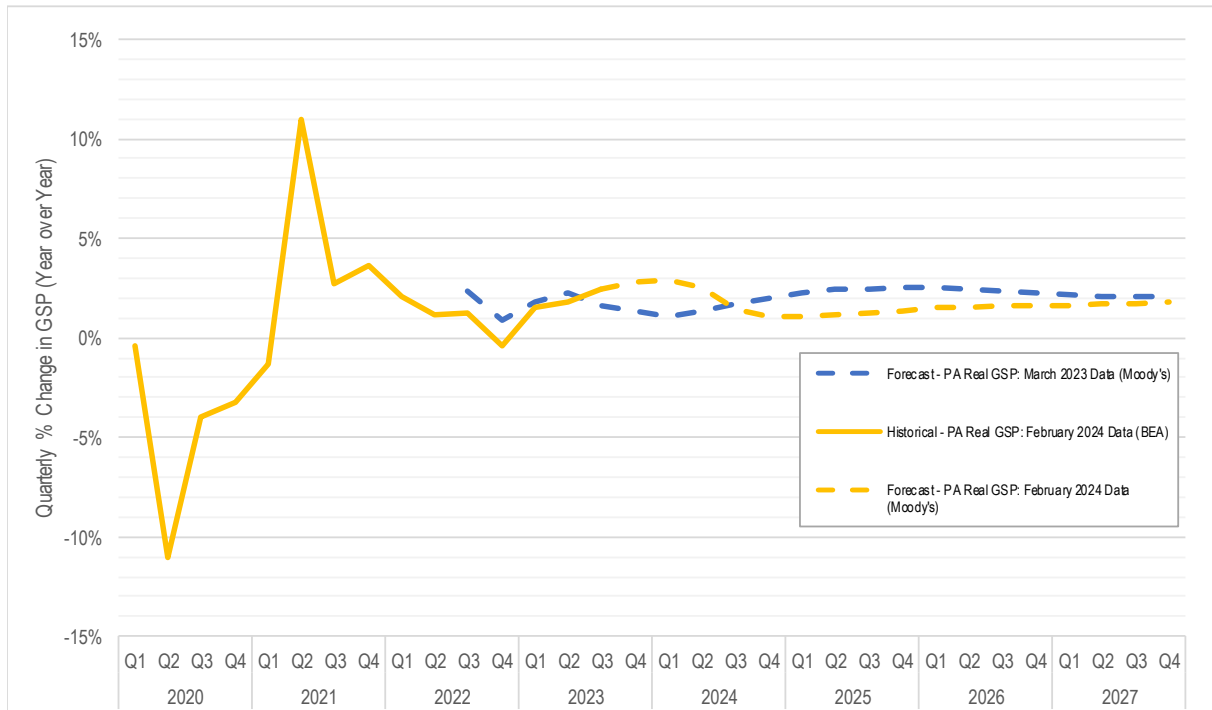
**Figure 6**  
**Comparison of March 2023 to February 2024 Quarterly Growth Estimates of U.S. Gross Domestic Product**



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (March 2023 and February 2024 Releases)

**Figure 7** shows GSP trend and forecast data for Pennsylvania. However, because GSP data lags GDP data, GSP is actual through only the third quarter of 2023. Similarly, at the time of the 2023 IG Study, GSP was only actual through 2022 Q3, and even that historical datapoint has been revised downward in the latest dataset, and actual GSP growth continued to be lower than forecast from 2022 Q4 through 2023 Q2. However, like GDP, actual GSP growth in 2023 Q3 was much stronger than forecast, growing 2.5 percent year-over-year as compared to the 1.5 percent growth that was predicted. GSP growth from 2023 Q4 to 2024 Q2 is now projected to be between 2.6 and 2.9 percent each quarter, as opposed to the 1.0 to 1.4 percent growth that was predicted at the time of the 2023 IG Study. Similar to GDP, year-over-year growth from 2024 Q4 through 2027 is projected to be slower than previously forecast, largely due to unexpectedly strong growth in 2023 and 2024.

**Figure 7**  
**Comparison of March 2023 and February 2024 Quarterly Growth Estimates of Pennsylvania Gross State Product**



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (March 2023 and February 2024 Releases)

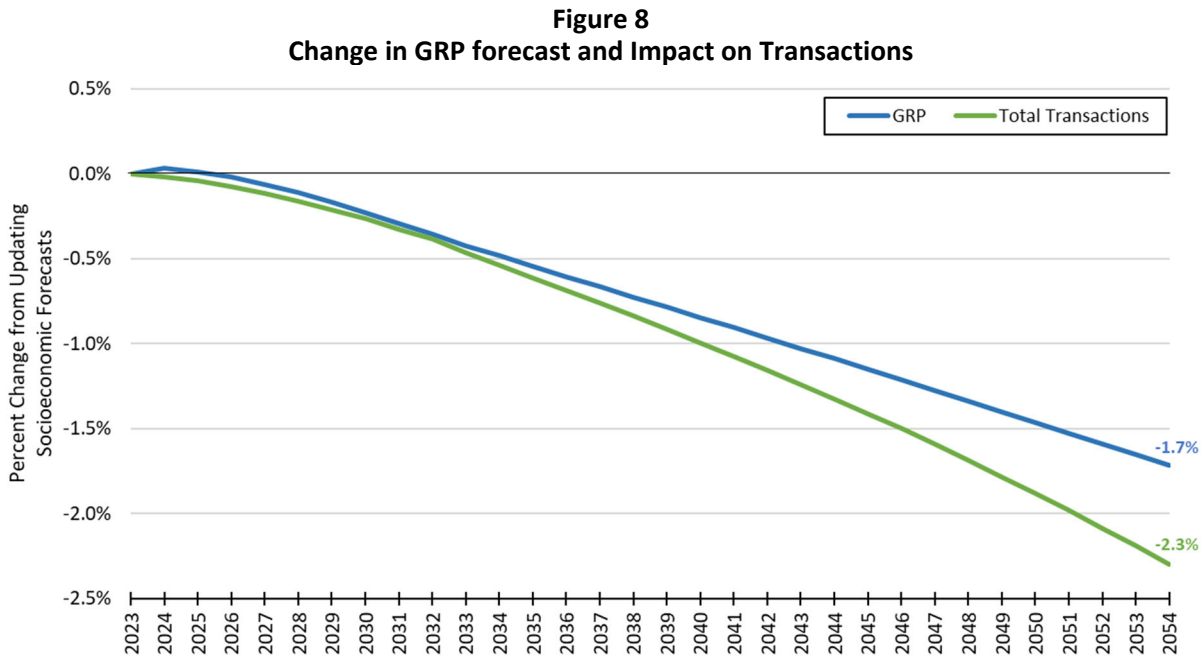
## Econometric Forecasting Update

In the 2023 IG Study, historical and forecast socioeconomic data were collected and evaluated to understand state and regional trends. Econometric analysis was performed to estimate long-term baseline travel demand on the Pennsylvania Turnpike system. Those growth rates were utilized to estimate long-term transactions growth (2025 onwards). A Bring Down Letter typically utilizes the same demand growth projections from the previous underlying investment grade study, which in this case was the 2023 IG Study. To ensure that these demand growth projections are still valid and reasonable given the long-term nature of the forecast, CDM Smith conducted a review of the latest gross regional product (GRP) projections made by Woods & Poole Economics, Inc. (W&P) compared to the projections that informed the 2023 IG Study. As discussed in the previous section, CDM Smith also reviewed Moody's February 2024 GSP forecast for Pennsylvania against the projection available at the time of the 2023 IG Study.

Both W&P and Moody's forecasts estimate lower GRP and GSP growth from 2023 to 2054 (the outer year of the forecast) as compared to the forecasts utilized in the 2023 IG study. The downward revisions to GRP and GSP growth are generally smaller in the near-term but become

larger due to cumulative impacts by 2054. GRP grows 1.7 percent less than prior projections by the outer year 2054.

GRP forecasts are an input to CDM Smith’s econometric model developed in the 2023 IG Study. The econometric model, which remains unchanged from the 2023 IG Study, establishes the relationship between GRP and transactions. CDM Smith used the latest GRP forecasts to re-estimate growth in future transactions. As a result of lower long-term growth in GRP, the transactions forecast was lowered by 2.4 percent for PCs, 2.0 percent for CVs, and 2.3 percent for total vehicles in the forecast’s outer year of 2054. The change in the GRP forecast and resultant impact on total transactions for the forecast period is shown in **Figure 8**.



### Summary of Trends in Fuel Prices

**Figure 9** portrays actual gasoline and diesel prices for the Central Atlantic region from January 2020 through February 2024. Actual gasoline prices for the East Coast are also shown. They closely mirror those for the Central Atlantic gasoline prices and are shown here because the Energy Information Administration (EIA) only provides monthly forecasts for this larger region. Figure 9 shows the monthly gasoline price forecast through the end of 2025.

As shown, Central Atlantic gasoline and diesel prices have followed generally similar trends throughout this period and have moved in tandem. In March 2020, fuel prices dropped sharply due to the decrease in demand from the COVID-19 pandemic, bottoming out in May before steadily

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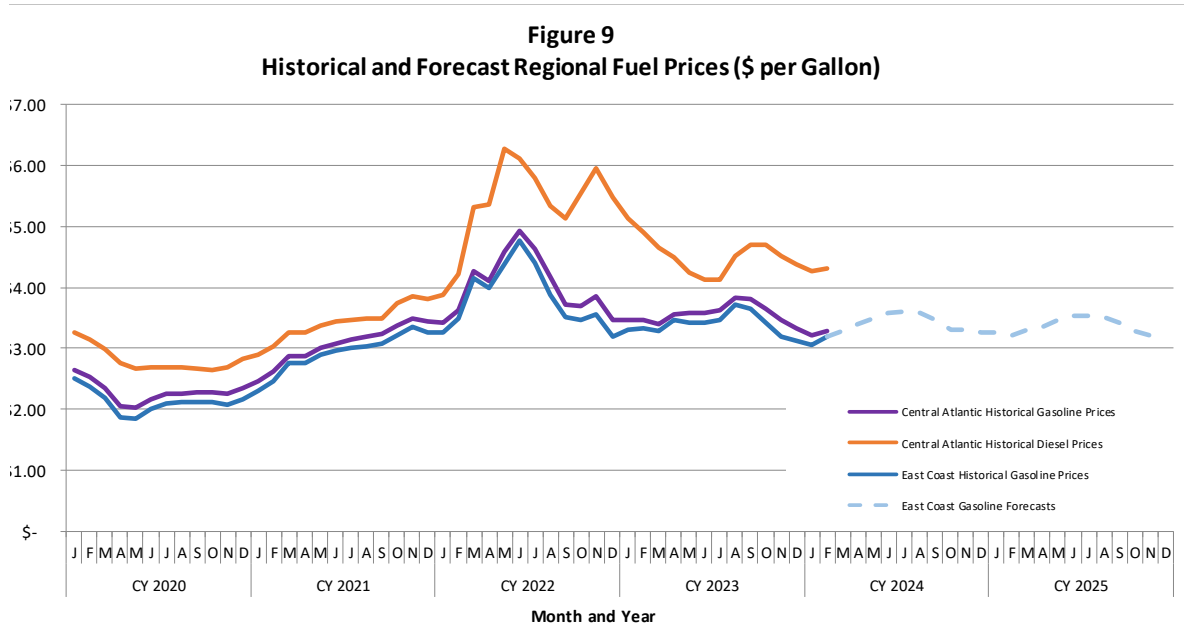
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increasing nearly every month through November 2021. In February 2022, geopolitical tensions contributed to a sharp rise in fuel prices, and prices soared to a peak of \$4.92 for gasoline in June and \$6.26 for diesel in May. In nominal dollars, those fuel prices were the highest recorded in U.S. history. Prices have generally decreased since then, with per-gallon gasoline prices falling as low as \$3.41 in March 2023 before rising through spring and summer, peaking at \$3.84 in August, and falling since. Like gasoline prices, diesel prices fell notably through the spring of 2023 before rising through the summer, reaching \$4.70 per gallon in September, and declining since. In January 2024, per-gallon prices were \$3.21 for gasoline and \$4.25 for diesel.

As noted above, the EIA only forecasts future gasoline prices for the East Coast, which is a region that is larger than, and wholly encompasses, the Central Atlantic region. Historically, East Coast region prices move in tandem with Central Atlantic prices but are approximately 10 to 20 cents lower. As represented by the dashed orange line in Figure 1, the EIA forecasts that the per-gallon price of gasoline on the East Coast will fluctuate between \$3.10 and \$3.60 for 2024 and 2025. In both years, prices are expected to gradually increase throughout the spring and summer and then decline in the fall. Based on historical trends, Central Atlantic prices can be expected to follow the same pattern, but at slightly higher prices.

The February 2024 East Coast per-gallon gasoline prices are about 20 cents higher than forecast by EIA in May 2023. Over the remainder of 2024, the current forecast is up to 50 cents higher each month than the previous forecast. (A 2025 forecast was not available at the time of the 2023 IG Study.) Although these gasoline prices are higher than those assumed in the 2023 IG Study, they are in a similar range and therefore there are no adjustments to the fuel price impacts used in the previous forecast.



Source: U.S. Energy Information Administration, release dates 3/11/2024 (historical) and 3/12/2024 (forecast).

Note: Retail Prices in USD for Regular All Formulations Retail Gasoline and Number 2 Diesel.

Central Atlantic states include Delaware, District of Columbia, Maryland, New Jersey, New York, and Pennsylvania.

East Coast states include Central Atlantic and New England states, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.

## Consumer Confidence

Consumer confidence is an important measure that highlights consumers' confidence in making purchases, willingness to travel, etc. Higher consumer confidence spurs demand for various goods and services, inferring that higher demand results in higher traffic on the roadways. Consumer confidence scores are indexed to the year 1985, for which consumer confidence equaled 100.

**Figure 10** shows the Conference Board Consumer Confidence Index for the period between January 2020 and February 2024. Individual blue bars show index values for each month while the dotted line shows the three-month moving average.

Consumer confidence was strong at the beginning of 2020 prior to the pandemic but fell sharply in the spring, concurrent with the onset of the pandemic. For the remainder of 2020 and throughout 2021 consumer confidence fluctuated significantly, falling as low as 84.8 in August 2020 and reaching as high as 128.9 in June 2021, generally mirroring the national narrative regarding efforts to contain the COVID-19 pandemic.

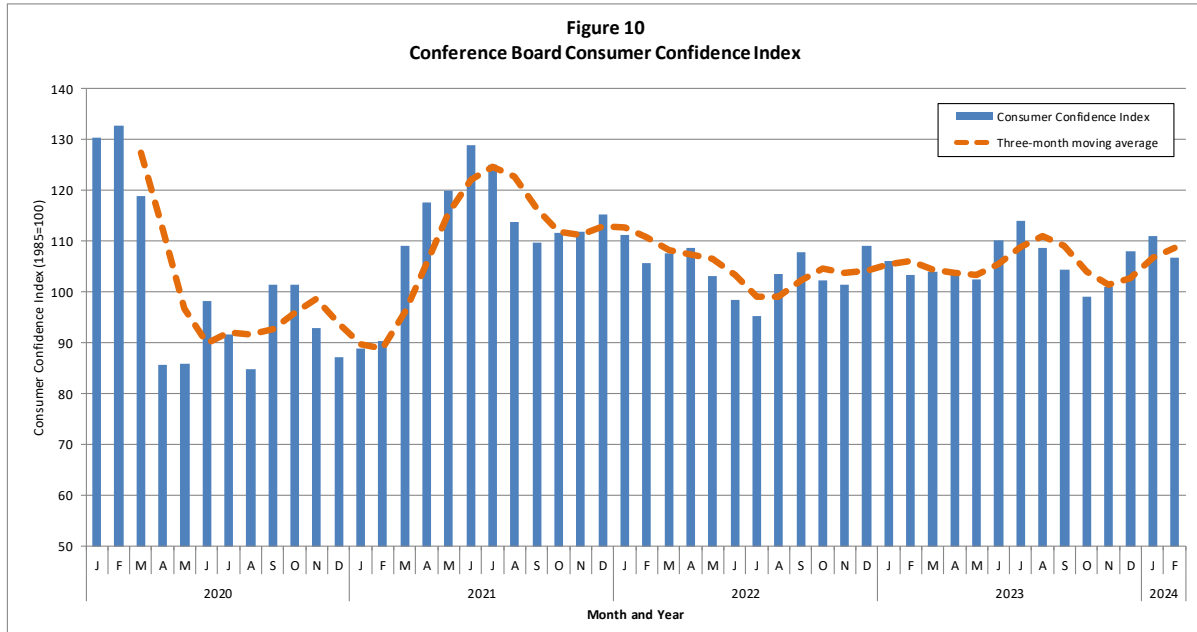
Over the 26 months between January 2022 and February 2024, consumer confidence has stabilized, with an average reading of 105.2 during this period, a low of 95.3 in July 2022, and a high of 114.0 in July 2023. In February 2024, the last month for which data is available, the preliminary consumer confidence reading stood at 106.7. These data points generally align with the other socioeconomic

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data reviewed as part of this forecast in that there was a strong recovery from the pandemic in 2022 with steady and stable growth in 2023 and no expectations of large shocks in 2024.



Source: The Conference Board, release date February 27, 2024

## Actual Versus Estimated Traffic and Toll Revenue

**Table 10** provides a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith’s 2023 IG Study. The analysis period in this table is from April 2023 through January 2024. This 10-month period corresponds to the period for which actual data currently exist but was estimated at the time of the 2023 IG Study.

For the 10-month period shown in Table 10, total system actual PC transactions and revenue exceeded estimates by 1.0 percent and 1.3 percent, respectively. CV transactions and revenue exceeded estimates by 0.5 percent and 0.9 percent, respectively. For all vehicles, actual transactions were 0.9 percent above estimates, while toll revenue overperformed estimates by 1.1 percent.

Table 10 also includes a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith’s 2023 IG Study for each individual Turnpike toll facility. Total transactions for the Ticket System were 1.0 percent higher than the forecast traffic, while actual total revenue was 1.2 percent higher than estimated. For the combined barrier toll facilities, total actual toll transactions exceeded CDM Smith estimates by 0.7 percent and actual toll revenue exceeded estimates by 0.6 percent.



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**Table 10**  
**Comparison of Estimated and Actual Traffic Volumes and Gross Toll Revenue**  
**From April 2023 Through January 2024 (1)**  
 Pennsylvania Turnpike System

Facility	Total Traffic (in Thousands)			Total Gross Toll Revenue (in Thousands)		
	Estimated	Actual	Percent Difference between Actual and Estimated	Estimated	Actual	Percent Difference between Actual and Estimated
<b>Passenger Cars</b>						
Ticket System	102,727	103,845	1.1	\$621,392	\$630,339	1.4
Gateway	2,712	2,754	1.6	22,568	22,911	1.5
Delaware River Bridge	8,558	8,490	(0.8)	59,983	59,779	(0.3)
Turnpike 43	10,510	10,667	1.5	24,534	24,825	1.2
Turnpike 66	5,413	5,399	(0.3)	13,553	13,642	0.7
Northeast Extension (Barrier)	3,520	3,463	(1.6)	5,412	5,261	(2.8)
Turnpike I-376	5,567	5,666	1.8	12,346	12,540	1.6
Turnpike I-576	6,220	6,433	3.4	10,258	10,457	1.9
Barrier Subtotal	42,499	42,872	0.9	\$148,654	\$149,415	0.5
Total System	145,226	146,716	1.0	\$770,046	\$779,754	1.3
<b>Commercial Vehicles</b>						
Ticket System	21,344	21,512	0.8	\$581,828	\$587,002	0.9
Gateway	991	980	(1.0)	25,314	25,447	0.5
Delaware River Bridge	1,552	1,545	(0.4)	35,735	35,937	0.6
Turnpike 43	972	946	(2.7)	5,934	5,840	(1.6)
Turnpike 66	1,085	1,061	(2.3)	6,510	6,403	(1.6)
Northeast Extension (Barrier)	1,128	1,168	3.6	8,919	9,354	4.9
Turnpike I-376	1,357	1,354	(0.2)	5,542	5,512	(0.5)
Turnpike I-576	1,543	1,541	(0.1)	6,709	6,800	1.4
Barrier Subtotal	8,627	8,595	(0.4)	\$94,664	\$95,295	0.7
Total System	29,972	30,107	0.5	\$676,492	\$682,296	0.9
<b>Total Vehicles</b>						
Ticket System	124,072	125,356	1.0	\$1,203,220	\$1,217,340	1.2
Gateway	3,702	3,735	0.9	47,883	48,358	1.0
Delaware River Bridge	10,109	10,035	(0.7)	95,718	95,716	(0.0)
Turnpike 43	11,481	11,613	1.1	30,468	30,665	0.6
Turnpike 66	6,498	6,460	(0.6)	20,063	20,045	(0.1)
Northeast Extension (Barrier)	4,648	4,631	(0.4)	14,332	14,615	2.0
Turnpike I-376	6,924	7,019	1.4	17,888	18,053	0.9
Turnpike I-576	7,763	7,974	2.7	16,967	17,258	1.7
Barrier Subtotal	51,126	51,467	0.7	\$243,318	\$244,710	0.6
Total System	175,198	176,823	0.9	\$1,446,538	\$1,462,050	1.1

(1) These 10 months correspond to the period for which actual data exists, but was estimated at the time of CDM Smith's 2023 IG Study.



## Estimated Traffic and Gross Toll Revenue

Updated traffic and gross toll revenue estimates were developed through FY 2053-54 incorporating the following changes into the forecast. All these changes were described in previous sections.

- Actual traffic and revenue experience through January 2024 (Tables 3-5)
- Revised estimates of E-ZPass + v-toll penetration rates (Table 9)
- Elimination of continued recovery in PC traffic from COVID-19 impacts
- Modified normalization of CV traffic from its pandemic-related height in 2022
- Removal of the probability of a recession having a negative impact on transactions through 2025
- Long-term growth of socioeconomic indicators

Other assumptions remain unchanged from the 2023 IG Study:

- None of the scheduled capital improvement projects will have impacts on transactions or toll revenue within in the next five years (Table 6)
- Future toll rate increase assumptions (Table 8)
- Forecast fuel prices (Figure 9)
- Structure of the CV discount program

**Table 11** shows the estimated total traffic and toll revenue for the Ticket System only. Data for FY 2022-23 reflects a full year of actual experience. Total toll transactions and forecasted to increase from 146.8 million to 168.1 million over the period shown in Table 11, an average annual increase of 0.4 percent. Gross toll revenue increases from \$1.4 billion to \$4.3 billion by FY 2053-54. This amounts to an average annual increase of 3.7 percent, reflecting the impact of normal growth plus annual toll rate increases.

The same information is shown for the Barrier System in **Table 12**. Total annual toll transactions are estimated to grow from 59.5 million to 65.5 million over the period shown, an average annual growth rate of 0.3 percent. Barrier System total revenue is estimated to increase from \$274.4 million to \$857.7 million over the same period, an annual rate of 3.7 percent, reflecting normal growth plus annual toll rate increases.



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**Table 11**  
**Ticket System<sup>(1)</sup>: Estimated Annual Transactions and Gross Toll Revenue**  
**Pennsylvania Turnpike Commission**

Traffic and Toll Revenue in Thousands

Fiscal Year (3)	Annual Traffic (2)			Annual Gross Toll Revenue (2)		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
2022-23 (4)	121,046	25,733	146,779	\$703,728	\$683,556	\$1,387,284
2023-24 (5)	122,869	25,341	148,210	746,011	702,918	1,448,929
2024-25 (6)	123,898	25,096	148,994	777,902	724,501	1,502,403
2025-26	124,696	25,183	149,879	812,942	756,039	1,568,981
2026-27 (7)	125,343	25,432	150,775	845,645	789,782	1,635,427
2027-28	126,454	25,764	152,218	881,214	825,601	1,706,815
2028-29	127,023	25,972	152,995	911,881	857,038	1,768,919
2029-30	127,860	26,237	154,097	945,424	891,715	1,837,139
2030-31	128,654	26,494	155,148	979,820	927,509	1,907,329
2031-32	129,721	26,817	156,538	1,017,469	967,154	1,984,623
2032-33	130,148	27,015	157,163	1,051,584	1,003,387	2,054,971
2033-34	130,909	27,291	158,200	1,089,451	1,044,013	2,133,464
2034-35	131,624	27,571	159,195	1,128,269	1,086,233	2,214,502
2035-36	132,621	27,917	160,538	1,170,751	1,133,078	2,303,829
2036-37	132,917	28,126	161,043	1,208,751	1,175,696	2,384,447
2037-38	133,489	28,408	161,897	1,250,388	1,223,066	2,473,454
2038-39	134,016	28,688	162,704	1,292,954	1,272,276	2,565,230
2039-40	134,822	29,046	163,868	1,339,555	1,326,881	2,666,436
2040-41	134,909	29,258	164,167	1,380,886	1,376,435	2,757,321
2041-42	135,282	29,536	164,818	1,426,218	1,431,297	2,857,515
2042-43	135,591	29,806	165,397	1,472,409	1,487,706	2,960,115
2043-44	136,182	30,140	166,322	1,522,951	1,549,606	3,072,557
2044-45	136,054	30,319	166,373	1,567,372	1,605,387	3,172,759
2045-46	136,206	30,572	166,778	1,616,227	1,667,290	3,283,517
2046-47	136,311	30,823	167,134	1,665,983	1,731,330	3,397,313
2047-48	136,699	31,143	167,842	1,720,601	1,802,302	3,522,903
2048-49	136,365	31,309	167,674	1,768,156	1,866,131	3,634,287
2049-50	136,316	31,556	167,872	1,820,541	1,937,060	3,757,601
2050-51	136,212	31,800	168,012	1,873,761	2,010,449	3,884,210
2051-52	136,394	32,119	168,513	1,932,242	2,091,861	4,024,103
2052-53	135,847	32,278	168,125	1,982,578	2,164,968	4,147,546
2053-54	135,584	32,512	168,096	2,038,091	2,246,284	4,284,375

(1) Ticket System includes the Mainline (I-76/I-276) and Northeast Extension (I-476).

(2) Annual toll rate increases are implemented on or about January 1<sup>st</sup> of each year.

(3) PTC fiscal year ends May 31<sup>st</sup>.

(4) Reflects actual traffic and revenue experience.

(5) Reflects actual experience through January 2024.

(6) Does not reflect ORT Phase 1 (Eastern and Northeast Ticket). ORT conversion is assumed to be revenue neutral.

(7) Does not reflect ORT Phase 2 (Western Ticket). ORT conversion is assumed to be revenue neutral.



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**Table 12**  
**Barrier Systems<sup>(1)</sup>: Estimated Annual Transactions and Gross Toll Revenue**  
**Pennsylvania Turnpike Commission**

Traffic and Toll Revenue in Thousands

Fiscal Year	(3)	Annual Traffic (2)			Annual Gross Toll Revenue (2)		
		Passenger	Commercial	Total	Passenger	Commercial	Total
		Cars	Vehicles	Vehicles	Cars	Vehicles	Vehicles
2022-23	(4,5)	49,309	10,165	59,474	\$164,624	\$109,800	\$274,423
2023-24	(6)	50,503	10,075	60,578	178,495	113,991	292,486
2024-25		50,885	10,081	60,966	188,756	119,030	307,786
2025-26		51,106	10,177	61,283	197,994	125,113	323,107
2026-27		51,216	10,291	61,507	206,001	130,949	336,950
2027-28		51,481	10,433	61,914	214,253	136,827	351,080
2028-29		51,512	10,527	62,039	221,254	141,899	363,153
2029-30		51,649	10,640	62,289	228,938	147,573	376,511
2030-31		51,766	10,758	62,524	236,808	153,425	390,233
2031-32		51,998	10,901	62,899	245,472	159,904	405,376
2032-33		52,009	11,002	63,011	253,333	165,876	419,209
2033-34		52,189	11,141	63,330	262,240	172,658	434,898
2034-35		52,351	11,283	63,634	271,374	179,707	451,081
2035-36		52,631	11,432	64,063	281,426	187,392	468,818
2036-37		52,646	11,498	64,144	290,382	194,188	484,570
2037-38		52,774	11,589	64,363	300,241	201,744	501,985
2038-39		52,884	11,683	64,567	310,342	209,597	519,939
2039-40		53,106	11,807	64,913	321,440	218,324	539,764
2040-41		53,055	11,874	64,929	331,252	226,238	557,490
2041-42		53,114	11,969	65,083	342,048	235,029	577,077
2042-43		53,147	12,060	65,207	353,050	244,094	597,144
2043-44		53,289	12,179	65,468	365,120	254,078	619,198
2044-45		53,161	12,242	65,403	375,692	263,097	638,789
2045-46		53,145	12,327	65,472	387,357	273,128	660,485
2046-47		53,107	12,422	65,529	399,261	283,539	682,800
2047-48		53,183	12,540	65,723	412,378	295,105	707,483
2048-49		52,987	12,599	65,586	423,778	305,566	729,344
2049-50		52,899	12,693	65,592	436,388	317,214	753,602
2050-51		52,804	12,784	65,588	449,230	329,310	778,540
2051-52		52,810	12,911	65,721	463,412	342,771	806,183
2052-53		52,551	12,977	65,528	475,627	354,943	830,570
2053-54		52,405	13,069	65,474	489,170	368,518	857,688

- (1) Barrier System includes Mon/Fayette Expressway (PA 43), Amos K. Hutchinson Bypass (PA 66), Northeast barriers (Clarks and Keyser), Beaver Valley Expressway (I-376), Southern Beltway (PA 576), Delaware River Bridge (New Jersey border), and Gateway Toll Plaza (Ohio border).
- (2) Annual toll rate increases are implemented on or about January 1<sup>st</sup> of each year.
- (3) PTC fiscal year ends May 31<sup>st</sup>.
- (4) Reflects actual traffic and revenue experience.
- (5) Reflects opening of all ramp movements between the Southern Beltway and I-79 in June 2022.
- (6) Reflects actual experience through January 2024.

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**Table 13** presents estimated total combined Ticket and Barrier System transactions, gross toll revenue, and toll discounts and adjustments. The vast majority of discounts and adjustments result from commercial account toll adjustments due to PTC's volume discount program. This program provides a 3.0-percent discount to accounts that accrue \$20,000 or more in monthly tolls. Discounts and adjustments shown in Table 13 assume no changes to the post-paid commercial volume discount program during the forecast period. Actual discounts and adjustments have been slowly increasing over time and amounted to 1.80 percent of CV gross toll revenue in FY 2022-23. The forecast assumes that the adjustment will continue to gradually increase to 2.04 percent of CV gross toll revenue in FY 2031-32 and then remain at that level for the remainder of the forecast period.

As shown in Table 13, total toll transactions are expected to increase from 206.3 million to 233.6 million over the period shown. This amounts to an average annual growth rate of 0.4 percent. Total net toll revenue is estimated to grow from approximately \$1.6 billion in FY 2022-23 to \$5.1 billion by FY 2053-54. This reflects an average annual growth rate in gross toll revenue of 3.7 percent which reflects the impact of normal growth plus annual toll rate increases.

**Table 14** compares the current traffic and net toll revenue forecast with the forecast developed in the 2023 IG Study. As shown, actual total transactions for FY 2022-23 were 0.2 percent higher than forecast in the 2023 IG Study. Over the next five fiscal years, through FY 2027-28, the current forecast estimates that transactions will be between 0.3 and 1.5 percent higher each year than previously estimated. This is mostly due to the recent overperformance of the system as well as removal of the assumed recessionary impact in the 2023 IG study. However, all but one year of the remainder of the forecast period now has fewer transactions than in the 2023 IG Study. The downward revision is less than 0.1 percent lower in FY 2028-29 and then generally grows more negative in most years, eventually reaching a 2.1-percent difference in the FY 2052-53, which was the last year included in the 2023 IG Study forecast. Previously detailed updates to the econometric forecast account for most of the long-term difference in the forecast.

Differences between the 2023 IG Study and the current forecast are somewhat greater for annual net toll revenue. Although annual net toll revenue in FY 2022-23 underperformed the 2023 IG Study forecast by 0.1 percent, the current forecast is 1.6 percent higher in FY 2023-24 and 0.3 percent higher in FY 2024-25. Beginning in FY 2025-26, revenue is forecast to be 0.7 percent lower than estimated in the 2023 IG Study, with the difference generally growing larger each year through FY 2052-53, when it reaches 3.1 percent.



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**Table 13**  
**Total System: Estimated Annual Transactions and Gross Toll Revenue**  
**Pennsylvania Turnpike Commission**

Traffic and Toll Revenue in Thousands

Fiscal Year (2)	Annual Traffic (1)			Annual Gross Toll Revenue (1)			Discounts and Adjustments	Net Toll Revenue
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles		
2022-23 (3,4)	170,355	35,898	206,253	\$868,352	\$793,355	\$1,661,707	(\$14,258)	\$1,647,449
2023-24 (5)	173,372	35,416	208,788	924,506	816,909	1,741,415	(15,117)	1,726,298
2024-25 (6)	174,783	35,177	209,960	966,658	843,531	1,810,189	(15,833)	1,794,356
2025-26	175,802	35,360	211,162	1,010,936	881,152	1,892,088	(16,894)	1,875,194
2026-27 (7)	176,559	35,723	212,282	1,051,646	920,731	1,972,377	(17,881)	1,954,496
2027-28	177,935	36,197	214,132	1,095,467	962,428	2,057,895	(18,933)	2,038,962
2028-29	178,535	36,499	215,034	1,133,135	998,937	2,132,072	(19,900)	2,112,172
2029-30	179,509	36,877	216,386	1,174,362	1,039,288	2,213,650	(20,863)	2,192,787
2030-31	180,420	37,252	217,672	1,216,628	1,080,934	2,297,562	(21,858)	2,275,704
2031-32	181,719	37,718	219,437	1,262,941	1,127,058	2,389,999	(22,962)	2,367,037
2032-33	182,157	38,017	220,174	1,304,917	1,169,263	2,474,180	(23,820)	2,450,360
2033-34	183,098	38,432	221,530	1,351,691	1,216,671	2,568,362	(24,786)	2,543,576
2034-35	183,975	38,854	222,829	1,399,643	1,265,940	2,665,583	(25,790)	2,639,793
2035-36	185,252	39,349	224,601	1,452,177	1,320,470	2,772,647	(26,902)	2,745,745
2036-37	185,563	39,624	225,187	1,499,133	1,369,884	2,869,017	(27,907)	2,841,110
2037-38	186,263	39,997	226,260	1,550,629	1,424,810	2,975,439	(29,026)	2,946,413
2038-39	186,900	40,371	227,271	1,603,296	1,481,873	3,085,169	(30,189)	3,054,980
2039-40	187,928	40,853	228,781	1,660,995	1,545,205	3,206,200	(31,478)	3,174,722
2040-41	187,964	41,132	229,096	1,712,138	1,602,673	3,314,811	(32,650)	3,282,161
2041-42	188,396	41,505	229,901	1,768,266	1,666,326	3,434,592	(33,946)	3,400,646
2042-43	188,738	41,866	230,604	1,825,459	1,731,800	3,557,259	(35,279)	3,521,980
2043-44	189,471	42,319	231,790	1,888,071	1,803,684	3,691,755	(36,744)	3,655,011
2044-45	189,215	42,561	231,776	1,943,064	1,868,484	3,811,548	(38,063)	3,773,485
2045-46	189,351	42,899	232,250	2,003,584	1,940,418	3,944,002	(39,531)	3,904,471
2046-47	189,418	43,245	232,663	2,065,244	2,014,869	4,080,113	(41,047)	4,039,066
2047-48	189,882	43,683	233,565	2,132,979	2,097,407	4,230,386	(42,728)	4,187,658
2048-49	189,352	43,908	233,260	2,191,934	2,171,697	4,363,631	(44,243)	4,319,388
2049-50	189,215	44,249	233,464	2,256,929	2,254,274	4,511,203	(45,925)	4,465,278
2050-51	189,016	44,584	233,600	2,322,991	2,339,759	4,662,750	(47,666)	4,615,084
2051-52	189,204	45,030	234,234	2,395,654	2,434,632	4,830,286	(49,599)	4,780,687
2052-53	188,398	45,255	233,653	2,458,205	2,519,911	4,978,116	(51,335)	4,926,781
2053-54	187,989	45,581	233,570	2,527,261	2,614,802	5,142,063	(53,269)	5,088,794

(1) Annual toll rate increases are implemented on or about January 1<sup>st</sup> of each year.

(2) PTC fiscal year ends May 31<sup>st</sup>.

(3) Reflects actual traffic and revenue experience.

(4) Reflects opening of all ramp movements between the Southern Beltway and I-79 in June 2022.

(5) Reflects actual experience through January 2024.

(6) Does not reflect ORT Phase 1 (Eastern and Northeast Ticket). ORT conversion is assumed to be revenue neutral.

(7) Does not reflect ORT Phase 2 (Western Ticket). ORT conversion is assumed to be revenue neutral.



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**Table 14**  
**Comparison of New Traffic and Revenue**  
**Estimates with those from the 2023 IG Study**  
**Total System**  
**Pennsylvania Turnpike**

Traffic and Toll Revenue in Thousands

Fiscal Year (1)	Total Annual Transactions			Annual Net Toll Revenue		
	Current Estimates (2)	2023 IG Study (3)	Percent Difference	Current Estimates (2)	2023 IG Study (3)	Percent Difference
2022-23	206,253	205,865	0.2	\$1,647,449	\$1,649,638	(0.1)
2023-24	208,788	205,613	1.5	1,726,298	1,699,910	1.6
2024-25	209,960	207,557	1.2	1,794,356	1,788,716	0.3
2025-26	211,162	210,112	0.5	1,875,194	1,887,984	(0.7)
2026-27	212,282	211,903	0.2	1,954,496	1,974,550	(1.0)
2027-28	214,132	213,490	0.3	2,038,962	2,057,046	(0.9)
2028-29	215,034	215,066	(0.0)	2,112,172	2,137,252	(1.2)
2029-30	216,386	216,547	(0.1)	2,192,787	2,220,069	(1.2)
2030-31	217,672	217,970	(0.1)	2,275,704	2,305,414	(1.3)
2031-32	219,437	219,349	0.0	2,367,037	2,393,564	(1.1)
2032-33	220,174	220,781	(0.3)	2,450,360	2,485,683	(1.4)
2033-34	221,530	222,319	(0.4)	2,543,576	2,582,246	(1.5)
2034-35	222,829	223,801	(0.4)	2,639,793	2,681,993	(1.6)
2035-36	224,601	225,211	(0.3)	2,745,745	2,784,893	(1.4)
2036-37	225,187	226,533	(0.6)	2,841,110	2,890,948	(1.7)
2037-38	226,260	227,797	(0.7)	2,946,413	3,000,426	(1.8)
2038-39	227,271	229,000	(0.8)	3,054,980	3,113,426	(1.9)
2039-40	228,781	230,145	(0.6)	3,174,722	3,230,070	(1.7)
2040-41	229,096	231,227	(0.9)	3,282,161	3,350,351	(2.0)
2041-42	229,901	232,239	(1.0)	3,400,646	3,474,166	(2.1)
2042-43	230,604	233,163	(1.1)	3,521,980	3,601,126	(2.2)
2043-44	231,790	233,993	(0.9)	3,655,011	3,731,058	(2.0)
2044-45	231,776	234,759	(1.3)	3,773,485	3,864,792	(2.4)
2045-46	232,250	235,462	(1.4)	3,904,471	4,002,431	(2.4)
2046-47	232,663	236,099	(1.5)	4,039,066	4,144,066	(2.5)
2047-48	233,565	236,674	(1.3)	4,187,658	4,289,809	(2.4)
2048-49	233,260	237,183	(1.7)	4,319,388	4,439,762	(2.7)
2049-50	233,464	237,631	(1.8)	4,465,278	4,594,032	(2.8)
2050-51	233,600	238,016	(1.9)	4,615,084	4,752,725	(2.9)
2051-52	234,234	238,336	(1.7)	4,780,687	4,915,936	(2.8)
2052-53	233,653	238,594	(2.1)	4,926,781	5,083,760	(3.1)
2053-54	233,570			5,088,794		

(1) PTC fiscal year ends May 31.

(2) Reflects actual experience through May 2022.

(3) Reflects actual traffic and revenue experience through March 2021.



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**Table 15** summarizes the full net revenue forecast, including written off bad debt expenses. The bad debt expense accounts for uncollectable TBP tolls that are written off and subtract from net toll revenue. As transactions and revenue are estimated to grow each year, so too does bad debt expense. In FY 2022-23 bad debt expense was \$114.0 million, representing 42.8 of TBP revenue. Analyses conducted by CDM Smith indicate that the bad debt expense proportion of TBP revenue will grow further, reaching 48.6% of TBP invoices that will not be paid by FY 2028-29 and stabilizing at that level for the remainder of the forecast period. As a result, bad debt expense is estimated to grow to \$346.6 million in FY 2053-54. Total net toll revenue minus the video bad debt expense is estimated to grow from approximately \$1.5 billion in FY 2022-23 to \$4.7 billion by FY 2053-54.



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**Table 15**  
**Total System: Estimated Annual Video Revenue Leakage**  
 Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

<u>Fiscal Year</u> (2)	<u>Net Toll Revenue</u> (1)	<u>Estimated Video Revenue Bad Debt Expense</u>	<u>Net Toll Revenue Minus Video Bad Debt Expense</u>
2022-23 (3,4)	\$1,647,449	(\$113,993)	\$1,533,455
2023-24 (5)	1,726,298	(127,715)	1,598,582
2024-25 (6)	1,794,356	(128,200)	1,666,156
2025-26	1,875,194	(129,370)	1,745,824
2026-27 (7)	1,954,496	(134,197)	1,820,299
2027-28	2,038,962	(141,256)	1,897,706
2028-29	2,112,172	(147,812)	1,964,360
2029-30	2,192,787	(153,619)	2,039,168
2030-31	2,275,704	(159,311)	2,116,393
2031-32	2,367,037	(165,551)	2,201,486
2032-33	2,450,360	(171,263)	2,279,097
2033-34	2,543,576	(177,625)	2,365,951
2034-35	2,639,793	(184,178)	2,455,615
2035-36	2,745,745	(191,358)	2,554,387
2036-37	2,841,110	(197,849)	2,643,261
2037-38	2,946,413	(204,975)	2,741,438
2038-39	3,054,980	(212,302)	2,842,678
2039-40	3,174,722	(220,338)	2,954,384
2040-41	3,282,161	(227,569)	3,054,592
2041-42	3,400,646	(235,504)	3,165,142
2042-43	3,521,980	(243,612)	3,278,368
2043-44	3,655,011	(252,468)	3,402,543
2044-45	3,773,485	(260,378)	3,513,107
2045-46	3,904,471	(269,075)	3,635,396
2046-47	4,039,066	(277,988)	3,761,078
2047-48	4,187,658	(287,774)	3,899,884
2048-49	4,319,388	(296,465)	4,022,923
2049-50	4,465,278	(306,038)	4,159,240
2050-51	4,615,084	(315,839)	4,299,245
2051-52	4,780,687	(326,616)	4,454,071
2052-53	4,926,781	(336,122)	4,590,659
2053-54	5,088,794	(346,610)	4,742,184

(1) Annual toll rate increases are implemented on or about January 1<sup>st</sup> of each year.

(2) PTC fiscal year ends May 31<sup>st</sup>.

(3) Reflects actual traffic and revenue experience.

(4) Reflects opening of all ramp movements between the Southern Beltway and I-79 in June 2022.

(5) Reflects actual experience through January 2024.

(6) Does not reflect ORT Phase 1 (Eastern and Northeast Ticket). ORT conversion is assumed to be revenue neutral.

(7) Does not reflect ORT Phase 2 (Western Ticket). ORT conversion is assumed to be revenue neutral.





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## **Fiduciary 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 Pennsylvania Turnpike Commission (PTC). CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

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

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

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

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



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

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Sincerely,

A handwritten signature in black ink that reads "Scott A. Allaire".

Scott Allaire  
Vice President  
CDM Smith Inc.

A handwritten signature in black ink that reads "Yogesh Patel".

Yogesh Patel, AICP, PMP  
Associate  
CDM Smith Inc.