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December 18, 2020

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

Subject: Pennsylvania Turnpike Commission 6-Month Update to 2020 Traffic and Toll Revenue Bring Down Letter

Dear Mr. Dreher:

The Pennsylvania Turnpike Commission (PTC or Commission) asked CDM Smith to prepare this *6-Month Update to the 2020 Traffic and Toll Revenue Bring Down Letter* (6-Month Update) to be used in support of the Commission's ongoing capital improvement program and other funding requirements. This letter provides an update to the *2020 Traffic and Toll Revenue Bring Down Letter* (2020 Bring Down Letter), dated May 29, 2020, which in turn was an update to the 2019 Bring Down Letter, dated April 29, 2019, that updated the *2018 Traffic and Toll Revenue Forecast Study* (2018 Forecast Study), dated April 20, 2018.

The 2020 Bring Down Letter included actual data through April 2020 and presented traffic and gross toll revenue forecasts from fiscal year (FY) 2019-20 through FY 2049-50. A fiscal year runs from June 1 through May 31. Actual traffic and revenue data were available through October 2020 for this 6-Month Update, as such the forecast period for this analysis extends from FY 2020-21 through FY 2049-50. This report will provide a summary of differences between the current traffic and revenue forecast and that provided in the 2020 Bring Down Letter.

The updated forecasts reflect the following changes from the 2020 Bring Down Letter:

- E-ZPass market share estimates over the forecast period were reviewed and updated as needed.
- Actual traffic and toll revenue data were updated to include information through October 2020.
- All facilities now use all-electronic tolling (AET) following PTC's decision to make permanent the suspension of cash collection that was implemented in March and June of 2020 as a public health measure to combat the spread of the corona virus. The 2020 Bring Down Letter



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assumed the last two facilities that still accepted cash payments, the Ticket System and the Mon/Fayette Expressway (MFE), would convert to AET in October 2021.

- Due to the conversion of the Ticket System and MFE to AET, additional non-revenue transactions that were previously not reported will now be included in transaction totals. Accordingly, transaction forecasts were adjusted slightly upwards to account for this. These additional non-revenue transactions will have no impact on revenue.
- Revenue forecasts were adjusted to account for the addition of a registered video account (RVA) toll rate tier beginning on January 3, 2021. RVA accounts will provide a 15-percent discount off of the video rate for non-ETC customers who pre-register their vehicle with PTC and provide electronic payment information, allowing PTC to process payments automatically without having to send billing invoices.
- In the current analysis both E-ZPass and video toll rates are assumed to increase by six percent in January 2021 at all locations; in addition, video toll rates for the Ticket System and MFE are assumed to increase by an additional 45 percent (this will then make the toll differential between E-ZPass and video rates at these two locations generally consistent with other toll locations). In the 2020 Bring Down Letter the toll increases just discussed were assumed to be implemented in October 2020 instead of January 2021. All toll rate increase assumptions for January 2022 and beyond are unchanged between the two reports.
- A detailed review of COVID-19 related impacts was conducted based on an additional six months of actual data. Revised COVID-19 impacts have now been applied to the forecasts through FY 2025-26. As with the previous forecast, no COVID-19 impacts are assumed after FY 2025-26.
- A review of scheduled major roadway improvements was conducted to determine if there have been any changes since completion of the 2020 Bring Down Letter. This review concluded that the list of committed roadway projects has not changed since the 2020 Bring Down Letter, although the timing of some have been adjusted. This will be discussed in the Committed Roadway Improvements section of this report.

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

It is important to note that the intent of this 6-Month Update is to review and revise, if warranted, the short-term forecasts developed as part of the 2020 Bring Down Letter. Any adjustments would be made based on the six months of new actual traffic and toll revenue experience since the 2020 Bring Down Letter was completed, including COVID-19 impacts, as well as revised assumptions summarized in the bullet points above.



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The underlying socioeconomic trends and forecasts for Pennsylvania, the surrounding states, and the United States that formed the basis for the long-term traffic and toll revenue forecasts are provided in the 2018 Forecast Study.

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 5, 2020. 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.

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; 45% surcharge over cash rate added to video rate
1/5/2020	6.0	6.0	No increase on BVE, AKH, or Gateway

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, 2004, and 2009. 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 the ensuing three years (2012, 2013, and 2014) further increasing the differential between cash and E-ZPass toll rates.

Toll rate increases have occurred annually since 2009, occurring on or close to January 1 of each year. Since 2015, the percent toll rate increases have been identical for cash and E-ZPass. In 2015 the toll rates increased by 5.0 percent over the prior year. From 2016 to 2020, toll rates increased by 6.0 percent annually for both cash/video and E-ZPass.

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. However, video toll rates on the Ticket System and MFE do not currently have a markup over the prior cash rate, as these AET conversions occurred ahead of schedule due to the COVID-19 pandemic. The scheduled January 3, 2021 toll increase will institute this 45-percent surcharge on the Ticket System and MFE.

It is assumed that annual toll rate increases will occur through the forecast period, as described in the section Actual and Assumed Toll Rate Increases and listed in Table 13.

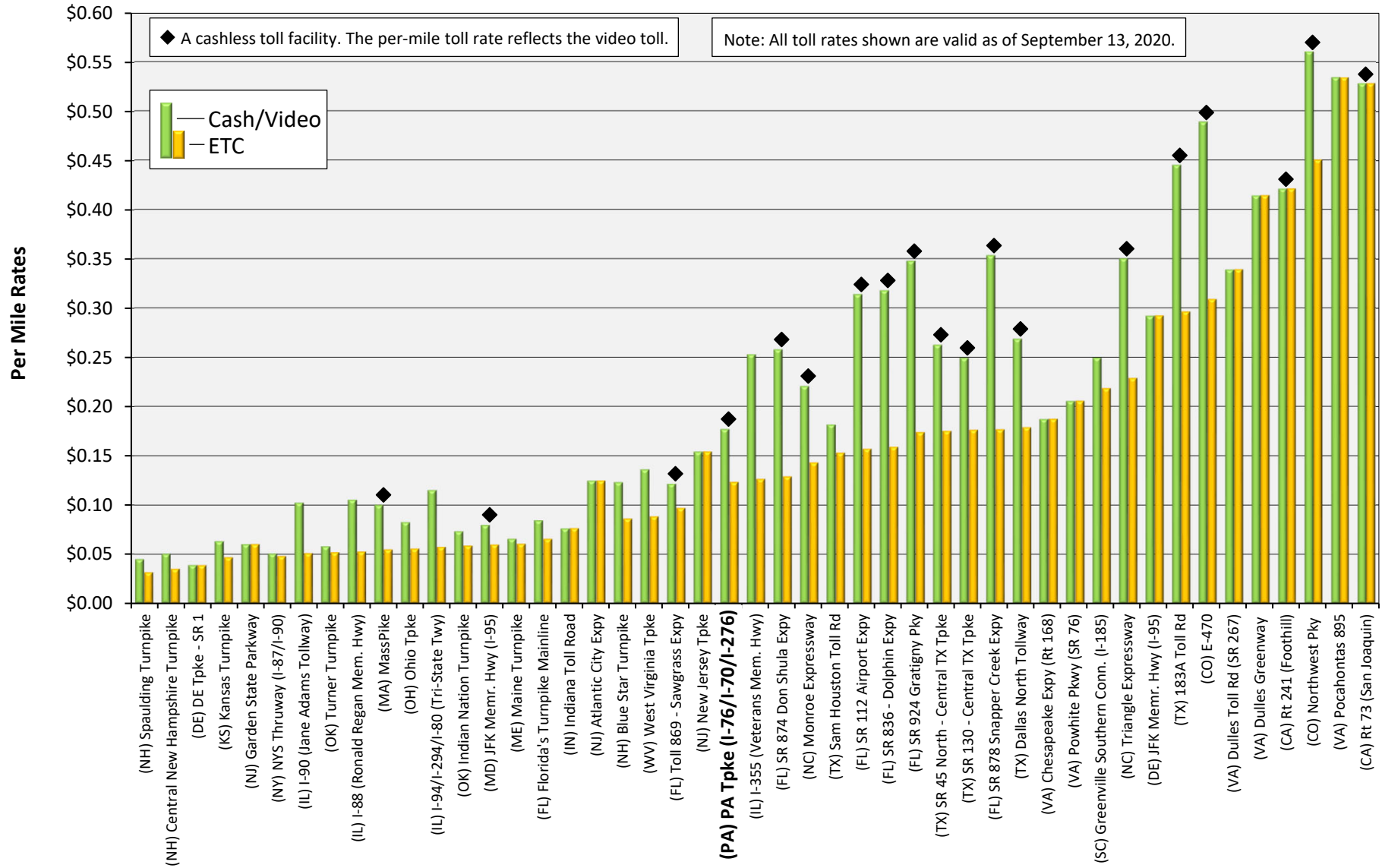
Figures 1 and 2 show the 2020 per-mile toll rates for a through trip on 47 U.S. toll facilities, for passenger cars (PCs) and 5-axle commercial vehicles (CVs), respectively. Per-mile rates are shown for both cash/video and ETC transactions in each figure. If a facility is all electronic (does not accept cash payments), the video toll rate is shown as the equivalent of a cash toll rate. All ETC 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 between New Jersey and Ohio. Figure 1 shows that even with the 12 consecutive annual toll increases since 2009, the PC per-mile toll rates on the Pennsylvania Turnpike System, at 12 cents per mile for E-ZPass customers and 18 cents per mile for video customers, are still very reasonably priced compared to other toll facilities in the U.S.

Toll rates for 5-axle CVs (represented by weight class 6 for the Pennsylvania Turnpike Mainline) are equivalent to 47 cents per mile for E-ZPass and 67 cents per mile for video transactions for a through trip on the Pennsylvania Turnpike Mainline. It should be remembered that the majority of both PC and CV trips are made using the more cost-effective E-ZPass payment method.

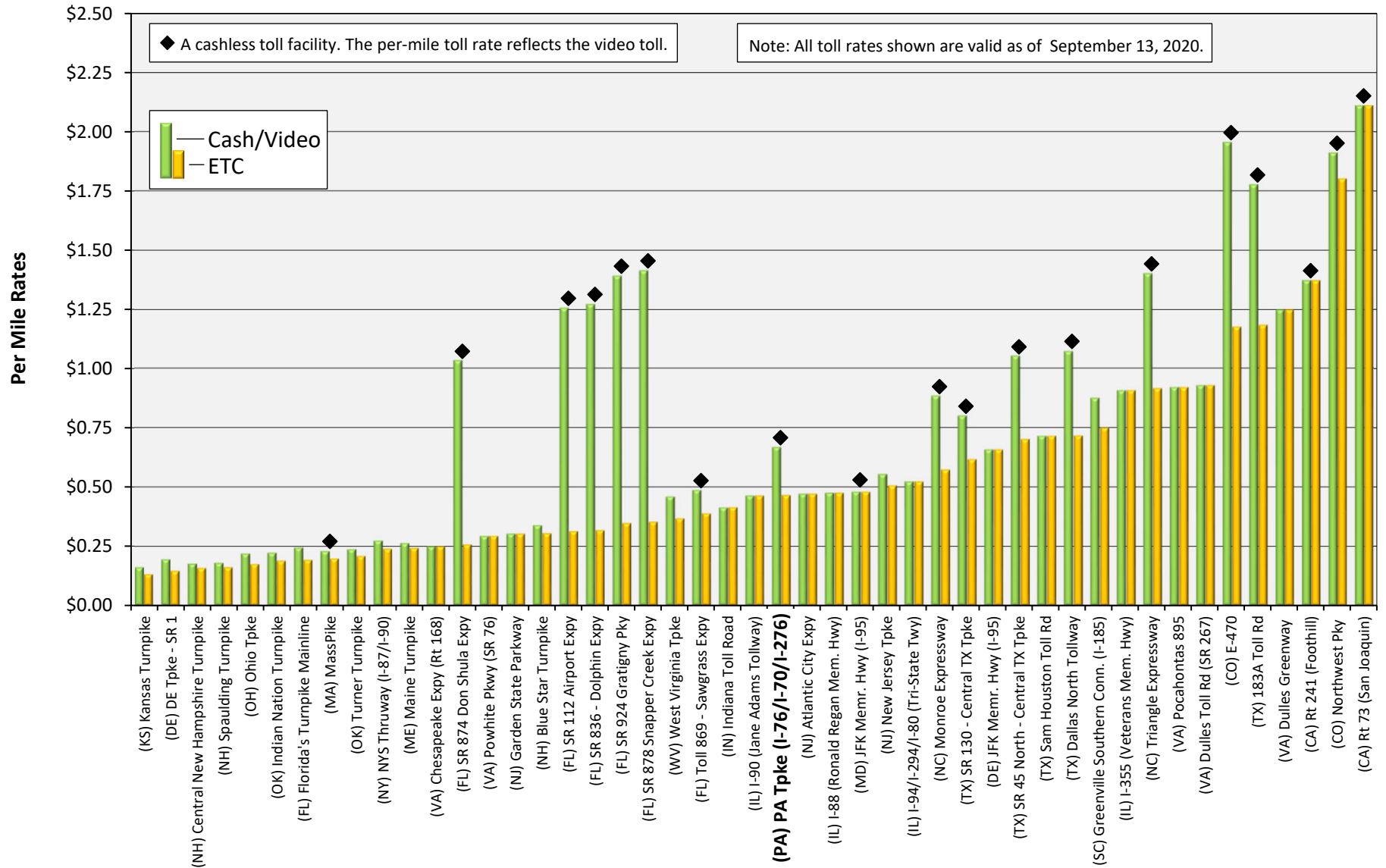


PTC 6-month Update to 2020 Traffic and Toll Revenue Bring Down Letter



**COMPARISON OF 2020 PASSENGER CAR PER-MILE THROUGH TRIP TOLL RATES
(DATA SORTED BY ETC TOLL RATES)**





**COMPARISON OF 2020 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 2019-20. Notably, this table excludes non-revenue transactions from PTC's non-AET facilities. The Pennsylvania Turnpike System is a large, mature system that has demonstrated long-term growth in transactions and toll revenue. Between FY 1999-2000 and FY 2009-10 there were only three toll rate increases (2004, 2009, 2010) and Turnpike transactions and gross toll revenue grew by an average annual rate of 1.5 percent and 6.9 percent, respectively. Conversely, in the 10 years from FY 2009-10 to FY 2019-20 there were toll rate increases every year. During this period Turnpike transactions fell by 0.3 percent annually, while turnpike revenue grew by 6.0 percent annually. In the most recently completed fiscal year (2019-20) transactions declined by 10.6 percent while revenue declined 3.4 percent. These declines are attributed to the COVID-19 pandemic, which began affecting traffic and revenue in March 2020.



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

Fiscal Year (1)	Transactions						Gross Toll Revenue					
	Cars		Trucks		Total	Percent Change Over Prior Year	Cars		Trucks		Total	Percent Change Over Prior Year
	Percent Change Over Prior Year	Percent Change Over Prior Year	Percent Change Over Prior Year	Percent Change Over Prior Year	Percent Change Over Prior Year		Percent Change Over Prior Year	Percent Change Over Prior Year	Percent Change Over Prior Year	Percent Change Over 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	163,599	0.6	22,933	(2.8)	186,531	0.2	415,981	16.7	302,057	16.5	718,038	16.6
2010-11	165,231	1.0	23,812	3.8	189,043	1.3	435,752	4.8	328,105	8.6	763,856	6.4
2011-12	164,955	(0.2)	24,125	1.3	189,080	0.0	455,133	4.4	342,646	4.4	797,779	4.4
2012-13	163,690	(0.8)	24,207	0.3	187,897	(0.6)	471,514	3.6	350,226	2.2	821,740	3.0
2013-14	163,788	0.1	24,891	2.8	188,679	0.4	497,671	5.5	368,395	5.2	866,066	5.4
2014-15	166,192	1.5	26,144	5.0	192,336	1.9	533,054	7.1	401,197	8.9	934,251	7.9
2015-16 (2)	171,569	3.2	27,319	4.5	198,887	3.4	588,295	10.4	443,325	10.5	1,031,620	10.4
2016-17 (3,4)	172,799	0.7	27,703	1.4	200,501	0.8	638,787	8.6	476,188	7.4	1,114,975	8.1
2017-18 (5)	172,512	(0.2)	28,650	3.4	201,162	0.3	678,741	6.3	524,418	10.1	1,203,158	7.9
2018-19 (6,7)	173,429	0.5	29,625	3.4	203,054	0.9	740,578	9.1	594,808	13.4	1,335,385	11.0
2019-20 (8,9)	152,301	(12.2)	29,269	(1.2)	181,570	(10.6)	683,918	(7.7)	605,642	1.8	1,289,561	(3.4)

Fiscal Year	Average Annual Percent Change					
	Transactions			Gross Toll Revenue		
	Cars	Trucks	Total	Cars	Trucks	Total
FY 1999-2000 - FY 2009-10	1.7	0.7	1.5	7.9	5.8	6.9
FY 2009-10 - FY 2019-20	(0.7)	2.5	(0.3)	5.1	7.2	6.0
FY 1994-95 - FY 2019-20	1.2	2.5	1.4	5.8	6.3	6.0

- (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.

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



Monthly Transactions and Gross Toll Revenue Trends

Tables 3 through 12 present recent monthly transaction and gross toll revenue trends from FY 2017-18 through October 2020 for all PTC facilities. The information is provided for PCs, CVs, and total vehicles. For comparative purposes, subtotals are provided for June through October for each fiscal year. The facilities are summarized in the following order:

- Table 3 – the total Turnpike System (comprised of all the facilities listed below);
- 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);
- Table 6 – Turnpike 43 (Mon/Fayette Expressway) (MFE);
- Table 7 – Turnpike 66 (Amos K. Hutchinson Bypass) (AKH);
- Table 8 – Northeast Extension (I-476) barrier plazas;
- Table 9 – Turnpike I-376 (Beaver Valley Expressway) (BVE);
- Table 10 – Turnpike I-576 (Southern Beltway – Findlay Connector);
- Table 11 – Delaware River Bridge (DRB); and
- Table 12 – Gateway Toll Plaza.

As shown in Table 3, total systemwide gross toll revenue increased by 11.0 percent in FY 2018-19 and decreased by 3.4 percent in FY 2019-20, the last three months of which were impacted by the COVID-19 pandemic. Year-to-date (June through October 2020) toll revenue has declined by 16.1 percent compared to the same period in the prior year. CV toll revenue decreased by 1.1 percent and PC toll revenue decreased by 27.3 percent from June through October 2020 compared to the same time period in the prior year. These significant declines are compared to the period in FY 2019-20 unaffected by COVID-19.

It is important to note, however, that the negative impacts of COVID-19 have diminished greatly over time. In April 2020 (which includes the first full month of COVID-19 impacts), total gross toll revenue was 49.2 percent lower than the same month in 2019. That negative impact has decreased each month since, such that October 2020 gross toll revenue was only 9.8 percent lower than the same month in the prior year. As shown in Table 3, PCs have been affected far more greatly by COVID-19 than have CVs. Thus far in FY 2020-21, PC gross toll revenue has declined 27.3 percent while CV gross toll revenue has declined only 1.1 percent. In fact, CV gross toll revenue has actually been slightly positive in September and October 2020 compared to the same months in 2019.



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Table 3
Total Turnpike System - Monthly Transaction and Revenue Trends

Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	15,438	(0.5)	15,361	(1.1)	15,187	(30.1)	10,616	18,013	(0.3)	17,958	(1.2)	17,744	(24.8)	13,351
July	15,522	0.3	15,566	0.1	15,588	(21.1)	12,292	17,942	1.1	18,138	0.6	18,251	(17.3)	15,098
August	15,957	1.1	16,134	(0.4)	16,071	(20.2)	12,824	18,619	1.5	18,889	(0.5)	18,793	(17.1)	15,587
September	14,724	(1.5)	14,503	0.5	14,582	(16.0)	12,248	17,156	(1.4)	16,921	1.2	17,121	(12.3)	15,021
October	15,221	1.2	15,396	(0.0)	15,389	(17.1)	12,758	17,768	2.0	18,128	0.2	18,159	(14.0)	15,615
November	14,317	(0.5)	14,242	(0.3)	14,193			16,640	(0.0)	16,633	(0.2)	16,597		
December	13,746	1.7	13,982	(0.5)	13,911			15,891	1.8	16,180	0.0	16,182		
January	12,542	(0.3)	12,504	2.6	12,826			14,718	0.4	14,772	2.8	15,179		
February	11,958	(0.2)	11,930	4.4	12,459			13,992	0.1	14,003	4.5	14,640		
March	13,591	3.1	14,018	(32.5)	9,463			15,886	3.2	16,389	(27.6)	11,873		
April	14,259	1.2	14,426	(66.4)	4,845			16,646	2.0	16,975	(59.5)	6,866		
May	15,237	0.9	15,367	(49.3)	7,791			17,893	1.0	18,065	(43.7)	10,164		
Total Year	172,512	0.5	173,429	(12.2)	152,301			201,162	0.9	203,054	(10.6)	181,570		
Jun - Oct	76,862	0.1	76,960	(0.2)	76,812	(20.9)	60,739	89,497	0.6	90,035	0.0	90,068	(17.1)	74,672

Month	Commercial Vehicles			Total Revenue (in \$1,000s)			
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	544,643	11.5	549,757	5.4	52,463	(0.6)	52,165
July	41,947	17.0	49,069	10.8	54,375	(3.1)	52,693
August	46,210	13.3	52,369	5.9	55,447	(3.5)	53,492
September	42,371	11.7	47,311	8.5	51,328	1.3	52,003
October	44,599	17.0	52,185	6.0	55,318	0.5	55,607
November	40,944	15.0	47,087	2.5	48,255		
December	39,000	11.9	43,630	8.3	47,235		
January	42,222	14.3	48,261	8.1	52,171		
February	40,130	12.4	45,096	8.9	49,120		
March	45,627	13.4	51,729	(5.4)	48,928		
April	46,057	14.6	52,793	(20.2)	42,127		
May	50,666	9.6	55,522	(12.0)	48,876		
Total Year	552,418	13.4	559,808	1.8	560,562		
Jun - Oct	219,771	14.1	250,690	7.3	268,931	(1.1)	265,959

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$61,877	6.5	\$65,886	8.9	\$71,743	(38.6)	\$44,023	\$106,521	8.6	\$115,643	7.4	\$124,206	(22.6)	\$96,188
July	65,722	5.3	69,178	9.8	75,990	(31.2)	52,311	107,669	9.8	118,247	10.2	130,365	(19.5)	105,004
August	64,611	9.2	70,545	9.6	77,351	(25.6)	57,533	110,821	10.9	122,914	8.0	132,798	(16.4)	111,025
September	56,620	6.6	60,348	8.0	65,184	(21.8)	51,000	98,991	8.8	107,658	8.2	116,512	(11.6)	103,003
October	57,806	6.6	61,611	9.7	67,615	(18.3)	55,274	102,405	11.1	113,795	8.0	122,933	(9.8)	110,881
November	55,122	7.3	59,156	8.3	64,068			96,066	10.6	106,243	5.7	112,323		
December	52,345	9.6	57,377	10.8	63,565			91,344	10.6	101,007	9.7	110,800		
January	46,741	9.0	50,969	11.5	56,826			88,964	11.5	99,230	9.8	108,997		
February	44,576	11.8	49,844	11.1	55,386			84,707	12.1	94,940	10.1	104,507		
March	53,737	14.3	61,426	(38.8)	37,574			99,364	13.9	113,155	(23.6)	86,502		
April	57,201	11.8	63,940	(73.2)	17,157			103,259	13.0	116,733	(49.2)	59,283		
May	62,381	12.7	70,298	(55.2)	31,458			113,047	11.3	125,820	(36.2)	80,335		
Total Year	\$678,741	9.1	\$740,578	(7.7)	\$683,918			\$1,203,158	11.0	\$1,335,385	(8.4)	\$1,289,561		
Jun - Oct	306,636	6.8	327,567	9.3	357,884	(27.3)	\$260,141	526,408	9.8	578,257	8.4	626,815	(16.1)	\$526,101

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET conversion was implemented on Turnpike I-376 Beaver Valley Expressway in May 2017.
 (6) AET conversion and vehicle classification changes were implemented on the Northeast Extension Barrier facilities in April 2018.
 (7) AET conversion and vehicle classification changes were implemented on the Turnpike I-576 Friday Connector in June 2018.
 (8) AET conversion was implemented on Turnpike 66 Amos K. Hutchinson Bypass and Gateway Toll Plaza in October 2019.
 (9) AET conversion was implemented on the Ticket System and Mohr/Payette Expressway in June 2020.





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Table 4
Ticket System - Monthly Transaction and Revenue Trends
 Transactions include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Transactions (in 1,000s)			Total Vehicles				
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	11,695	(1.0)	11,580	(3.3)	11,195	(31.9)	7,621	1,938	0.0	1,939	(2.7)	1,887	8.3	2,043
July	11,654	(0.5)	11,596	(2.0)	11,365	(21.8)	8,884	1,817	5.4	1,915	2.7	1,967	6.5	2,095
August	12,015	0.0	12,019	(1.9)	11,786	(21.1)	9,805	1,995	2.3	2,040	(1.7)	2,006	3.3	2,072
September	11,110	(2.5)	10,836	(0.6)	10,768	(17.5)	8,879	1,823	(1.8)	1,790	4.3	1,867	10.7	2,067
October	11,547	(0.6)	11,483	(0.8)	11,387	(18.1)	9,326	1,913	5.8	2,024	0.4	2,031	5.4	2,141
November	10,905	(2.6)	10,625	(0.5)	10,574			1,754	1.7	1,784	(0.8)	1,770		
December	10,464	(0.0)	10,463	(1.1)	10,347			1,638	0.8	1,650	2.2	1,686		
January	9,655	(2.1)	9,453	1.8	9,623			1,658	2.5	1,699	2.7	1,745		
February	9,152	(2.4)	8,931	4.8	9,358			1,539	0.5	1,547	4.5	1,616		
March	10,288	1.8	10,475	(32.9)	7,032			1,732	1.7	1,762	2.8	1,811		
April	10,836	(1.0)	10,728	(67.7)	3,463			1,795	4.7	1,880	(19.5)	1,513		
May	11,485	(1.0)	11,371	(50.9)	5,583			1,981	0.5	1,990	(11.0)	1,770		
Total Year	130,805	(1.0)	129,559	(13.2)	112,482			21,582	2.0	22,020	(1.6)	21,670		
Jun - Oct	58,020	(0.9)	57,514	(1.8)	56,501	(22.1)	44,014	9,486	2.4	9,709	0.5	9,757	6.8	10,419

Month	Passenger Cars			Commercial Vehicles			Toll Revenue (in \$1,000s)			Total Vehicles				
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$52,913	6.5	\$56,349	7.6	\$60,635	(41.8)	\$35,319	\$39,308	11.7	\$43,898	5.1	\$46,135	(2.0)	\$45,213
July	\$6,299	5.0	\$5,123	8.5	\$4,149	(33.4)	\$2,697	\$6,939	17.2	\$4,294	10.4	\$7,784	(4.3)	\$5,733
August	\$5,199	9.1	\$6,200	8.8	\$5,501	(28.3)	\$4,956	\$40,669	13.5	\$46,144	5.5	\$48,699	(4.5)	\$46,518
September	\$8,195	6.3	\$1,234	7.0	\$4,814	(24.3)	\$1,486	\$7,290	12.0	\$1,775	7.7	\$5,003	0.1	\$4,044
October	\$9,321	5.3	\$1,943	9.7	\$7,006	(21.3)	\$4,868	\$9,232	17.0	\$5,892	5.4	\$8,375	(0.3)	\$8,241
November	\$7,189	5.8	\$9,943	7.6	\$3,745			\$5,991	15.4	\$1,520	1.1	\$1,992		
December	\$4,599	8.3	\$8,312	10.0	\$3,142			\$4,402	11.8	\$8,457	7.1	\$1,206		
January	\$9,895	7.4	\$4,288	10.1	\$7,167			\$7,423	13.8	\$2,586	7.4	\$5,721		
February	\$8,015	10.1	\$4,868	10.5	\$6,274			\$5,551	12.0	\$9,811	8.3	\$3,112		
March	\$5,839	12.8	\$1,714	(40.2)	\$3,904			\$40,462	12.9	\$5,684	(6.7)	\$2,610		
April	\$8,924	10.1	\$3,860	(75.2)	\$1,360			\$40,759	13.9	\$6,431	(21.4)	\$6,517		
May	\$3,304	11.3	\$9,310	(57.6)	\$2,131			\$4,726	9.1	\$8,818	(12.8)	\$2,565		
Total Year	\$79,692	8.1	\$62,685	(8.8)	\$57,182			\$462,754	13.3	\$524,309	1.0	\$529,718		
Jun - Oct	\$26,927	6.5	\$28,850	8.3	\$30,105	(30.0)	\$211,326	\$193,438	14.2	\$21,002	6.8	\$235,995	(2.2)	\$230,749

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET conversion occurred in June 2020.





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Table 5
Combined Barrier Facilities - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Toll Transactions (in 1,000s)			Commercial Vehicles			Total Vehicles				
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	3,743	1.0	3,782	5.5	3,992	(25.0)	2,906	636	3.3	657	1.9	670	3.3	692
July	3,869	2.6	3,970	6.3	4,218	(19.2)	3,409	602	9.2	657	6.7	702	1.3	711
August	3,942	4.4	4,115	4.1	4,286	(17.9)	3,519	667	7.1	715	0.1	716	(3.4)	692
September	3,614	1.5	3,667	4.0	3,814	(11.7)	3,368	609	3.2	628	6.9	672	5.0	705
October	3,674	6.5	3,913	2.3	4,001	(14.2)	3,433	635	11.6	709	4.3	739	(3.3)	715
November	3,412	6.0	3,618	0.1	3,620			569	6.8	607	4.3	634		
December	3,282	7.2	3,519	1.3	3,564			508	7.9	548	6.7	585		
January	2,887	5.7	3,051	5.0	3,203			517	10.0	569	6.8	608		
February	2,806	6.9	2,999	3.4	3,101			495	6.4	526	7.5	566		
March	3,303	7.3	3,543	(31.4)	2,431			562	8.5	610	(1.9)	598		
April	3,423	8.0	3,698	(62.6)	1,382			592	13.1	669	(24.1)	508		
May	3,752	6.5	3,996	(44.7)	2,208			676	4.7	708	(14.9)	602		
Total Year	41,707	5.2	43,870	(9.2)	39,819			7,068	7.6	7,605	(0.1)	7,599		
Jun - Oct	18,842	3.2	19,446	4.4	20,311	(17.7)	16,724	3,149	6.9	3,366	3.9	3,499	0.5	3,515

Month	Passenger Cars			Toll Revenue (in \$1,000s)			Commercial Vehicles			Total Revenue				
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$8,964	6.4	\$9,537	16.5	\$11,108	(21.6)	\$8,704	\$5,335	9.8	\$5,859	8.0	\$6,328	9.9	\$6,952
July	9,422	6.7	10,055	17.8	11,841	(18.8)	9,614	5,009	15.3	5,775	14.1	6,591	5.6	6,959
August	9,413	9.9	10,344	14.6	11,850	(10.7)	10,577	5,541	12.4	6,225	8.4	6,748	3.4	6,974
September	8,425	8.2	9,114	13.8	10,370	(8.3)	9,514	5,082	8.9	5,535	14.3	6,326	10.0	6,958
October	8,485	13.9	9,668	9.7	10,609	(1.9)	10,406	5,368	17.2	6,293	10.3	6,943	6.1	7,366
November	7,933	16.1	9,214	12.0	10,323			4,952	12.4	5,567	12.5	6,263		
December	7,746	17.0	9,065	15.0	10,423			4,597	12.5	5,173	16.6	6,029		
January	6,847	18.9	8,141	18.6	9,659			4,799	18.2	5,675	13.7	6,450		
February	6,561	21.6	7,976	14.3	9,112			4,580	15.4	5,285	13.7	6,009		
March	7,898	23.0	9,712	(31.3)	6,670			5,165	17.0	6,045	4.5	6,317		
April	8,277	21.8	10,080	(62.3)	3,796			5,298	20.1	6,362	(11.8)	5,610		
May	9,078	21.0	10,988	(42.4)	6,327			5,940	12.9	6,704	(5.9)	6,311		
Total Year	\$99,048	15.0	\$113,893	(1.6)	\$112,089			\$61,664	14.3	\$70,498	7.7	\$75,925		
Jun - Oct	44,709	9.0	48,717	14.5	55,778	(12.5)	\$48,815	26,333	12.7	29,688	10.9	32,935	6.9	\$35,210

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (5) AET Conversions at Beaver Valley Expressway, NE Extension Barrier Phases, Findlay Connector, Amos K Hutchinson Bypass, Gateway Toll Plaza, and Mon/fayette Expressway in May 2017, April 2018, June 2018, October 2019, October 2019, and June 2020 respectively.





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Table 6
Turnpike 43 - Mon/Fayette Expressway - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles													
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20											
June	1,072	0.7	1,079	1.6	1,061	11.0	97	0.0	97	0.8	98	1.169	0.6	1,176	(1.5)	1,158	(10.0)	1,042		
July	1,068	4.7	1,118	(1.6)	1,099	(4.9)	94	6.2	99	9.7	109	(8.9)	1,161	4.8	1,217	(0.7)	1,208	(5.3)	1,144	
August	1,116	3.0	1,149	(2.9)	1,116	(6.6)	1,042	107	(5.6)	101	0.1	102	(12.5)	1,223	2.3	1,251	(2.7)	1,217	(7.1)	1,131
September	1,076	0.4	1,080	(1.2)	1,067	(2.7)	1,039	97	(2.5)	95	4.0	99	(6.1)	1,173	0.2	1,175	(0.8)	1,166	(3.1)	1,129
October	1,116	4.1	1,162	(3.5)	1,121	(5.4)	1,060	103	5.6	108	4.0	113	(17.8)	1,219	4.2	1,270	(2.9)	1,233	(6.5)	1,152
November	980	4.8	1,027	(5.6)	970	(4.3)	87	86	5.9	91	(4.3)	87	1,066	4.9	1,118	(5.5)	1,057			
December	952	1.6	967	(2.0)	948	(1.7)	891	71	4.6	75	(4.8)	71	1,023	1.8	1,042	(2.2)	1,019			
January	876	0.4	880	1.3	891	(1.7)	868	71	10.1	78	(3.8)	75	947	1.1	957	0.9	966			
February	870	1.5	884	(1.7)	868	(2.3)	836	71	0.9	72	(6.5)	67	942	1.5	956	(2.1)	936			
March	995	2.0	1,015	(30.4)	706	(18.7)	71	78	11.4	87	(18.7)	71	1,073	2.7	1,102	(29.5)	777			
April	1,026	2.7	1,053	(57.2)	451	(37.5)	62	88	13.1	99	(37.5)	62	1,113	3.5	1,152	(55.5)	513			
May	1,098	1.3	1,111	(39.6)	671	(2.6)	81	106	(2.0)	104	(2.6)	81	1,204	1.0	1,215	(38.2)	751			
Total Year	12,244	2.3	12,524	(12.4)	10,970	(6.1)	5,130	1,070	3.5	1,107	(6.7)	1,033	13,313	2.4	13,631	(11.9)	12,003			
Jun-Oct	5,447	2.6	5,588	(2.2)	5,464	(6.1)	5,130	498	0.6	501	3.6	519	(9.6)	5,945	2.4	6,089	(1.7)	5,983	(6.4)	5,599

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)												
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20										
June	\$1,659	6.8	\$1,772	7.5	\$1,904	(16.3)	\$426	8.5	\$462	8.3	\$500	(3.6)	\$2,085	7.1	\$2,234	7.6	\$2,404	(13.6)	\$2,076
July	1,671	12.4	1,877	6.5	2,000	(12.1)	400	17.8	471	18.0	556	(16.0)	2,071	13.4	2,349	8.8	2,556	(13.0)	2,225
August	1,722	10.6	1,904	3.7	1,974	(8.1)	457	4.6	478	8.9	520	(16.1)	2,179	9.3	2,382	4.7	2,494	(9.8)	2,250
September	1,642	7.8	1,769	7.4	1,901	(9.6)	418	6.9	447	9.8	491	(11.2)	2,060	7.6	2,216	7.9	2,392	(10.0)	2,154
October	1,711	10.9	1,898	4.5	1,983	(2.3)	437	16.3	508	9.3	556	(15.3)	2,148	12.0	2,406	5.5	2,538	(5.2)	2,407
November	1,496	12.6	1,684	0.9	1,700	(2.3)	373	16.0	432	3.3	446		1,869	13.3	2,116	1.4	2,147		
December	1,446	12.4	1,625	3.4	1,680	(3.7)	316	18.3	374	0.8	377		1,762	13.5	1,999	2.9	2,056		
January	1,399	10.2	1,542	9.7	1,692	(9.7)	331	22.1	404	5.7	427		1,730	12.5	1,946	8.9	2,119		
February	1,403	10.4	1,548	5.9	1,639	(3.6)	343	10.4	378	2.8	389		1,746	10.4	1,926	5.3	2,028		
March	1,602	11.9	1,792	(26.1)	1,324	(53.1)	380	21.5	462	(14.3)	396		1,982	13.7	2,254	(23.7)	1,720		
April	1,672	11.4	1,862	(53.1)	873	(36.3)	421	22.1	513	(29.3)	363		2,093	13.5	2,376	(48.0)	1,236		
May	1,798	10.4	1,986	(31.9)	1,352	(5.8)	499	8.7	543	(16.5)	453		2,298	10.1	2,529	(28.6)	1,805		
Total Year	\$19,222	10.6	\$21,261	(5.8)	\$20,022	(9.7)	\$4,800	14.0	\$5,472	0.0	\$5,473		\$24,021	11.3	\$26,732	(4.6)	\$25,496		
Jun-Oct	8,405	9.7	9,220	5.9	9,761	(9.7)	2,138	10.7	2,367	10.9	2,624	(12.6)	10,543	9.9	11,587	6.9	12,384	(10.3)	\$11,111

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in June 2020.





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Table 7
Turnpike 66 - Amos K. Hutchinson Bypass - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles						
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20				
June	567	(1.9)	556	(2.7)	541	(11.5)	667	(1.5)	657	(3.2)	636	(9.3)	577
July	553	1.1	559	(0.7)	518	(6.6)	94	7.2	101	(0.9)	100	1.3	101
August	578	0.8	583	(1.5)	574	(8.1)	104	3.6	108	(3.8)	104	(4.2)	100
September	558	(0.5)	555	(3.2)	538	(4.8)	95	(2.5)	92	3.0	95	3.0	98
October	575	1.0	580	0.1	581	(9.4)	98	8.1	105	(0.7)	105	(5.7)	99
November	537	(1.2)	531	(3.3)	513		84	2.4	86	(0.6)	85		85
December	529	0.7	533	(3.1)	517		74	7.8	80	(3.0)	77		77
January	482	(1.4)	475	2.3	486		77	5.7	81	2.0	83		83
February	460	0.1	461	1.3	467		71	5.6	75	1.0	76		76
March	533	(1.2)	527	(26.5)	387		84	(3.3)	81	(4.0)	78		78
April	536	0.3	538	(49.6)	271		90	3.8	93	(26.4)	69		69
May	579	(1.6)	570	(30.4)	396		101	(2.4)	99	(13.4)	86		86
Total Year	6,486	(0.3)	6,466	(9.9)	5,827		1,071	2.9	1,102	(4.6)	1,051		495
Jun - Oct	2,830	0.1	2,833	(1.6)	2,789		490	3.5	507	(1.8)	498		495

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)						
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20				
June	\$951	4.6	\$995	4.8	\$1,043	(4.8)	\$452	11.4	\$504	(2.1)	\$493	(0.7)	\$490
July	938	7.1	1,004	7.6	1,080	(5.0)	426	15.9	494	2.9	508	(4.2)	487
August	964	7.4	1,036	6.6	1,104	(4.3)	473	9.6	518	2.5	531	(8.3)	487
September	931	6.4	991	3.8	1,029	(2.1)	434	3.1	447	7.4	480	(2.2)	470
October	960	6.5	1,023	1.3	1,036	8.0	445	16.4	518	(3.7)	499	0.7	503
November	892	4.8	934	12.1	1,047		389	6.4	414	6.9	443		443
December	879	7.0	941	7.1	1,008		341	15.0	392	0.9	396		396
January	829	7.1	888	8.5	963		373	12.6	420	1.1	425		425
February	804	8.3	871	3.5	901		354	10.9	392	(2.9)	381		381
March	935	7.4	1,004	(30.5)	698		414	3.5	429	(12.6)	375		375
April	946	8.4	1,026	(49.8)	515		446	8.9	485	(28.9)	345		345
May	1,024	6.5	1,090	(25.5)	812		493	3.9	513	(14.9)	437		437
Total Year	\$11,054	6.8	\$11,804	(4.8)	\$11,237		\$5,041	9.7	\$5,528	(3.9)	\$5,314		\$5,314
Jun - Oct	4,743	6.4	5,048	4.8	5,292	(1.7)	2,230	11.3	2,481	1.2	2,512	(3.0)	\$2,437

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in October 2019.





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Table 9
Turnpike I-376 - Beaver Valley Expressway - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2017-18	% Chg.	2019-20	2017-18	% Chg.	2019-20	2017-18	% Chg.	2019-20					
June	592	4.8	621	3.7	644	(27.2)	469	27.2	748	2.4	766	(22.5)	594	
July	593	8.4	643	2.8	661	(23.1)	508	23.1	707	9.1	771	2.2	788	
August	604	12.1	677	(0.2)	675	(23.3)	518	23.3	730	12.0	818	(1.1)	809	
September	583	6.2	619	2.0	632	(16.5)	527	16.5	741	2.1	756	(12.9)	659	
October	577	13.7	657	2.0	670	(19.3)	540	19.3	698	14.1	796	0.6	801	
November	541	9.2	591	0.5	593				646	8.8	703	(0.1)	702	
December	534	9.1	582	0.4	585				625	9.0	681	(0.3)	678	
January	478	8.5	519	5.1	545				569	9.0	620	3.7	642	
February	465	9.3	508	2.0	518				556	8.4	603	1.4	611	
March	552	8.1	596	(32.5)	402				658	7.2	705	(29.4)	498	
April	568	7.9	613	(62.7)	229				683	8.0	738	(57.7)	312	
May	623	5.9	660	(45.4)	360				752	5.0	793	(41.1)	467	
Total Year	6,711	8.6	7,286	(10.6)	6,514				8,046	8.3	8,717	(10.1)	7,833	
Jun - Oct	2,950	9.0	3,216	2.0	3,281	(21.9)	2,562	21.9	3,555	9.0	3,875	1.2	3,922	
														18.3
														3,204

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)							
	2017-18	% Chg.	2019-20	2017-18	% Chg.	2019-20	2017-18	% Chg.	2019-20					
June	\$771	9.8	\$847	12.5	\$953	(7.3)	\$883	7.3	\$1,140	7.2	\$1,221	9.6	\$1,339	
July	780	12.2	875	15.1	1,007	(10.8)	898	10.8	1,112	12.3	1,248	12.8	1,408	
August	787	18.7	935	7.3	1,003	(5.7)	947	5.7	1,153	17.1	1,350	5.2	1,420	
September	748	15.0	861	11.1	957	(5.3)	907	5.3	1,098	11.0	1,218	10.9	1,351	
October	749	19.2	892	16.8	1,042	1.6	1,059	1.6	1,090	19.5	1,302	12.3	1,463	
November	695	15.5	803	34.9	1,083				999	13.0	1,129	29.3	1,459	
December	683	14.8	784	34.7	1,057				951	12.6	1,070	29.3	1,384	
January	642	18.9	763	29.3	987				908	17.9	1,071	23.9	1,327	
February	623	21.2	755	21.3	916				901	17.3	1,057	17.4	1,242	
March	748	20.4	900	(29.2)	637				1,071	17.3	1,257	(23.3)	964	
April	781	17.8	920	(56.9)	397				1,126	17.5	1,323	(47.4)	696	
May	837	17.5	984	(33.2)	657				1,226	15.0	1,411	(26.7)	1,033	
Total Year	\$8,845	16.7	\$10,321	3.6	\$10,697				\$12,776	14.7	\$14,657	2.9	\$15,086	
Jun - Oct	3,835	15.0	4,410	12.5	4,963	(5.4)	\$4,693	5.4	5,593	13.4	6,340	10.1	6,981	
														(1.0)
														\$6,909

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in May 2017.





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Table 10
Turnpike I-576 - Southern Beltway - Findlay Connector - Monthly Transaction and Revenue Trends
 Transactions include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Transactions (in 1,000s)							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	157	(11.0)	140	0.5	140	(33.3)	94	19	16.5	22	54.2	33	(0.7)	33
July	158	(11.2)	140	5.8	148	(32.7)	100	20	8.8	22	23.0	27	14.2	31
August	172	(19.3)	139	7.4	149	(29.5)	105	23	28.8	30	(2.3)	29	10.7	33
September	154	(19.3)	124	10.8	137	(22.4)	107	22	37.1	31	(3.2)	30	18.5	35
October	164	(15.5)	139	8.6	151	(24.4)	114	22	17.2	25	38.7	35	(10.2)	32
November	148	(13.4)	128	4.0	133			19	21.8	23	76.8	41		
December	140	(11.5)	124	6.2	132			17	31.7	22	70.5	37		
January	131	(9.7)	118	5.9	125			16	38.6	22	75.4	39		
February	122	(5.8)	115	3.3	118			16	37.2	22	67.1	37		
March	143	(8.2)	131	(25.2)	98			20	82.3	36	(3.8)	35		
April	140	(8.0)	129	(56.1)	57			20	87.3	38	(43.0)	22		
May	151	(6.7)	141	(45.7)	77			25	45.4	36	(30.8)	25		
Total Year	1,779	(11.9)	1,567	(6.5)	1,465			240	37.9	330	18.5	391		
Jun - Oct	805	(15.3)	681	6.5	726	(28.5)	519	106	22.2	130	19.2	155	5.6	164

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)							
	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21	2017-18	% Chg	2018-19	% Chg	2019-20	% Chg	2020-21
June	\$110	42.4	\$157	11.8	\$175	(21.7)	\$137	\$42	35.5	\$56	67.7	\$94	14.3	\$108
July	114	41.3	162	16.3	188	(29.9)	132	44	29.2	57	38.0	79	26.1	100
August	123	36.9	168	9.5	184	(19.1)	149	51	57.3	79	6.4	85	25.6	106
September	108	36.4	147	23.0	181	(21.9)	141	48	70.1	82	4.3	86	26.0	108
October	116	40.6	164	18.1	193	(11.6)	171	48	41.6	68	46.8	100	(2.1)	98
November	103	43.8	148	11.9	166			43	42.8	61	103.6	124		
December	101	43.3	145	18.1	171			37	52.3	57	86.9	107		
January	91	62.4	147	20.1	177			37	64.5	61	114.8	131		
February	85	70.1	144	12.1	162			36	72.9	63	97.4	125		
March	101	68.5	170	(31.3)	116			44	147.2	108	5.4	114		
April	98	68.0	165	(49.9)	83			46	146.9	112	(37.1)	71		
May	106	69.6	179	(37.1)	113			54	93.7	104	(23.3)	80		
Total Year	\$1,255	51.0	\$1,895	0.7	\$1,909			\$580	71.8	\$911	31.3	\$1,195		
Jun - Oct	572	39.5	797	15.6	922	(20.8)	730	233	47.5	344	29.2	444	17.1	\$521

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion and vehicle classification changes were implemented in June 2018.
 (5) The I-576 tolling configuration was changed from six ramp tolls to two mainline toll gantries at the time of AET conversion in June 2018.





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Table 11
Delaware River Bridge - Monthly Transaction and Revenue Trends
 Transactions include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles					
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20			
June	601	7.3	645	28.4	828	(35.4)	760	25.4	953	(29.5)	671	
July	637	4.3	664	28.4	853	(25.2)	735	5.7	777	26.8	778	
August	650	6.0	689	24.0	855	(17.3)	707	6.7	810	22.1	843	
September	577	6.6	616	21.6	748	(14.6)	639	6.5	722	21.0	779	
October	583	20.1	700	8.6	760	(14.8)	648	691	19.7	827	8.9	793
November	563	24.1	699	9.2	763		666	22.4	815	9.1	890	
December	543	32.6	720	6.0	763		639	29.8	830	7.4	891	
January	467	31.0	612	8.8	666		563	29.1	727	9.2	794	
February	446	31.4	586	11.6	653		535	28.8	690	11.9	772	
March	519	36.3	707	(34.1)	466		621	32.8	824	(27.6)	597	
April	561	33.0	746	(71.8)	211		665	30.9	870	(63.3)	320	
May	611	30.8	799	(53.0)	376		727	28.1	931	(46.5)	498	
Total Year	6,758	21.1	8,182	(2.9)	7,942		7,984	20.0	9,582	(1.3)	9,462	
Jun - Oct	3,048	8.7	3,314	22.0	4,045	(21.7)	3,568	9.1	3,895	20.7	4,700	
											3,864	

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)				
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20		
June	\$3,098	6.2	\$3,291	34.5	\$4,425	(29.1)	\$4,978	7.2	\$5,334	26.7	\$6,760
July	3,260	3.7	3,381	36.9	4,627	(21.7)	5,027	7.0	5,379	32.2	7,109
August	3,337	6.6	3,557	31.8	4,689	(12.8)	5,289	7.9	5,706	26.5	7,218
September	3,000	5.5	3,165	27.8	4,045	(9.0)	4,831	5.2	5,081	26.2	6,413
October	2,962	20.2	3,560	16.2	4,137	(6.1)	4,900	19.1	5,835	16.3	6,787
November	2,783	28.5	3,577	16.2	4,157		4,604	22.8	5,653	16.1	6,562
December	2,827	28.4	3,631	11.9	4,061		4,581	22.2	5,599	15.6	6,470
January	2,461	33.8	3,293	19.3	3,927		4,181	30.4	5,452	19.4	6,508
February	2,265	39.7	3,164	19.3	3,776		3,886	32.1	5,131	20.2	6,168
March	2,639	45.8	3,848	(32.9)	2,583		4,464	36.1	6,078	(15.7)	5,122
April	2,879	40.0	4,030	(69.5)	1,230		4,737	34.5	6,369	(46.0)	3,437
May	3,104	39.5	4,330	(49.2)	2,202		5,154	32.2	6,812	(31.2)	4,686
Total Year	\$34,615	23.7	\$42,826	2.4	\$43,859		\$56,631	20.8	\$68,429	7.0	\$73,239
Jun - Oct	15,658	8.3	16,955	29.3	21,923	(16.0)	25,025	9.2	27,335	25.4	34,288
											3,864

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (4) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.





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Table 12
Gateway Toll Plaza - Monthly Transaction and Revenue Trends
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles						
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20				
June	334	(2.8)	324	(2.9)	315	(29.9)	421	(2.0)	412	(3.1)	400	(21.7)	313
July	367	(2.5)	358	(4.3)	342	(22.3)	448	(1.3)	442	(3.9)	425	(15.0)	361
August	342	1.8	348	(3.2)	337	(20.1)	432	2.1	441	(3.7)	425	(13.5)	367
September	276	2.3	283	(5.3)	268	(12.1)	356	2.5	365	(3.9)	351	(5.5)	332
October	279	0.0	279	0.7	281	(16.6)	367	1.1	371	1.8	378	(11.4)	335
November	280	(1.7)	275	(2.9)	267		361	(0.9)	357	(1.5)	352		
December	261	0.8	263	6.7	280		337	0.9	340	7.1	364		
January	195	(2.5)	190	9.0	207		275	(1.3)	271	8.5	294		
February	187	(1.2)	185	7.2	198		262	(0.5)	261	7.8	281		
March	256	(2.8)	249	(34.5)	163		341	(1.9)	334	(23.8)	255		
April	254	(0.3)	253	(88.9)	79		338	0.3	339	(53.5)	158		
May	230	1.6	295	(49.0)	151		380	1.4	385	(39.3)	234		
Total Year	3,322	(0.6)	3,302	(12.5)	2,888		4,317	0.1	4,320	(9.4)	3,915		
Jun - Oct	1,598	(0.4)	1,592	(3.1)	1,543	(20.6)	2,023	0.4	2,032	(2.7)	1,978	(13.6)	1,708

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)						
	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20	2017-18	% Chg	2019-20				
June	\$1,962	3.1	\$2,023	2.6	\$2,075	(22.1)	\$3,623	5.9	\$3,837	2.2	\$3,920	(7.4)	\$3,628
July	2,159	3.3	2,231	1.7	2,269	(22.7)	3,713	8.2	4,018	2.5	4,117	(8.8)	3,756
August	2,000	8.1	2,161	1.9	2,203	(7.0)	3,728	9.5	4,081	1.0	4,120	0.7	4,150
September	1,612	8.2	1,745	0.7	1,757	(6.4)	3,151	10.0	3,465	3.0	3,568	3.2	3,683
October	1,615	5.7	1,708	(0.5)	1,699	6.0	3,297	8.7	3,584	2.8	3,685	8.3	3,989
November	1,610	4.0	1,675	3.3	1,730		3,179	5.7	3,359	6.1	3,565		
December	1,497	6.7	1,597	28.8	2,057		2,961	7.0	3,169	22.1	3,868		
January	1,176	2.6	1,206	28.3	1,547		2,797	5.5	2,952	16.1	3,427		
February	1,134	4.7	1,187	15.4	1,370		2,667	6.6	2,844	11.0	3,157		
March	1,576	3.1	1,626	(35.1)	1,054		3,297	5.4	3,473	(14.5)	2,970		
April	1,565	5.2	1,646	(64.7)	581		3,280	6.9	3,505	(33.9)	2,318		
May	1,785	8.0	1,928	(50.5)	954		3,621	6.8	3,868	(28.4)	2,771		
Total Year	\$19,692	5.3	\$20,733	(6.9)	\$19,295		\$39,314	7.2	\$42,155	(1.6)	\$41,486		
Jun - Oct	9,349	5.6	9,869	1.4	10,003	(11.4)	17,512	8.4	18,985	2.2	19,411	(1.0)	\$19,207

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (3) In response to the COVID-19 pandemic, schools were closed state-wide on March 16, 2020 and stay at home orders for some counties began to take effect on March 23, 2020. A state-wide stay at home order was issued April 1, 2020 and lifted on June 5, 2020.
 (4) AET conversion occurred in October 2019.



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, for the FY 2020-21 year-to-date period, total transactions decreased 17.8 percent compared to the same period in the prior year (toll revenue decreased by 17.8 percent as well). PC transactions decreased by 22.1 percent (with toll revenue falling 30.0 percent) during this period, while CV activity has increased by 6.8 percent (with toll revenue falling 2.2 percent) compared to the same five-month period in FY 2019-20.

Prior to the impacts of COVID-19 beginning in March 2020, Ticket System toll transaction growth was generally slightly negative for PCs and slightly positive for CVs over the period shown in Table 4. The impact of the toll rate increases, however, resulted in significant revenue increases over this time for the Ticket System. In FY 2018-19, while total transactions decreased by 0.5 percent compared to the previous year, toll revenue increased by 10.4 percent (8.1 percent for PCs and 13.3 percent for CVs). This same general trend continued into FY 2019-20 until March 2020 when the impacts of COVID-19 become evident. As with the total systemwide trends shown in Table 3, the negative impacts of COVID-19 are greatest on the Ticket System in April 2020 with total transactions decreasing by 60.5 percent and toll revenue down by 50.3 percent. By October 2020, however, the negative impacts are just 14.5 percent for transactions and 11.6 percent for toll revenue. Negative impacts are much more pronounced for PCs than for CVs.

Table 5 provides the same information for all barrier toll facilities combined. Barrier facility toll revenue contributes less than 15 percent of total systemwide toll revenue. The negative impacts of COVID-19 on the barrier facilities are similar to those on the Ticket System. However, the recovery rate seems to be somewhat faster for the barrier facilities. For the latest five-month period shown for FY 2020-21, total barrier facility toll transactions are down by 15.0 percent compared to 17.8 percent for the Ticket System. Over the same period, total barrier facility toll revenue is down only 5.3 percent compared to 17.8 percent for the Ticket System. The same information is provided for each individual barrier facility in Tables 6 through 12.

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 13** presents the annual percent increases in toll rates for E-ZPass, cash, and video from calendar year 2020 through 2050.

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Table 13
Actual and Assumed Percent Changes in Turnpike System Toll Rates
 Pennsylvania Turnpike System

Calendar Year (2)	Percent Change in Turnpike System Toll Rates (1)			
	E-ZPass	Cash	Video	Registered Video Account (RVA)
2020 (3)	6.00	6.00	6.00	N/A
2021	6.00	N/A	6.00/45.00 (4)	-15.00 (5)
2022	5.00	N/A	5.00	5.00
2023	5.00	N/A	5.00	5.00
2024	5.00	N/A	5.00	5.00
2025	5.00	N/A	5.00	5.00
2026	4.00	N/A	4.00	4.00
2027	3.50	N/A	3.50	3.50
2028	3.00	N/A	3.00	3.00
2029	3.00	N/A	3.00	3.00
2030	3.00	N/A	3.00	3.00
2031	3.00	N/A	3.00	3.00
2032	3.00	N/A	3.00	3.00
2033	3.00	N/A	3.00	3.00
2034	3.00	N/A	3.00	3.00
2035	3.00	N/A	3.00	3.00
2036	3.00	N/A	3.00	3.00
2037	3.00	N/A	3.00	3.00
2038	3.00	N/A	3.00	3.00
2039	3.00	N/A	3.00	3.00
2040	3.00	N/A	3.00	3.00
2041	3.00	N/A	3.00	3.00
2042	3.00	N/A	3.00	3.00
2043	3.00	N/A	3.00	3.00
2044	3.00	N/A	3.00	3.00
2045	3.00	N/A	3.00	3.00
2046	3.00	N/A	3.00	3.00
2047	3.00	N/A	3.00	3.00
2048	3.00	N/A	3.00	3.00
2049	3.00	N/A	3.00	3.00
2050	3.00	N/A	3.00	3.00

- (1) Toll rate increases are the same for all facilities and vehicle classes, except where otherwise noted.
- (2) Except where otherwise indicated, toll rate increases are applied on or near January 1.
- (3) Toll rate increases are actual.
- (4) All rates will increase by 6%. Video rates will increase by an additional 45% on the Ticket System and Mon Fayette Expressway (Turnpike 43) to bring the video rate premium in line with those on PTC's other AET facilities.
- (5) Registered video accounts will be a new billing option that provides a 15% discount to video customers who pre-register their vehicle and provide electronic payment information.



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Rate increase assumptions are unchanged since the 2020 Bring Down Letter, except for the calendar year 2021 increase, which is now scheduled to occur on January 3, 2021 rather than in October 2020. With the suspension of cash collection in March and June of 2020 on the Ticket System and MFE, respectively, the Turnpike System now operates entirely under AET. As such, there are no cash rates shown in Table 13 for 2021 and beyond. As discussed above, to make the toll differential between E-ZPass and video rates similar on all toll facilities, in addition to a six percent toll increase in January 2021, video rates on the Ticket System and MFE will also increase by an additional 45 percent. The 2021 toll rate increases were approved by the PTC on July 21, 2020. Toll adjustment assumptions for the years 2022 and beyond are proposed and have not been formally approved yet by the PTC Board.

An additional rate tier, registered video account (RVA), has also been added to the rate schedule beginning in 2021. RVA accounts will allow for a 15-percent discount off of the video rate for video customers who pre-register their vehicle with PTC and provide electronic payment information. This will allow PTC to process payments automatically without having to send billing invoices.

Actual and Assumed E-ZPass Penetration Rates

Table 14 presents the actual and assumed annual E-ZPass penetration rates from calendar year 2018 through 2050. The first three columns show the E-ZPass market share assumptions for the current 6-Month Update. These were adjusted slightly on a facility by facility basis, by the amount shown in the three rightmost columns, over assumptions used in the 2020 Bring Down Letter.

As shown, assumed E-ZPass market shares in the current analysis are very similar to those assumed in the 2020 Bring Down Letter. Thus far in 2020, actual PC E-ZPass market share has been slightly lower than previously estimated. This has resulted in new 2020 estimates being about 0.1 percent lower than previous estimates, although they are 0.1 percent higher in 2021. Over the rest of the forecast period PC E-ZPass market share is unchanged from previous forecasts. CV E-ZPass market share has not changed at all from previous estimates.

Accordingly, total E-ZPass market share forecast assumptions also remain largely unchanged from those in the 2020 Bring Down Letter. The only difference is in 2021, where total E-ZPass market share is 0.2 percent higher than the previous forecast. This is due to the fact that CV traffic is expected to recover more quickly from the pandemic, thus accounting for a larger percentage of traffic. Because CVs have higher E-ZPass usage rates than PCs, total E-ZPass penetration is expected to increase slightly.



Table 14
Actual and Assumed Percent E-ZPass Penetration
Pennsylvania Turnpike System

E-ZPass Penetration Rates						
Calendar Year	6-month Update to 2020 Bring Down Letter			Difference from 2020 Bring Down Letter		
	Cars	Trucks	Total	Cars	Trucks	Total
2018 (1)	80.0	90.6	81.5	0.0	0.0	0.0
2019 (1)	81.4	91.7	82.9	0.0	0.0	0.0
2020	82.9	92.2	84.3	-0.1	0.0	0.0
2021	84.8	93.0	86.1	0.1	0.0	0.2
2022	85.9	93.8	87.1	0.0	0.0	0.0
2023	86.6	94.2	87.8	0.0	0.0	0.0
2024	87.3	94.7	88.4	0.0	0.0	0.0
2025	87.8	95.1	88.9	0.0	0.0	0.0
2026	88.3	95.5	89.4	0.0	0.0	0.0
2027	88.8	95.8	89.8	0.0	0.0	0.0
2028	89.1	96.2	90.2	0.0	0.0	0.0
2029	89.5	96.3	90.6	0.0	0.0	0.0
2030	89.8	96.3	90.8	0.0	0.0	0.0
2031	89.9	96.4	90.9	0.0	0.0	0.0
2032	90.0	96.4	91.0	0.0	0.0	0.0
2033	90.1	96.5	91.1	0.0	0.0	0.0
2034	90.2	96.5	91.2	0.0	0.0	0.0
2035	90.2	96.5	91.2	0.0	0.0	0.0
2036	90.3	96.6	91.3	0.0	0.0	0.0
2037	90.4	96.6	91.3	0.0	0.0	0.0
2038	90.4	96.7	91.4	0.0	0.0	0.0
2039	90.5	96.7	91.4	0.0	0.0	0.0
2040	90.5	96.7	91.5	0.0	0.0	0.0
2041	90.6	96.8	91.5	0.0	0.0	0.0
2042	90.6	96.8	91.6	0.0	0.0	0.0
2043	90.7	96.8	91.6	0.0	0.0	0.0
2044	90.7	96.9	91.7	0.0	0.0	0.0
2045	90.8	96.9	91.7	0.0	0.0	0.0
2046	90.8	97.0	91.8	0.0	0.0	0.0
2047	90.8	97.0	91.8	0.0	0.0	0.0
2048	90.9	97.0	91.9	0.0	0.0	0.0
2049	90.9	97.1	91.9	0.0	0.0	0.0
2050	91.0	97.1	92.0	0.0	0.0	0.0

(1) The E-ZPass penetration rates for both this 6-month Update to the 2020 Bring Down Letter and the the 2020 Bring Down Letter are actual through 2019.

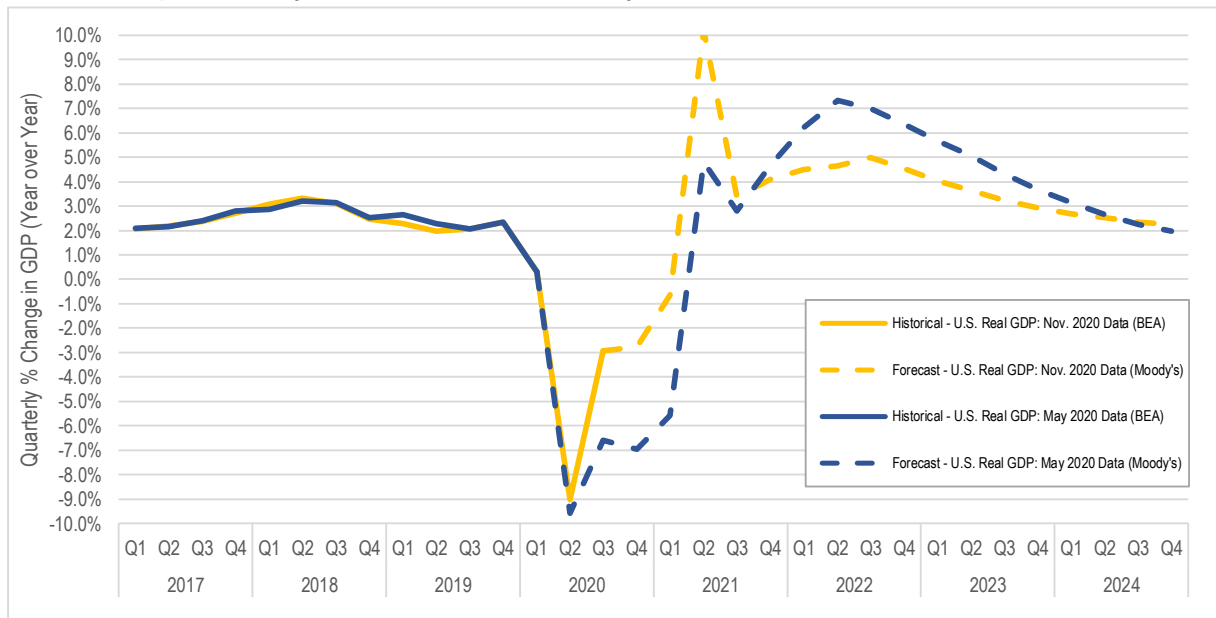


Summary of Changes in Future Year Estimates for U.S. Gross Domestic Product and Pennsylvania Gross State Product

This section presents a comparison of the Gross Domestic Product (GDP) and Pennsylvania Gross State Product (GSP) information available for the 2019 and 2020 Bring Down Letters 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 2nd quarter 2020 percent change would reflect the 2nd quarter of 2020 versus the 2nd quarter of 2019.

Figure 3 shows actual and estimated GDP at the time of the 2020 Bring Down Letter as well as the revised figures based on updated Moody's Analytics' forecasts as of November 2020. Since the 2020 Bring Down Letter, actual GDP growth figures have been released for an additional two quarters: the second and third quarters of 2020. Encouragingly, actual GDP growth in these quarters was better than forecasted in May, indicating that economic effects of the COVID-19 pandemic were not as severe as originally forecast. At the time of the 2020 Bring Down Letter, GDP was forecasted to fall 9.6 percent in the second quarter and 6.6 percent in the third quarter. In actuality, GDP contracted by only 9.0 percent and 2.8 percent during these quarters, respectively. Accordingly, although GDP growth is still expected to be negative for each quarter through the first quarter of 2021, it is now forecast to be less negative and then more positive for each period through the third quarter of 2021. After that point, GDP growth is expected to be slower than originally predicted, although still positive, largely because the GDP growth associated with economic recovery is now forecasted to happen earlier. In the latest November 2020 forecast, recovery from the pandemic is forecast to be strong throughout the remainder of the forecast period. After levelling off in 2021, GDP growth is expected to accelerate through most of 2022, reaching 5.0 percent in the third quarter of 2022. GDP is then forecast to continue growing, albeit it at a slowing rate, through the end of 2024, when 2.3 percent growth is forecast. At this point, both forecasts (May 2020 and November 2020) are close to converging, indicating that GDP growth will be close to returning to its long-range, pre-pandemic equilibrium.

Figure 3
 Comparison of May 2020 to November 2020 Quarterly Growth Estimates of U.S. Gross Domestic Product

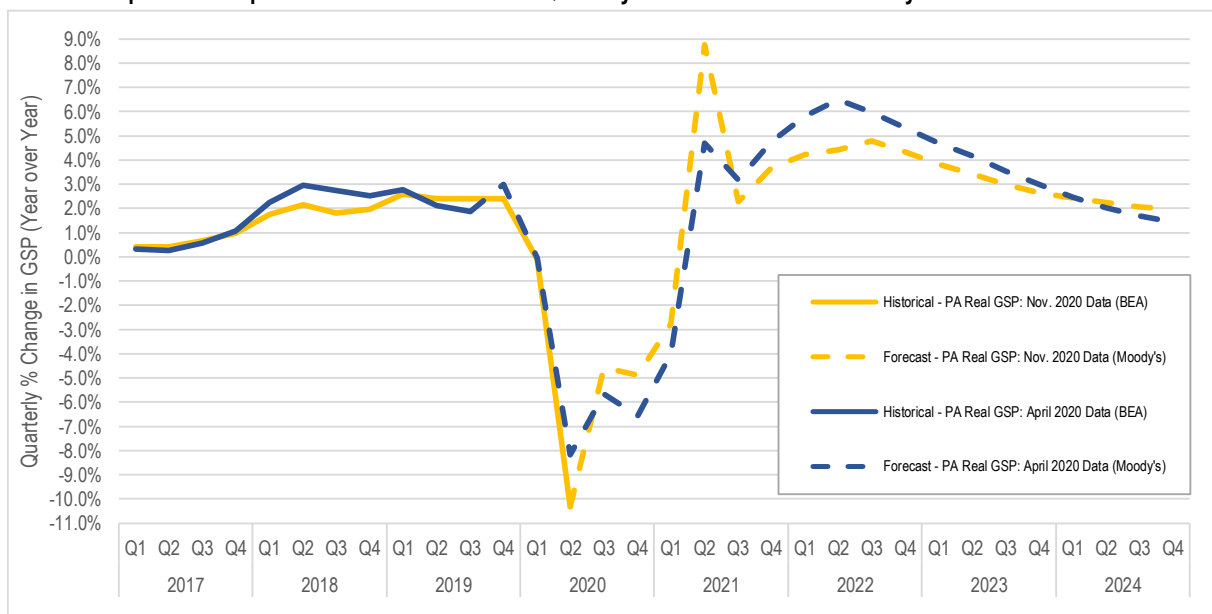


Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (May 2020 and November 2020 Releases)

Figure 4 shows GSP trend and forecast data for Pennsylvania. Like GDP, the GSP forecast for the remainder of the forecast period has been noticeably altered by actual economic conditions experienced over the last two quarters. While second quarter 2020 GSP contracted more than forecasted in April (falling 10.3 percent compared to the 8.2 percent forecast), economic recovery is now forecasted to occur more strongly and more quickly than predicted in April, peaking at 8.8 percent growth in the second quarter of 2021 as compared to peak of 6.5 percent growth in the second quarter of 2022, as previously forecast. The latest forecast predicts a strong recovery period from the second quarter of 2021 through the third quarter of 2023. After this point, economic growth is forecast to continue to remain positive, albeit it at a slowing rate, eventually reaching 2.0 percent growth at the end of 2024. Like with GDP, at this point end of the forecast period both forecasts (April 2020 and November 2020) are close to converging, indicating that GSP growth will be close to returning to its long-range, pre-pandemic equilibrium.



Figure 4
Comparison of April 2020 and November 2020 Quarterly Growth Estimates of Pennsylvania Gross State Product



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (May 2020 and November 2020 Releases)

Summary of Trends in Fuel Prices

Figure 5 portrays gasoline and diesel prices for the Central Atlantic Region from January 2016 through October 2020. 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) also provides monthly forecasts for this region. Figure 5 shows the monthly gasoline price forecast through the end of 2021.

As shown, Central Atlantic gasoline and diesel prices have followed generally similar trends throughout this period, although over the past year gasoline prices have had slightly greater price fluctuations than diesel prices. Generally, both prices have moved in tandem, decreasing over the first few months of 2016, reaching a low of \$1.85 per gallon for gasoline and \$2.20 per gallon for diesel in February 2016. Prices for both increased slowly but steadily throughout 2016, 2017, and early 2018, reaching a high of \$2.97 per gallon for gasoline in May 2018. Prices fluctuated within a narrow range for the remainder of 2018, with diesel reaching a high of \$3.52 per gallon in October 2018. Prices of both gasoline and diesel fell in late 2018 and early 2019. Between February and May 2019 prices rose, with gasoline prices increasing more rapidly than diesel prices. For the remainder of 2019, prices decreased slightly, with diesel prices remaining very stable and gasoline prices experiencing slightly more volatility.



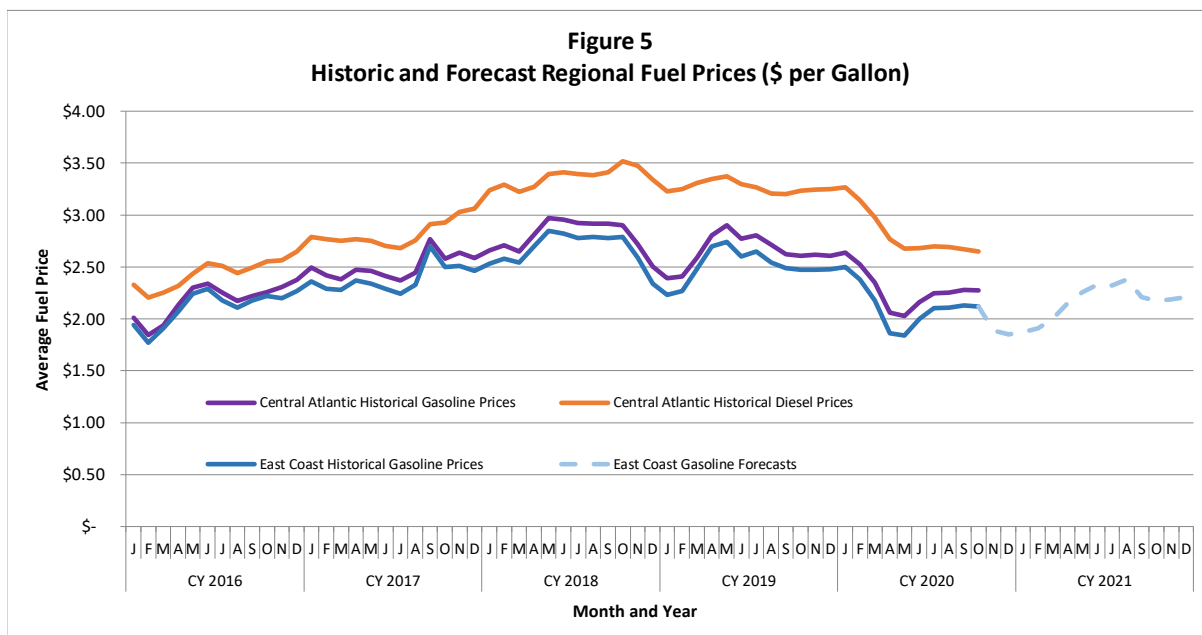
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However, in 2020 prices have fallen sharply first in response to an early March announcement that Saudi Arabia and Russia would increase oil supply in the coming months followed shortly thereafter by an extreme worldwide economic slowdown in response to the COVID-19 pandemic. As a result, May 2020 prices in the Central Atlantic region fell to \$2.03 and \$2.68 for gasoline and diesel, respectively. October 2020 prices for gasoline and diesel are \$2.28 and \$2.65, respectively; Over the last several months prior to October, prices increased slightly for gasoline but remained relatively stable 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. East Coast gasoline prices are forecast to remain low, but stable, over the next few months, bottoming out in December at \$1.85 per gallon. Prices are then forecast to rise in early 2021, peaking at \$2.38 per gallon in the spring and summer of 2021 before falling slightly in the fall and winter.

Based on historical trends, Central Atlantic prices can be expected to follow the same pattern, but at slightly higher prices. The most recent gasoline prices are about \$0.30 higher than assumed they would be at this time in the 2020 Bring Down Letter. However, the current gasoline price forecasts for 2021 are more similar to those from the 2020 Bring Down Letter. The increase in gasoline prices since May is a good indicator of a faster and stronger economic recovery than expected at the time of the 2020 Bring Down Letter, which largely aligns with the revised GDP and GSP forecasts discussed previously.





Source: U.S. Energy Information Administration, release dates 11/16/2020 (historical) and 11/10/2020 (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 in that it highlights consumer’s confidence in making purchases, their willingness to travel more, etc. Higher consumer confidence spurs demand for various goods and services, and it can be inferred that higher demand results in higher traffic on the roadways.

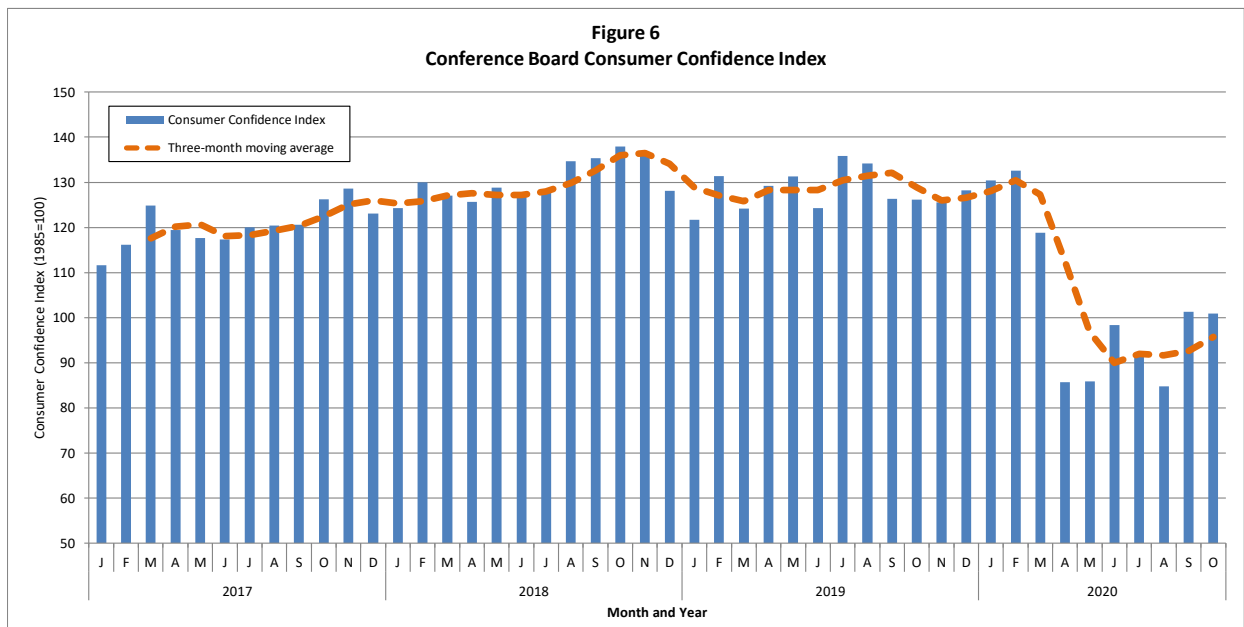
Figure 6 shows the Conference Board Consumer Confidence Index for the period between January 2017 and October 2020. The individual blue bars show the index values for each month while the dotted line shows the three-month moving average. Consumer confidence scores are indexed to the year 1985, for which consumer confidence equaled 100.

As shown in Figure 6, consumer confidence trended up through November 2018. The average exceeded 110 at the beginning of 2017, rose to 126 by the end of the year, and surpassed 130 in 2018, peaking at a high of 137.9 in October, which was the highest level of consumer confidence since September 2000. In 2019, consumer confidence fell slightly compared to 2018 but remained strong compared to historical levels. Through the first two months of 2020, consumer confidence remained strong, increasing slightly since the end of 2019. However, consumer confidence declined sharply in March and even more significantly in April, when it fell to 85.7, reflecting the widespread economic shutdowns that were put in place as a result of the COVID-19 pandemic. In the following



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months, consumer confidence fluctuated but trended upwards, reflecting both easing of economic restrictions as well as various waves of increased infection rates through the summer and fall. October’s consumer confidence index, while preliminary and subject to change with the next release, stood at 100.9, slightly below September’s level but otherwise the highest consumer confidence has been since the start of the pandemic. According to the Senior Director of Economic Indicators at the Conference Board, “Consumers’ assessment of current conditions improved [in October] while expectations declined, driven primarily by a softening in the short-term outlook for jobs. There is little to suggest that consumers foresee the economy gaining momentum in the final months of 2020, especially with COVID-19 cases on the rise and unemployment still high.”



Source: The Conference Board, release date October 27, 2020



Committed Roadway Improvements

Table 15 lists major capacity-enhancing roadway improvements with dedicated funding on the Pennsylvania Turnpike System. 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 metro areas. Nearly 140 miles had been completed as of January 2020, with an additional 20 miles under construction or funded. An additional 15 miles of the Northeast Extension have been widened, with 15 more miles scheduled to be completed by 2026. No projects have been added to or removed from the list since the 2020 Bring Down Letter, although some dates and mileposts were updated to reflect the latest information available from PTC.

In addition to roadway widening, Table 15 highlights three additional projects:

- A new cashless tolling interchange between I-276 and Lafayette Street in Montgomery County;
- An eight-mile extension of MFE to PA Route 837 in Allegheny County; and
- A 12.5-mile extension of Findlay Connector (Southern Beltway) in the Pittsburgh area.

These projects will serve to enhance capacity and create additional connections to other routes, all of which are expected to increase the number of travelers, and therefore revenue, on the Pennsylvania Turnpike System.

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.

Table 15
Major Committed Roadway Improvements on the Pennsylvania Turnpike System (1)

Milepost	Counties	Description	Actual or Assumed Start Date	Assumed Completion Date
Mainline I-76/I-276				
28-31	Allegheny and Butler	Reconstruct and widen to 3 lanes in each direction	May 2020	September 2022
99-109	Somerset County	Reconstruct and widen to 3 lanes in each direction	March 2021	Fall 2023
123-130	Somerset and Bedford	Reconstruct and widen to 3 lanes in each direction	2022	2025
331	Montgomery	Construct a new cashless tolling interchange at Lafayette Street	Fall 2024	Fall 2027
Northeast Extension I-476				
A31-A38	Montgomery	Reconstruct and widen to 3 lanes in each direction	Early 2018	June 2021
A38-A44	Montgomery and Bucks	Reconstruct and widen to 3 lanes in each direction	Fall 2021	Fall 2026
Mon/Fayette Expressway Turnpike 43				
PA-51 to PA Route 837	Allegheny	Construct a eight-mile extension of the existing Turnpike 43 including three new interchanges	Summer 2022	2028
Southern Beltway Toll 576				
US-22 to I-79	Washington and Allegheny	Construct a 12.5-mile cashless tolling extension of Toll 576 from the southern terminus of the Findlay Connector at US-22 to I-79 including four new interchanges	December 2016	October 2022

(1) The major committed roadway improvement projects listed here are a small subset of all projects listed in PTC's FY 2020 Ten Year Capital Plan.

Actual Versus Estimated Traffic and Toll Revenue

Table 16 provides a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith's 2020 Bring Down Letter. The analysis period in this table is from May 2020 through October 2020. This six-month period corresponds to the period for which actual data currently exists but was estimated at the time of the 2020 Bring Down Letter.

For the six-month period shown in Table 16, total system actual PC transactions surpassed estimates by 8.4 percent, and PC toll revenue fell short of estimates by 4.6 percent. CV transactions exceeded estimates by 20.2 percent, and actual CV toll revenue was 3.5 percent greater than estimates. When all vehicles are considered, actual transactions were higher than estimates by 10.5 percent and toll revenue underperformed estimates by 0.6 percent.

These discrepancies may be partially explained by two conditions that the 2020 Bring Down Letter assumed would happen but did not actually occur:

- a return to cash collection on the Ticket System in mid-June and continuation of cash collection on both the Ticket System and MFE until AET conversion in October 2021; and
- a system-wide six-percent toll increase and the implementation of a 45-percent cash surcharge on the Ticket System and MFE beginning in October 2020.





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Instead, AET was made permanent on the Ticket System and MFE converted to AET in June 2020 and all toll increases were postponed until January 2021. These divergences from assumed conditions would have reduced revenue relative to the assumptions made in the forecast.

A comparison between forecast and actuals for the five-month period from June to September reveals that total actual revenue outperformed total forecast revenue by 2.1 percent. Therefore, it is likely that had PTC implemented toll increases in October, as assumed in the 2020 Bring Down Letter, actual revenue would have continued to outperform estimated revenue.

Table 16 also includes a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith's 2020 Bring Down Letter for each individual Turnpike toll facility for the period from June to October 2020. Total transactions for the Ticket System were 10.9 percent higher than the forecasted traffic, while actual total revenue was 1.8 percent lower than estimated. For the combined barrier toll facilities, total actual toll transactions exceeded CDM Smith estimates by 9.3 percent and actual toll revenue exceeded estimates by 6.6 percent.



Table 16
Comparison of Estimated and Actual Traffic Volumes and Gross Toll Revenue
From May 2020 Through October 2020 (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
Passenger Cars						
Ticket System	45,691	49,598	8.6	\$252,910	\$236,457	(6.5)
Gateway	1,325	1,376	3.8	10,130	9,817	(3.1)
Delaware River Bridge	3,580	3,543	(1.0)	20,647	20,619	(0.1)
Turnpike 43	4,755	5,801	22.0	8,782	10,171	15.8
Turnpike 66	2,367	2,960	25.0	4,578	6,013	31.3
Northeast Extension (Barrier)	2,037	1,734	(14.9)	2,589	2,329	(10.0)
Turnpike I-376	2,846	2,923	2.7	5,223	5,350	2.4
Turnpike I-576	621	595	(4.1)	886	843	(4.9)
Barrier Subtotal	17,533	18,932	8.0	\$52,837	\$55,142	4.4
Total System	63,224	68,530	8.4	\$305,747	\$291,600	(4.6)
Commercial Vehicles						
Ticket System	10,006	12,189	21.8	\$266,466	\$273,314	2.6
Gateway	462	565	22.4	10,536	12,161	15.4
Delaware River Bridge	679	819	20.6	14,605	16,271	11.4
Turnpike 43	486	550	13.1	2,769	2,746	(0.8)
Turnpike 66	504	580	15.3	2,760	2,873	4.1
Northeast Extension (Barrier)	604	664	9.9	4,098	4,279	4.4
Turnpike I-376	647	749	15.7	2,502	2,592	3.6
Turnpike I-576	175	189	7.9	588	600	2.1
Barrier Subtotal	3,557	4,117	15.7	\$37,858	\$41,521	9.7
Total System	13,562	16,306	20.2	\$304,324	\$314,836	3.5
Total Vehicles						
Ticket System	55,697	61,787	10.9	\$519,376	\$509,772	(1.8)
Gateway	1,787	1,942	8.6	20,667	21,978	6.3
Delaware River Bridge	4,259	4,363	2.4	35,252	36,890	4.6
Turnpike 43	5,241	6,351	21.2	11,551	12,917	11.8
Turnpike 66	2,871	3,541	23.3	7,338	8,887	21.1
Northeast Extension (Barrier)	2,642	2,398	(9.2)	6,686	6,607	(1.2)
Turnpike I-376	3,493	3,671	5.1	7,726	7,942	2.8
Turnpike I-576	796	784	(1.5)	1,474	1,443	(2.1)
Barrier Subtotal	21,089	23,049	9.3	\$90,695	\$96,664	6.6
Total System	76,786	84,836	10.5	\$610,071	\$606,436	(0.6)

(1) These six months correspond to the period for which actual data exists, but was estimated at the time of CDM Smith's 2020 Bring Down Letter.



Estimated COVID-19 Traffic and Toll Revenue Impacts

A key undertaking of this new forecast was to update the traffic and toll revenue impacts related to the COVID-19 pandemic over the forecast period. This section will provide a summary of the underlying assumptions CDM Smith has made in estimating the depth and longevity of the COVID-19 related impacts on Turnpike System traffic and toll revenue. Actual traffic and toll revenue experience through the end of October 2020 was collected as part of this analysis. Total Turnpike System traffic and revenue losses for each month affected by the pandemic (March through October 2020) were shown above in Table 3 for the total System. A key assumption in this analysis is that COVID-19 related negative impacts would extend through FY 2025-26.

Due to the unpredictable nature of the pandemic and the changing infection rates, changes to operating procedures and capacity restrictions of businesses and schools is still an unknown. While restrictions are currently looser than they were at the time of 2020 Bring Down Letter in May, some states and cities have recently begun to tighten restrictions as COVID-19 cases have surged in the late autumn. Conversely, with vaccine distributions beginning in December, restrictions are likely to lessen in 2021 as a larger percentage of the population becomes vaccinated. For the purposes of this analysis, it is assumed that winter traffic will be significantly lower than in 2019, driven by a potential increase in restrictions and comparatively low levels of holiday traffic. (Preliminary daily traffic from the week of Thanksgiving showed traffic levels that were significantly lower than in prior years, and the December holiday season is anticipated to follow the same pattern). In the spring, as vaccinations are rolled out to a wider swath of the population, restrictions lessen, and warmer weather allows for additional outdoor activity, the traffic recovery is assumed to accelerate.

Table 17 shows estimated COVID-19 related impacts on traffic and toll revenue over the forecast period. Only the final three months of FY 2019-2020 (March, April, May) were impacted, but over that time total traffic volumes were estimated to have been reduced by 21.9 million, or about 10.7 percent of total transactions. Gross toll revenue was reduced by about \$142.2 million over the same time period (9.9 percent of total gross toll revenue). While the peak monthly negative impacts occurred in FY 2019-20, the largest annual declines are assumed to occur in FY 2020-21 since this will include 12 months of negative impacts. As shown in Table 17, total transaction losses of 30.5 million are assumed (15.2 percent of total transactions), along with gross toll revenue losses of \$252.1 million (16.7 percent of total gross toll revenue). Negative traffic and toll revenue impacts are estimated to lessen over the following five years. By FY 2025-26 total traffic and gross toll revenue losses are assumed to be only about 0.3 percent and 0.9 percent, respectively. No COVID-19 impact is assumed beginning in FY 2026-27.

As shown, CV transactions are actually assumed to increase slightly after FY 2019-20, while CV revenue is expected to be negatively impacted during the entire COVID-19 period. This is due to a

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combination of shorter, more frequent, CV trips, as well as a shift to smaller trucks during the pandemic. Both the shorter trip length and smaller vehicle class would result in lower CV toll revenue in spite of slightly more CV transactions. FY 2020-21 includes an analysis of actual traffic and revenue data through October 2020 and the resulting COVID-19 impacts.

Table 17
Estimated Annual Transactions and Gross Toll Revenue COVID Impact (1)
Total System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	Annual Traffic			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
Annual Traffic and Gross Toll Revenue Impacts						
2018-19 (2,3,4)	\$0	\$0	\$0	\$0	\$0	\$0
2019-20 (2,5,6)	(21,072)	(780)	(21,852)	(114,658)	(27,543)	(142,201)
2020-21 (7,8,9,10,11)	(31,543)	1,008	(30,534)	(208,001)	(44,073)	(252,074)
2021-22 (11,12)	(14,002)	333	(13,668)	(99,637)	(33,759)	(133,396)
2022-23 (11)	(8,883)	151	(8,732)	(70,817)	(24,225)	(95,042)
2023-24 (11)	(6,839)	63	(6,776)	(50,763)	(17,488)	(68,252)
2024-25 (11)	(4,050)	53	(3,997)	(33,426)	(11,388)	(44,814)
2025-26 (11)	(608)	75	(533)	(13,477)	(4,443)	(17,920)
2026-27	0	0	0	0	0	0
Percent Impacts on Annual Traffic and Gross Toll Revenue						
2018-19 (2,3,4)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2019-20 (2,5,6)	(12.2)	(2.6)	(10.7)	(14.4)	(4.3)	(9.9)
2020-21 (7,8,9,10,11)	(18.5)	3.4	(15.2)	(24.8)	(6.6)	(16.7)
2021-22 (11,12)	(8.2)	1.1	(6.8)	(10.9)	(4.7)	(8.2)
2022-23 (11)	(5.1)	0.5	(4.3)	(7.4)	(3.2)	(5.5)
2023-24 (11)	(3.9)	0.2	(3.3)	(5.0)	(2.2)	(3.8)
2024-25 (11)	(2.3)	0.2	(1.9)	(3.1)	(1.3)	(2.3)
2025-26 (11)	(0.3)	0.2	(0.3)	(1.2)	(0.5)	(0.9)
2026-27	0	0	0	0	0	0

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The Findlay Connector converted to AET in early June 2018.
- (4) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (5) AKH and Gateway converted to AET at the end of October 2019.
- (6) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
- (7) Mon-Fayette Expressway converted to AET on June 11, 2020.
- (8) Reflects actual experience through October 2020.
- (9) Reflects Ticket System and PA 43 45% cash surcharge effective on January 3, 2021.
- (10) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (11) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (12) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



Estimated Traffic and Gross Toll Revenue

Updated traffic and gross toll revenue estimates were developed through FY 2049-50 incorporating the following changes into the forecast. All these changes were described in previous sections.

- Actual traffic and revenue experience through October 2020 (Tables 3-12);
- Revised toll increase assumptions (Table 13);
- Revised estimates of E-ZPass penetration rates (Table 14); and
- Impacts related to COVID-19 (Table 17);

Other assumptions remain unchanged from the 2020 Bring Down Letter including:

- Structure of the CV discount program; and
- Long-range economic indicators.

Table 18 shows the total traffic and toll revenue for the Ticket System only. Data for FY 2018-19 and FY 2019-20 reflect a full year of actual experience and FY 2020-21 includes five months of actual experience (through October 2020). Total toll transactions increase from 151.6 million to 186.4 million over the forecast period, an average annual increase of 0.7 percent. Gross toll revenue increases from \$1.2 billion to \$4.4 billion by FY 2049-50. This amounts to an average annual increase of 4.4 percent, reflecting the impact of normal growth plus the annual rate adjustments.

The same information is shown for the Barrier System in **Table 19**. Total annual toll transactions are estimated to grow from 51.5 million to 72.7 million over the forecast period, an average rate of 1.1 percent. New toll transactions from the opening of the Southern Beltway in January 2022 contribute to total barrier growth rates. Barrier System total revenue is estimated to increase from \$184.4 million to \$738.0 million over the forecast period, an annual rate of 4.6 percent, reflecting normal growth plus annual rate adjustments.

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Table 18
Estimated Annual Transactions and Gross Toll Revenue (1)

Ticket System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	Annual Traffic			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
2018-19 (2,3)	129,559	22,020	151,579	\$626,685	\$524,309	\$1,150,994
2019-20 (2,4)	112,482	21,670	134,151	571,829	529,718	1,101,547
2020-21 (5,6,7,8)	101,774	23,237	125,012	517,584	543,927	1,061,511
2021-22 (8)	114,281	22,575	136,855	678,173	596,629	1,274,801
2022-23 (8)	118,499	22,525	141,024	739,147	641,133	1,380,280
2023-24 (8)	120,379	22,638	143,018	799,550	685,193	1,484,742
2024-25 (8)	123,644	22,835	146,479	863,292	731,117	1,594,409
2025-26 (8)	127,728	23,082	150,810	930,135	777,541	1,707,676
2026-27	130,879	23,330	154,208	986,717	817,147	1,803,863
2027-28	132,346	23,534	155,880	1,028,247	849,195	1,877,442
2028-29	133,781	23,766	157,547	1,067,546	881,907	1,949,453
2029-30	135,186	24,040	159,226	1,108,812	918,773	2,027,584
2030-31	136,559	24,315	160,873	1,153,319	957,129	2,110,448
2031-32	137,918	24,589	162,507	1,200,362	996,949	2,197,310
2032-33	139,264	24,862	164,126	1,249,084	1,038,282	2,287,366
2033-34	140,563	25,136	165,699	1,299,236	1,081,191	2,380,427
2034-35	141,824	25,409	167,233	1,350,921	1,125,745	2,476,666
2035-36	143,049	25,683	168,732	1,404,199	1,172,012	2,576,211
2036-37	144,253	25,952	170,204	1,459,264	1,219,787	2,679,051
2037-38	145,376	26,212	171,589	1,515,549	1,268,999	2,784,547
2038-39	146,461	26,473	172,935	1,573,491	1,320,086	2,893,577
2039-40	147,531	26,735	174,266	1,633,389	1,373,123	3,006,511
2040-41	148,579	26,997	175,577	1,695,243	1,428,191	3,123,434
2041-42	149,604	27,260	176,864	1,759,069	1,485,375	3,244,444
2042-43	150,596	27,524	178,121	1,824,831	1,544,753	3,369,585
2043-44	151,564	27,790	179,353	1,892,656	1,606,420	3,499,076
2044-45	152,507	28,056	180,562	1,962,612	1,670,457	3,633,069
2045-46	153,423	28,323	181,746	2,034,725	1,736,950	3,771,675
2046-47	154,327	28,591	182,918	2,109,231	1,806,002	3,915,234
2047-48	155,218	28,861	184,079	2,186,235	1,877,723	4,063,959
2048-49	156,115	29,133	185,248	2,266,051	1,952,292	4,218,343
2049-50	157,017	29,408	186,424	2,348,780	2,029,822	4,378,603

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (4) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
- (5) Reflects actual experience through October 2020.
- (6) Reflects Ticket System 45% video surcharge effective on Jan 3, 2021.
- (7) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (8) Reflects COVID-19 related recessionary impacts through FY 2025-26.



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Table 19
Estimated Annual Transactions and Gross Toll Revenue (1)
Barrier Systems
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	Annual Traffic			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles
2018-19 (2,3,4)	43,870	7,605	51,475	\$113,893	\$70,498	\$184,392
2019-20 (2,5)	39,819	7,599	47,418	112,089	75,925	188,014
2020-21 (6,7,8,9,10)	37,159	7,723	44,882	112,251	81,307	193,558
2021-22 (10,11)	42,410	8,158	50,568	134,624	87,304	221,928
2022-23 (10)	46,803	8,870	55,673	147,641	94,074	241,715
2023-24 (10)	48,743	9,065	57,808	158,932	99,489	258,421
2024-25 (10)	50,458	9,262	59,720	170,794	105,534	276,328
2025-26 (10)	52,065	9,415	61,480	182,994	111,462	294,456
2026-27	53,293	9,538	62,831	193,592	116,753	310,345
2027-28	53,788	9,605	63,393	201,911	121,537	323,449
2028-29	54,281	9,683	63,964	209,923	126,359	336,283
2029-30	54,749	9,778	64,527	218,149	131,684	349,834
2030-31	55,182	9,871	65,053	226,584	137,204	363,788
2031-32	55,581	9,964	65,545	235,268	142,930	378,197
2032-33	55,966	10,056	66,021	244,279	148,867	393,145
2033-34	56,331	10,147	66,478	253,607	155,027	408,634
2034-35	56,687	10,238	66,925	263,220	161,400	424,620
2035-36	57,033	10,329	67,362	273,127	167,984	441,111
2036-37	57,370	10,419	67,789	283,346	174,790	458,136
2037-38	57,691	10,508	68,199	293,807	181,813	475,621
2038-39	58,009	10,596	68,605	304,575	189,105	493,680
2039-40	58,326	10,685	69,011	315,709	196,676	512,385
2040-41	58,640	10,773	69,413	327,207	204,535	531,743
2041-42	58,945	10,862	69,807	339,059	212,692	551,750
2042-43	59,241	10,950	70,190	351,257	221,156	572,413
2043-44	59,528	11,037	70,565	363,823	229,940	593,763
2044-45	59,808	11,125	70,933	376,768	239,057	615,825
2045-46	60,078	11,212	71,290	390,096	248,517	638,613
2046-47	60,341	11,299	71,640	403,834	258,334	662,168
2047-48	60,599	11,386	71,985	418,006	268,524	686,530
2048-49	60,857	11,474	72,331	432,675	279,116	711,791
2049-50	61,117	11,562	72,679	447,860	290,125	737,985

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The Findlay Connector converted to AET in early June 2018.
- (4) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (5) AKH and Gateway converted to AET at the end of October 2019.
- (6) Mon-Fayette Expressway converted to AET on June 11, 2020.
- (7) Reflects actual experience through October 2020.
- (8) Reflects PA 43 45% video surcharge effective on January 3, 2021.
- (9) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (10) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (11) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Table 20 presents total combined Ticket and Barrier System transactions and gross toll revenue and also reflects estimated toll discounts and adjustments. The vast majority of the discounts and adjustments result from commercial account toll adjustments due to the Turnpike's volume discount program. The volume discount program allows for a 3.0-percent discount to be provided to accounts that accrue \$20,000 or more in monthly tolls. Discounts and adjustments shown in Table 20 assume no further changes to the post-paid commercial volume discount program during the forecast period. Actual discounts and adjustments amounted to 1.65 percent of CV toll revenue in FY 2019-20. It has been increasing very slightly over time. CDM Smith's forecasts assume that the adjustment gradually increases until it equals approximately 2.17 percent of the CV gross toll revenue in FY 2029-30 and remains at that level throughout the remainder of the forecast.

As shown in Table 20, total toll transactions are expected to increase from 203.1 million to 259.1 million over the forecast period. This amounts to an average annual growth rate of 0.8 percent. Total net toll revenue is estimated to grow from approximately \$1.3 billion in FY 2018-19 to \$5.1 billion by FY 2049-50. This reflects an average annual growth rate in gross toll revenue of 4.4 percent. Again, this includes the impact of normal growth plus annual toll rate adjustments.





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Table 20
Estimated Annual Transactions and Toll Revenue (1)
Total System
Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	Annual Traffic			Annual Gross Toll Revenue			Discounts and Adjustments	Net Toll Revenue
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Vehicles		
2018-19 (2,3,4)	173,429	29,625	203,054	\$740,578	\$594,808	\$1,335,385	(\$8,349)	\$1,327,037
2019-20 (2,5)	152,301	29,269	181,570	683,918	605,642	1,289,561	(9,972)	1,279,588
2020-21 (6,7,8,9,10,11)	138,933	30,961	169,894	629,835	625,234	1,255,070	(11,567)	1,243,503
2021-22 (11,12)	156,691	30,733	187,424	812,796	683,932	1,496,729	(12,995)	1,483,734
2022-23 (11)	165,302	31,395	196,697	886,788	735,207	1,621,995	(14,337)	1,607,659
2023-24 (11)	169,122	31,704	200,826	958,482	784,682	1,743,163	(15,694)	1,727,470
2024-25 (11)	174,102	32,097	206,199	1,034,085	836,652	1,870,737	(17,151)	1,853,586
2025-26 (11)	179,794	32,497	212,291	1,113,129	889,003	2,002,132	(18,447)	1,983,685
2026-27	184,172	32,867	217,039	1,180,309	933,900	2,114,209	(19,612)	2,094,597
2027-28	186,134	33,139	219,273	1,230,158	970,733	2,200,891	(20,628)	2,180,262
2028-29	188,061	33,449	221,510	1,277,470	1,008,266	2,285,736	(21,678)	2,264,058
2029-30	189,935	33,818	223,753	1,326,961	1,050,457	2,377,418	(22,847)	2,354,571
2030-31	191,741	34,186	225,926	1,379,903	1,094,334	2,474,236	(23,802)	2,450,434
2031-32	193,500	34,552	228,052	1,435,629	1,139,878	2,575,508	(24,792)	2,550,715
2032-33	195,229	34,918	230,147	1,493,362	1,187,149	2,680,511	(25,820)	2,654,690
2033-34	196,894	35,283	232,177	1,552,843	1,236,218	2,789,061	(26,888)	2,762,173
2034-35	198,511	35,647	234,158	1,614,141	1,287,145	2,901,286	(27,995)	2,873,291
2035-36	200,082	36,012	236,094	1,677,326	1,339,996	3,017,322	(29,145)	2,988,177
2036-37	201,622	36,371	237,993	1,742,609	1,394,577	3,137,187	(30,332)	3,106,855
2037-38	203,068	36,720	239,788	1,809,356	1,450,812	3,260,168	(31,555)	3,228,613
2038-39	204,470	37,069	241,540	1,878,067	1,509,191	3,387,257	(32,825)	3,354,433
2039-40	205,857	37,420	243,276	1,949,098	1,569,798	3,518,896	(34,143)	3,484,753
2040-41	207,219	37,771	244,989	2,022,450	1,632,726	3,655,177	(35,512)	3,619,665
2041-42	208,549	38,122	246,671	2,098,128	1,698,067	3,796,195	(36,933)	3,759,262
2042-43	209,837	38,474	248,311	2,176,088	1,765,909	3,941,997	(38,409)	3,903,589
2043-44	211,092	38,827	249,919	2,256,479	1,836,360	4,092,839	(39,941)	4,052,898
2044-45	212,314	39,181	251,495	2,339,380	1,909,514	4,248,894	(41,532)	4,207,362
2045-46	213,502	39,535	253,036	2,424,821	1,985,467	4,410,288	(43,184)	4,367,104
2046-47	214,668	39,890	254,558	2,513,065	2,064,337	4,577,401	(44,899)	4,532,502
2047-48	215,817	40,247	256,064	2,604,241	2,146,247	4,750,488	(46,681)	4,703,807
2048-49	216,972	40,606	257,579	2,698,726	2,231,408	4,930,133	(48,533)	4,881,600
2049-50	218,134	40,969	259,103	2,796,638	2,319,947	5,116,586	(50,459)	5,066,127

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The Findlay Connector converted to AET in early June 2018.
- (4) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (5) AKH and Gateway converted to AET at the end of October 2019.
- (6) Cash collection on Ticket System suspended and converted to AET on March 16, 2020.
- (7) Mon-Fayette Expressway converted to AET on June 11, 2020.
- (8) Reflects actual experience through October 2020.
- (9) Reflects Ticket System and PA 43 45% video surcharge effective on January 3, 2021.
- (10) Reflects 6% Systemwide toll increase and 15% discount to registered video customers effective January 3, 2021.
- (11) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (12) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Table 21 provides a comparison of the current traffic and net toll revenue forecast with the forecast developed as part of the 2020 Bring Down Letter. As shown, the revised total toll transactions are less than those of the 2020 Bring Down Letter from FY 2020-21 through FY 2024-25. This is due to slightly more negative assumptions regarding the impacts of COVID-19 in the current forecast. For the period between FY 2025-26 and FY 2026-27, the current study assumes a slightly higher growth rate compared to the 2020 Bring Down Letter, resulting in 0.7 percent higher volumes. This 0.7 percent increase in estimated transactions is due to changes to PTC's AET system that will cause some non-revenue transactions to be captured that were not previously. Because these additional transactions are non-revenue, they have no impact upon toll revenue estimates. After FY 2026-27 the growth rates between the two studies are identical, thus the 0.7 percent differential remains constant throughout the remainder of the forecast period.

Similarly, due to revised assumptions regarding COVID-19 impacts, annual net toll revenue is forecast to be somewhat lower each year through FY 2025-26 than previously estimated in the 2020 Bring Down Letter. The largest differences occur in FY 2020-21 and FY 2021-22, in which revenue is estimated to be 8.1 and 5.3 percent lower, respectively, than in the previous forecast. Delaying implementation of system-wide toll increases and the video surcharge on the Ticket System and MFE is estimated to have lowered revenue by 2.3 percent in FY 2020-21 compared to the previous forecast. The earlier conversion of AET on the Ticket System and MFE lowered revenue estimates by 1.9 percent in FY 2020-21 and 0.8 percent in FY 2021-22 due to AET-related leakage. In addition, as discussed above, the current forecast also has slightly more negative assumptions regarding the impacts of COVID-19 than did the previous forecast. These higher COVID-19 impact assumptions continue through FY 2025-26, when revenue is now estimated to be 0.6 percent lower than the previous forecast. Beginning in January 2021, annual net toll revenue is estimated to be 0.2 percent lower than the previous forecast due to the newly added RVA rate tier that provides a 15-percent discount to registered video customers and was not assumed in the 2020 Bring Down Letter.



Table 21
Comparison of New Traffic and Revenue
Estimates with those from the 2020 Bring Down Letter
Total System
Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year	Total Annual Transactions			Annual Net Toll Revenue		
	Current Estimates (1)	2020 Bring Down Letter (2)	Percent Difference	Current Estimates (1)	2020 Bring Down Letter (2)	Percent Difference
2018-19	203,054	203,054	0.0	\$1,327,037	\$1,327,037	0.0
2019-20	181,570	177,199	2.5	1,279,588	1,270,011	0.8
2020-21	169,894	172,463	(1.5)	1,243,503	1,352,391	(8.1)
2021-22	187,424	195,203	(4.0)	1,483,734	1,566,210	(5.3)
2022-23	196,697	201,385	(2.3)	1,607,659	1,661,401	(3.2)
2023-24	200,826	204,906	(2.0)	1,727,470	1,769,339	(2.4)
2024-25	206,199	208,398	(1.1)	1,853,586	1,882,092	(1.5)
2025-26	212,291	211,925	0.2	1,983,685	1,995,624	(0.6)
2026-27	217,039	215,424	0.7	2,094,597	2,098,894	(0.2)
2027-28	219,273	217,707	0.7	2,180,262	2,184,810	(0.2)
2028-29	221,510	219,991	0.7	2,264,058	2,268,876	(0.2)
2029-30	223,753	222,261	0.7	2,354,571	2,359,740	(0.2)
2030-31	225,926	224,433	0.7	2,450,434	2,455,774	(0.2)
2031-32	228,052	226,544	0.7	2,550,715	2,556,261	(0.2)
2032-33	230,147	228,624	0.7	2,654,690	2,660,452	(0.2)
2033-34	232,177	230,640	0.7	2,762,173	2,768,160	(0.2)
2034-35	234,158	232,607	0.7	2,873,291	2,879,512	(0.2)
2035-36	236,094	234,529	0.7	2,988,177	2,994,642	(0.2)
2036-37	237,993	236,415	0.7	3,106,855	3,113,571	(0.2)
2037-38	239,788	238,197	0.7	3,228,613	3,235,587	(0.2)
2038-39	241,540	239,937	0.7	3,354,433	3,361,675	(0.2)
2039-40	243,276	241,661	0.7	3,484,753	3,492,272	(0.2)
2040-41	244,989	243,363	0.7	3,619,665	3,627,471	(0.2)
2041-42	246,671	245,033	0.7	3,759,262	3,767,365	(0.2)
2042-43	248,311	246,662	0.7	3,903,589	3,911,998	(0.2)
2043-44	249,919	248,259	0.7	4,052,898	4,061,624	(0.2)
2044-45	251,495	249,824	0.7	4,207,362	4,216,416	(0.2)
2045-46	253,036	251,356	0.7	4,367,104	4,376,496	(0.2)
2046-47	254,558	252,867	0.7	4,532,502	4,542,245	(0.2)
2047-48	256,064	254,362	0.7	4,703,807	4,713,913	(0.2)
2048-49	257,579	255,867	0.7	4,881,600	4,892,083	(0.2)
2049-50	259,103	257,382	0.7	5,066,127	5,077,001	(0.2)

(1) Reflects actual traffic and revenue experience through October 2020.

(2) Reflects actual traffic and revenue experience through April 2020.





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Fiduciary Disclaimer

Current accepted professional practices and procedures were used in the development of these updated traffic and revenue forecasts. However, as with any forecast of the future, there may be differences between forecasted and actual results caused by events and circumstances beyond the control of CDM Smith. In formulating its forecasts, CDM Smith has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the PTC and other local and state agencies. CDM Smith also has relied upon the reasonable assurances of some independent parties and is not aware of any facts that would make such information misleading.

CDM Smith has made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue forecasts 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 to partial information extracted from this report.

All forecasts and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple state and local agencies, including the PTC. These estimates and projections may not be indicative of actual or future values and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty and may affect the forecasts or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any forecasts or projections contained within this report.

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

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to the 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





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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
Project Manager
CDM Smith Inc.

