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May 29, 2020

Mr. Nikolaus Grieshaber
Chief Financial Officer
Pennsylvania Turnpike Commission
700 South Eisenhower Boulevard
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Subject: Pennsylvania Turnpike Commission 2020 Traffic and Toll Revenue
Bring Down Letter

Dear Mr. Grieshaber:

The Pennsylvania Turnpike Commission (PTC or Commission) has asked CDM Smith to prepare this Bring Down Letter (2020 Bring Down Letter) to be used in support of the Commission's ongoing capital improvement program and other funding requirements. This letter provides an update to the 2019 Bring Down Letter, dated April 29, 2019, which in turn was an update to the 2018 Traffic and Toll Revenue Forecast Study (2018 Forecast Study), dated April 20, 2018. The 2019 Bring Down Letter presented traffic and gross toll revenue forecasts from fiscal year (FY) 2017-18 through FY 2048-49. A fiscal year runs from June 1 through May 31. Actual traffic and revenue data were available through February 2019 for the 2019 Bring Down Letter and through April 2020 for the current 2020 Bring Down Letter.

This 2020 Bring Down Letter presents actual traffic and toll revenue data through April 2020 (14 months of additional data since completion of the 2019 Bring Down Letter), provides updated traffic and revenue forecasts through FY 2049-50, and compares the new forecasts with those from the 2019 Bring Down Letter. The updated forecasts reflect the following changes from the 2019 Bring Down Letter:

- E-ZPass market share estimates over the forecast period were reviewed and updated.
- Actual traffic and toll revenue data were updated to include information through April 2020.
- Revised toll adjustment assumptions for calendar year 2021, which is now scheduled for a six-percent increase (as opposed to the five-percent increase that was previously planned). Additionally, this increase is scheduled to occur in October 2020 rather than January 2021 and will include an additional 45-percent increase for cash tolls. It should be noted that these two toll adjustment assumptions are proposed and haven't been formally approved yet by the PTC Board. Absent their approval, an across the board five-percent toll increase would occur on or about January 1, 2021.



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- A review and adjustment of short-term traffic and revenue growth rates was conducted through 2023 based on the most recent actual trends. Longer term growth rates beyond 2023 are based on those established in the 2019 Bring Down Letter.
- A review of the major roadway improvements for any changes since completion of the 2019 Bring Down Letter.
- And, perhaps most importantly, this forecast takes into account the impacts of the COVID-19 pandemic on estimated traffic and toll revenue over the forecast period.

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

It is important to note that the intent of this Bring Down Letter is to review and revise, if warranted, the short-term forecasts developed as part of the 2019 Bring Down Letter. Any adjustments would be made based on the 14 months of new actual traffic and toll revenue experience since the 2019 Bring Down Letter, including COVID-19 impacts. Adjustments were made through FY 2025-26 to account for the estimated longer term COVID-19 impacts. However, beyond that, this Bring Down Letter does not include a re-evaluation of the longer-term economic growth forecasts; those remain unchanged from the 2019 Bring Down Letter.

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.

Periodic toll rate increases were implemented on the Turnpike System in 1987, 1991, 2004, and 2009. During the 2000's 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.



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Table 1
Historical Toll Rate Increases
Pennsylvania Turnpike

Date	Percent Increase		Comment
	Cash/Video	E-ZPass	
1/2/1987	40.0	NA	E-ZPass was not yet implemented on the Turnpike
6/1/1991	32.0	NA	E-ZPass was not yet implemented on the Turnpike
8/1/2004	42.5	42.5	
1/4/2009	25.0	25.0	No increase on Findlay Connector or MFE between Uniontown and Brownsville
1/3/2010	3.0	3.0	No increase on Findlay Connector
1/2/2011	10.0	3.0	No increase on Findlay Connector
1/1/2012	10.0	0.0	No increase on Findlay Connector
1/6/2013	10.0	2.0	
1/5/2014	12.0	2.0	No increase on Findlay Connector
1/4/2015	5.0	5.0	No increase on Findlay Connector
1/3/2016	6.0	6.0	No increase on Findlay Connector; DRB converted from ticket system to barrier system and rate changes implemented
1/8/2017	6.0	6.0	No increase on Findlay Connector or DRB
1/7/2018	6.0	6.0	No increase on Findlay Connector, DRB, or the Northeast Extension barrier facilities
4/29/2018	6.0	6.0	Northeast Extension barrier facilities only (1)
6/3/2018	6.0	6.0	Findlay Connector only (1)
1/6/2019	6.0	6.0	
10/27/2019	6.0	6.0	BVE, AKH, and Gateway only; 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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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 all electronic tolling (AET); this has generally amounted to an additional 45 percent increase, making video rates about double E-ZPass rates. 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 and 5-axle commercial vehicles, 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. These facilities are marked with a diamond in Figures 1 and 2.

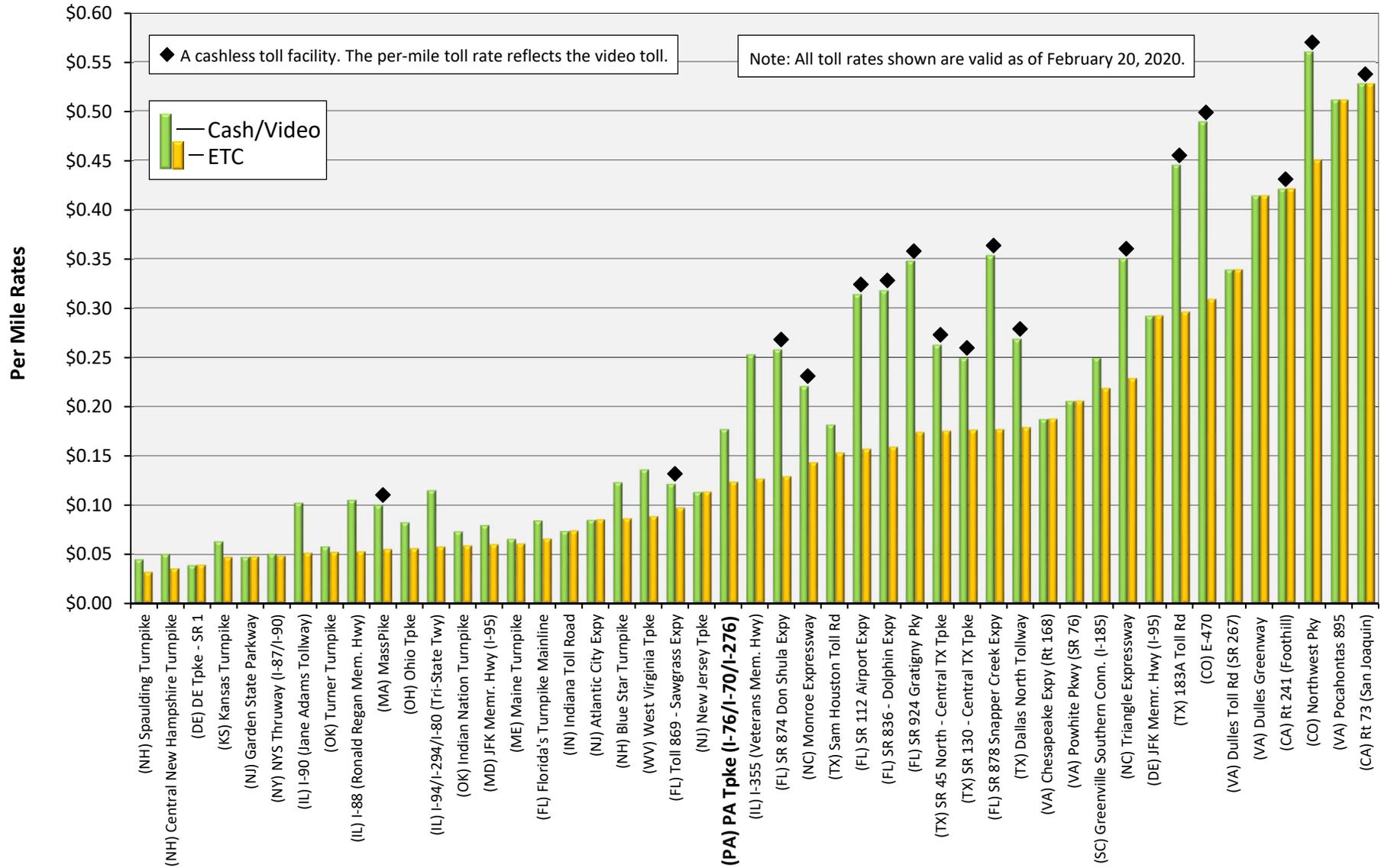
The per-mile through-trip toll rate is shown for the Pennsylvania Turnpike Mainline, which represents a trip on I-76/I-276 between New Jersey and Ohio. Figure 1 shows that even with the 12 consecutive annual toll increases since 2009, the passenger car per-mile toll rates on the Pennsylvania Turnpike System, at 12 cents per mile for E-ZPass customers and 18 cents per mile for cash customers, are still very reasonably priced compared to other toll facilities in the U.S.

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

Annual Transaction and Gross Toll Revenue Trends

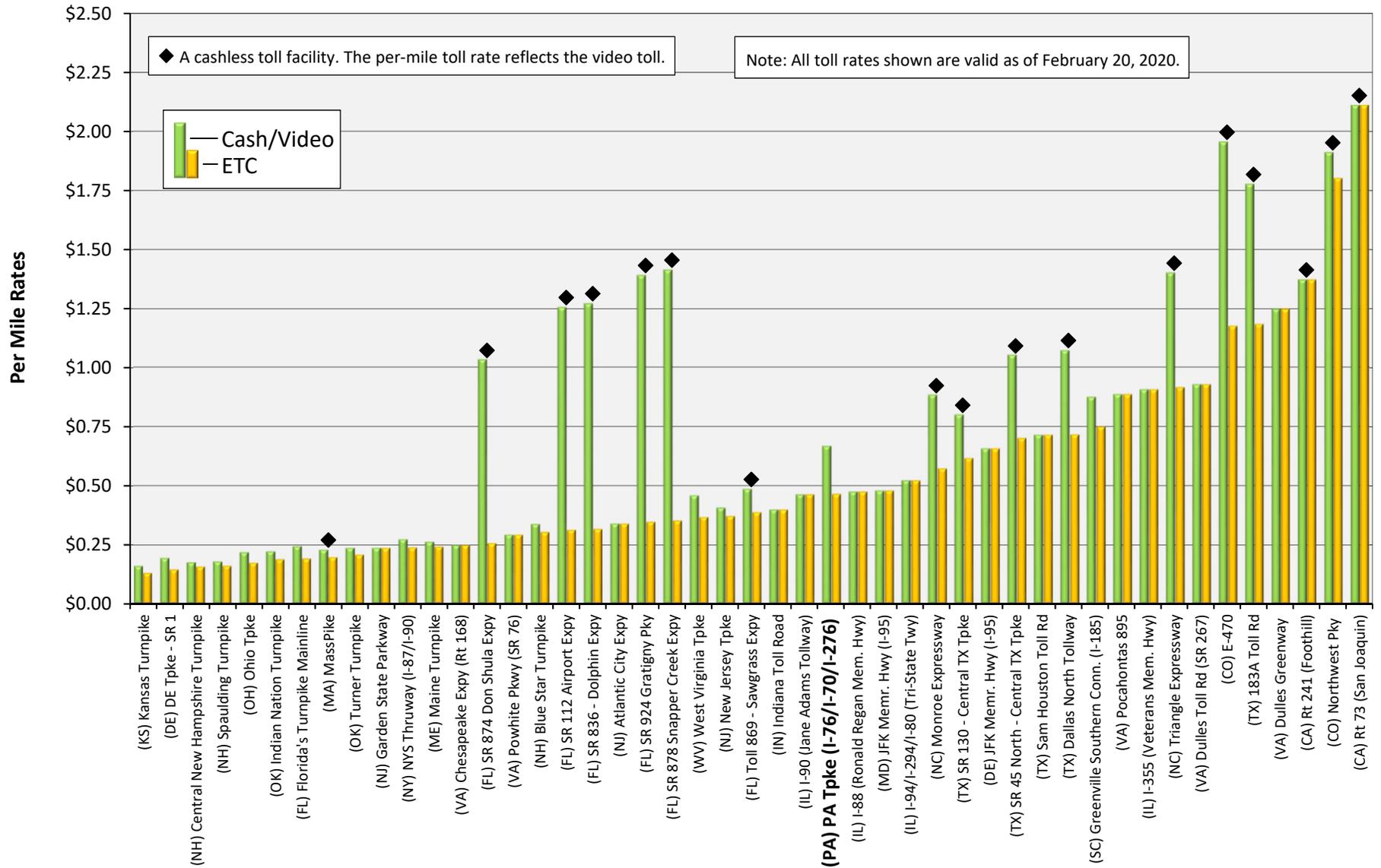
Table 2 provides a summary of annual systemwide transactions and gross toll revenue trends from FY 1994-95 through FY 2018-19. Notably, this table excludes non-revenue transactions from PTC's non-AET facilities. The Pennsylvania Turnpike System is a large, mature system that has demonstrated long-term growth in transactions and toll revenue. Between FY 1998-99 and FY 2008-09 there was only one toll rate increase (in 2004) and Turnpike transactions and gross toll revenue grew by an average annual rate of 1.8 percent and 5.8 percent, respectively. Conversely, in the 10 years from FY 2008-09 to FY 2018-19 there were toll rate increases every year. During this period Turnpike transactions grew by a comparatively lower average annual rate of 0.9 percent, while turnpike revenue grew by a higher average annual rate of 8.1 percent. In the most recently completed fiscal year (2018-19), traffic growth was 0.9 percent, while revenue growth was 11.0 percent, both equal to or larger than the average growth over the past 10 years.





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

Fiscal Year (1)	Transactions						Gross Toll Revenue					
	Cars	Percent	Trucks	Percent	Total	Percent	Cars	Percent	Trucks	Percent	Total	
		Change		Change		Change		Change		Change		Change
		Over		Over		Over		Over		Over		Over
		Prior		Prior		Prior		Prior		Prior		Prior
		Year		Year		Year		Year		Year		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

Fiscal Year	Average Annual Percent Change			Average Annual Percent Change		
	Transactions			Gross Toll Revenue		
	Cars	Trucks	Total	Cars	Trucks	Total
FY 1998-99 - FY 2008-09	1.8	1.7	1.8	6.4	5.0	5.8
FY 2008-09 - FY 2018-19	0.6	2.3	0.9	7.6	8.7	8.1
FY 1994-95 - FY 2018-19	1.8	2.7	1.9	6.4	6.5	6.5

- (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.

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 2016-17 through April 2020 for all PTC facilities. The information is provided for passenger cars, commercial vehicles, and total vehicles. For comparative purposes, subtotals are provided for June through April 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.

The 2018 Investment Grade Study and 2019 Bring Down Letter both included the Gateway Toll Plaza with the Ticket System. With the conversion of the Gateway Toll Plaza to AET in October 2019, it is now reported as a stand-alone facility separate from the Ticket System. Gateway traffic and revenue data for previous years have been extracted from Ticket System data and included in Table 12, so year-to-year comparisons for both Table 4 and Table 12 are consistent.

As shown in Table 3, systemwide gross toll revenue increased by 7.9 percent in FY 2017-18 and 11.0 percent in FY 2018-19. Year-to-date (June 2019 through April 2020) toll revenue growth had declined by less than 0.1 percent compared to the same period in the prior year. Commercial vehicle toll revenue increased by 3.2 percent and passenger car toll revenue decreased by 2.7 percent from June 2019 through April 2020 compared to the same time period in the prior year. Annual toll revenue growth has exceeded annual transaction growth due to the annual toll increase adjustments. Year-to-date transactions decreased by 9.5 percent for passenger cars and 1.4 for commercial vehicles, resulting in an 8.3-percent decrease for total vehicles.



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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 Vehicles		
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20
June	11,681	0.1	11,695	1,942	(0.2)	1,938	13,623	0.1	13,633
July	11,813	(1.3)	11,596	1,845	(1.5)	1,817	13,658	(1.4)	13,471
August	12,006	0.1	12,015	1,993	0.1	1,995	13,999	0.1	14,009
September	11,186	(0.7)	11,110	1,857	(1.9)	1,823	13,044	(0.9)	12,933
October	11,547	(0.0)	11,547	1,846	3.6	1,913	13,397	0.5	13,506
November	11,016	(1.0)	10,905	1,697	3.3	1,754	12,713	(0.4)	12,659
December	10,749	(2.6)	10,464	1,655	(1.0)	1,638	12,404	(2.4)	12,102
January	9,816	(1.6)	9,655	1,564	6.0	1,658	11,381	(0.6)	11,313
February	9,030	1.3	9,152	1,441	6.8	1,539	10,472	2.1	10,691
March	10,344	(0.5)	10,288	1,711	1.2	1,732	12,054	(0.3)	12,020
April	10,971	(1.2)	10,836	1,727	3.9	1,795	12,698	(0.2)	12,631
May	11,557	(0.6)	11,485	1,916	3.4	1,981	13,474	(0.1)	13,465
Total Year	131,721	(0.7)	130,805	21,195	1.8	21,382	152,915	(0.3)	152,387
Jun - Apr	120,163	(0.7)	119,321	19,278	1.7	19,601	139,442	(0.4)	138,922
			105,429			20,030			15,465

Month	Passenger Cars			Commercial Vehicles			Total Revenue		
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20
June	\$48,540	9.0	\$52,913	\$37,574	4.6	\$39,308	\$86,113	7.1	\$92,221
July	53,525	5.2	56,299	36,068	2.4	36,939	89,593	4.1	93,238
August	51,004	8.2	55,199	38,164	6.6	40,569	89,168	7.5	95,868
September	46,395	3.9	48,195	36,039	3.5	37,290	82,434	3.7	85,485
October	46,690	5.6	49,321	35,017	12.0	39,232	81,707	8.4	88,553
November	44,524	6.0	47,189	32,451	10.9	35,991	76,975	8.1	83,181
December	42,977	3.8	44,599	32,414	6.1	34,402	75,390	4.8	79,001
January	38,258	4.3	39,895	32,708	14.4	37,423	70,967	8.9	77,318
February	34,772	9.3	38,015	30,228	17.6	35,551	65,001	13.2	73,566
March	41,479	10.5	45,839	36,315	11.4	40,462	77,793	10.9	86,301
April	47,629	2.7	48,924	35,780	13.9	40,759	83,409	7.5	89,683
May	49,996	6.6	53,304	38,497	16.2	44,726	88,493	10.8	96,030
Total Year	\$545,788	6.2	\$579,692	\$421,255	9.9	\$462,754	\$967,044	7.8	\$1,042,446
Jun - Apr	\$495,793	6.2	\$526,389	\$382,758	9.2	\$418,027	\$878,551	7.5	\$944,416
			\$56,899			\$44,726			\$97,929

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.



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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			Commercial Vehicles			Total Vehicles							
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20					
June	3,714	0.8	3,743	1.0	3,782	5.5	3,992	1.3	4,379	1.4	4,439	5.0	4,661	
July	3,970	(2.5)	3,869	2.6	3,970	6.3	4,218	574	4.9	602	9.2	657	6.7	702
August	3,961	(0.5)	3,942	4.4	4,115	4.1	4,286	624	7.0	667	7.1	715	0.1	716
September	3,631	(0.5)	3,614	1.5	3,667	4.0	3,814	585	4.1	609	3.2	628	6.9	672
October	3,685	(0.3)	3,674	6.5	3,913	2.3	4,001	583	8.8	635	11.6	709	4.3	739
November	3,443	(0.9)	3,412	6.0	3,618	0.1	3,620	539	5.5	569	6.8	607	4.3	634
December	3,302	(0.6)	3,282	7.2	3,519	1.3	3,564	498	1.9	508	7.9	548	6.7	585
January	2,792	3.4	2,887	5.7	3,051	5.0	3,203	450	15.1	517	10.0	569	6.8	608
February	2,377	18.0	2,806	6.9	2,999	3.4	3,101	374	32.3	495	6.4	526	7.5	566
March	3,072	7.5	3,303	7.3	3,543	(31.4)	2,431	505	11.3	562	8.5	610	(1.9)	598
April	3,428	(0.2)	3,423	8.0	3,698	(62.6)	1,382	541	9.3	592	13.1	669	(24.1)	508
May	3,703	1.3	3,752	6.5	3,896			626	8.0	676	4.7	708		
Total Year	41,078	1.5	41,707	5.2	43,870			6,508	8.6	7,068	7.6	7,605		
Jun-Apr	37,375	1.6	37,955	5.1	39,874	(5.7)	37,611	5,882	8.7	6,392	7.9	6,897	1.5	6,997

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20					
June	\$8,734	2.6	\$8,964	6.4	\$9,537	16.5	\$11,408	\$5,087	4.9	\$5,335	9.8	\$5,859	8.0	\$6,328
July	9,451	(0.3)	9,422	6.7	10,055	17.8	11,841	4,807	4.2	5,009	15.3	5,775	14.1	6,591
August	9,175	2.6	9,413	9.9	10,344	14.6	11,850	5,172	7.1	5,541	12.4	6,225	8.4	6,748
September	8,375	0.6	8,425	8.2	9,114	13.8	10,370	4,945	2.8	5,082	8.9	5,535	14.3	6,326
October	8,327	1.9	8,485	13.9	9,668	9.7	10,609	4,878	10.0	5,368	17.2	6,293	10.3	6,943
November	7,912	0.3	7,933	16.1	9,214	12.0	10,323	4,649	6.5	4,952	12.4	5,567	12.5	6,263
December	7,586	2.1	7,746	17.0	9,065	15.0	10,423	4,467	2.9	4,597	12.5	5,173	16.6	6,029
January	6,116	12.0	6,847	18.9	8,141	18.6	9,659	3,888	23.4	4,799	18.2	5,675	13.7	6,450
February	4,184	56.8	6,561	21.6	7,976	14.3	9,112	2,704	69.3	4,580	15.4	5,285	13.7	6,009
March	6,554	20.5	7,898	23.0	9,712	(31.3)	6,670	4,305	20.0	5,165	17.0	6,045	4.5	6,317
April	8,054	2.8	8,277	21.8	10,080	(62.3)	3,796	4,760	11.3	5,298	20.1	6,362	(11.8)	5,610
May	8,531	6.4	9,078	21.0	10,888			5,270	12.7	5,940	12.9	6,704		
Total Year	\$92,999	6.5	\$99,048	15.0	\$113,893			\$54,933	12.3	\$61,664	14.3	\$70,498		
Jun-Apr	\$84,468	6.5	\$89,971	14.4	\$102,906	2.8	\$105,762	\$49,664	12.2	\$55,724	14.5	\$63,795	9.1	\$69,613

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.
 (5) AET Conversions at Beaver Valley Expressway, NE Extension Barrier Plaza, Findlay Connector, Amos K Hutchinson Bypass, and Gateway Toll Plaza in May 2017, April 2018, June 2018, October 2019, and October 2019 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				
	2016-17	% Chg	2018-19	2017-18	% Chg	2018-19	2016-17	% Chg	2018-19	2019-20	
June	1,083	(1.0)	1,072	0.7	1,079	(1.6)	1,169	0.6	1,176	(1.5)	1,158
July	1,112	(3.9)	1,068	4.7	1,118	(1.6)	1,099	9.9	1,161	4.8	1,208
August	1,141	(2.2)	1,116	3.0	1,149	(2.9)	1,116	102	1,223	2.3	1,217
September	1,107	(2.8)	1,076	0.4	1,080	(1.2)	1,067	99	1,173	0.2	1,166
October	1,134	(1.6)	1,116	4.1	1,162	(3.5)	1,121	113	1,223	1.2	1,233
November	1,013	(3.2)	980	4.8	1,027	(5.6)	970	87	1,091	(2.3)	1,057
December	984	(3.3)	952	1.6	967	(2.0)	948	71	1,057	(2.3)	1,019
January	902	(2.8)	876	0.4	880	1.3	891	75	965	(1.9)	966
February	892	(2.4)	870	1.5	884	(1.7)	868	67	957	(1.6)	942
March	1,028	(3.2)	995	2.0	1,015	(30.4)	706	71	1,106	(3.0)	1,073
April	1,029	(0.3)	1,026	2.7	1,053	(57.2)	451	62	1,111	0.2	1,152
May	1,085	1.2	1,098	1.3	1,111		1,183	1.7	1,204	1.0	1,215
Total Year	12,508	(2.1)	12,244	2.3	12,524		992	7.8	13,500	(1.4)	13,631
Jun- Apr	11,423	(2.4)	11,146	2.4	11,413	(9.8)	10,299	952	12,317	(1.7)	12,416

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)					
	2016-17	% Chg	2018-19	2017-18	% Chg	2018-19	2016-17	% Chg	2018-19	2019-20		
June	\$1,597	3.9	\$1,659	6.8	\$1,772	7.5	\$1,904	\$380	12.2	\$426	8.5	\$500
July	1,621	3.1	1,671	12.4	1,877	6.5	2,000	346	15.9	400	17.8	471
August	1,678	2.6	1,722	10.6	1,904	3.7	1,974	380	20.0	457	4.6	478
September	1,606	2.2	1,642	7.8	1,769	7.4	1,901	364	14.9	418	6.9	447
October	1,654	3.5	1,711	10.9	1,898	4.5	1,983	363	20.5	437	16.3	508
November	1,443	3.7	1,496	12.6	1,684	0.9	1,700	321	16.1	373	16.0	432
December	1,419	1.9	1,446	12.4	1,625	3.4	1,680	301	5.0	316	18.3	374
January	1,348	3.8	1,399	10.2	1,542	9.7	1,692	277	19.6	331	22.1	404
February	1,348	4.1	1,403	10.4	1,548	5.9	1,659	289	18.5	343	10.4	378
March	1,568	2.2	1,602	11.9	1,792	(26.1)	1,324	351	8.2	380	21.5	462
April	1,568	6.6	1,672	11.4	1,862	(53.1)	873	362	16.3	421	22.1	513
May	1,666	7.9	1,798	10.4	1,986		943	428	16.6	499	8.7	543
Total Year	\$18,516	3.8	\$19,722	10.6	\$21,261		\$4,161	\$3,732	15.2	\$4,800	14.0	\$5,472
Jun- Apr	\$16,850	3.4	\$17,423	10.6	\$19,274	(3.1)	\$18,670	\$3,732	15.2	\$4,300	14.6	\$4,929

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.



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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		
	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.
June	562	592	4.8	111	129	16.2	673	718	4.2
July	588	593	0.8	104	101	(2.9)	691	707	2.2
August	579	604	4.2	113	121	7.1	693	730	5.2
September	550	583	5.8	104	135	29.8	654	702	7.2
October	553	577	4.3	105	151	42.9	658	698	5.9
November	509	541	6.2	95	104	9.5	605	646	6.8
December	497	534	7.4	80	135	68.8	577	625	8.3
January	450	478	6.3	80	129	61.3	530	569	7.3
February	432	465	7.7	78	164	110.3	510	556	8.4
March	499	552	10.6	92	153	65.2	591	658	11.4
April	511	568	11.2	93	230	147.8	604	683	13.0
May	556	623	12.2	108	214	96.3	664	755	13.7
Total Year	6,286	6,711	6.8	1,164	1,477	27.2	7,450	8,046	8.3
Jun - Apr	5,730	6,088	6.2	1,055	1,403	33.0	6,786	7,291	7.4
2019-20	6,154			1,212			7,366		
2018-19	6,625			1,298			7,924		
2017-18	6,225			1,212			7,437		

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.
June	\$764	\$771	0.9	\$381	\$311	(18.2)	\$1,144	\$1,140	(0.4)
July	810	780	(3.7)	347	(4.4)	(9.5)	1,157	(3.9)	(3.9)
August	780	787	1.0	366	13.5	3.7	1,162	(0.7)	(0.7)
September	738	748	1.4	352	(7.7)	(2.2)	1,090	0.7	0.7
October	744	749	0.7	348	(1.9)	(0.6)	1,092	(0.2)	(0.2)
November	677	695	2.7	317	(4.0)	(12.6)	994	0.5	0.5
December	663	683	3.0	270	(7.7)	(28.5)	933	1.9	1.9
January	619	642	3.7	286	(6.7)	(23.5)	905	0.4	0.4
February	604	623	3.1	279	(2.2)	(7.9)	883	2.1	2.1
March	700	748	6.8	331	(2.1)	(6.3)	1,031	3.9	3.9
April	717	781	9.0	332	4.0	12.1	1,048	7.4	7.4
May	687	837	21.1	321	21.1	65.7	1,008	21.7	21.7
Total Year	\$8,504	\$8,845	3.9	\$3,943	\$3,931	(0.3)	\$12,447	\$12,776	2.6
Jun - Apr	\$7,817	\$8,007	2.4	\$3,622	\$3,542	(2.2)	\$11,439	\$11,550	1.0
2019-20	\$10,039			\$4,013			\$14,053		
2018-19	\$9,336			\$3,910			\$13,247		
2017-18	\$9,321			\$4,337			\$14,657		

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.
 (4) AET conversion occurred in May 2017.





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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		
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20
June	606	(0.8)	828	103	0.8	124	709	(0.6)	953
July	647	(1.6)	853	97	1.6	132	744	(1.2)	985
August	657	(1.1)	855	103	5.8	134	760	(0.2)	988
September	573	0.6	748	99	1.8	125	672	0.8	873
October	583	0.0	760	97	11.2	140	680	1.6	900
November	570	(1.3)	763	98	5.5	127	668	(0.3)	890
December	555	(2.1)	763	96	0.5	128	651	(1.7)	891
January	330	41.7	666	59	62.1	129	389	44.8	794
February	0	N/A	653	0	N/A	119	0	N/A	772
March	320	62.3	466	63	62.5	131	383	62.3	597
April	545	2.8	211	91	14.4	109	636	4.5	870
May	577	6.0	799	103	12.3	132	679	6.9	931
Total Year	5,963	13.3	7,566	1,008	21.7	1,400	6,971	14.5	9,582
Jun - Apr	5,387	14.1	7,383	905	22.7	1,268	6,292	15.3	8,651
			2.5			10.1			19.2
						16.3			(0.1)
						16.3			(0.1)

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20	2016-17	% Chg.	2019-20
June	3,150	(1.6)	\$4,425	1,845	1.9	\$3,385	4,995	(0.3)	\$6,760
July	3,380	(3.5)	4,627	1,753	0.8	2,482	5,133	(2.0)	7,109
August	3,337	0.0	4,689	1,830	6.7	2,529	5,166	2.4	7,218
September	3,038	(1.3)	4,045	1,797	1.9	2,368	4,835	(0.1)	6,413
October	2,985	(0.8)	4,137	1,758	10.3	2,650	4,742	3.3	6,787
November	2,915	(4.5)	4,157	1,761	3.4	2,405	4,677	(1.5)	6,562
December	2,872	(1.6)	4,061	1,743	0.6	2,409	4,615	(0.7)	6,470
January	1,762	39.6	3,927	1,071	60.5	2,580	2,834	47.5	6,508
February	1,591	N/A	3,776	1,112	64.1	2,392	2,703	65.2	6,168
March	2,579	65.9	2,583	1,642	13.2	2,538	2,703	65.2	6,078
April	2,775	3.7	1,230	1,642	13.2	2,206	4,418	7.2	5,122
May	2,929	6.0	4,330	1,829	12.0	2,482	4,758	8.3	6,369
Total Year	\$50,727	12.7	\$42,826	\$18,142	21.4	\$25,603	\$48,869	15.9	\$68,429
Jun - Apr	\$27,798	13.4	\$38,496	\$16,313	22.4	\$23,121	\$44,111	16.7	\$61,617
			8.2			16.3			5.7
						19.7			5.7

NOTES:
 (1) Toll increases occur every year with exceptions. Refer to Table 1 for details.
 (2) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
 (3) Leap year occurred in 2020, resulting in exaggerated traffic and toll revenue impacts in February 2020 compared to February 2019.
 (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.



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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		
	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.
June	332	334	(2.8)	87	88	(3.7)	418	421	(2.0)
July	383	367	(4.3)	81	84	(2.0)	464	448	(1.3)
August	342	342	0.0	90	93	(5.5)	431	441	(2.3)
September	294	276	(6.1)	83	83	0.0	377	356	(5.8)
October	286	279	(2.5)	84	82	(2.4)	369	367	(0.6)
November	285	280	(1.8)	80	81	(1.2)	365	361	(1.1)
December	256	261	(1.9)	78	77	(1.3)	334	337	(0.9)
January	216	195	(9.2)	78	81	(3.3)	294	275	(6.1)
February	196	187	(4.6)	73	76	(3.9)	268	262	(2.2)
March	245	256	(4.7)	85	85	0.0	330	341	(2.9)
April	276	254	(8.0)	80	84	(4.8)	356	338	(5.3)
May	298	290	(2.7)	87	90	(3.3)	384	380	(1.0)
Total Year	3,407	3,322	(2.5)	984	995	(1.1)	4,391	4,317	(1.7)
Jun - Apr	3,110	3,031	(2.5)	906	927	(2.3)	4,007	3,937	(1.8)

Month	Passenger Cars			Commercial Vehicles			Total Revenue		
	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.	2016-17	2017-18	% Chg.
June	\$1,834	\$1,962	(6.4)	\$1,563	\$1,661	(6.3)	\$3,398	\$3,623	(6.6)
July	2,134	2,159	(1.2)	1,474	1,554	(5.4)	3,608	3,713	(2.9)
August	1,885	2,000	(6.1)	1,612	1,728	(7.2)	3,496	3,728	(6.6)
September	1,634	1,612	(1.3)	1,516	1,539	(1.5)	3,149	3,151	(0.1)
October	1,574	1,615	(2.6)	1,525	1,682	(10.3)	3,098	3,297	(6.4)
November	1,560	1,610	(3.2)	1,445	1,569	(8.6)	3,005	3,179	(5.8)
December	1,399	1,497	(6.3)	1,414	1,464	(3.5)	2,813	2,961	(5.3)
January	1,231	1,176	(4.5)	1,481	1,622	(9.5)	2,712	2,797	(3.2)
February	1,125	1,134	(0.8)	1,400	1,533	(9.5)	2,525	2,667	(5.6)
March	1,421	1,576	(9.5)	1,634	1,721	(5.3)	3,055	3,297	(7.9)
April	1,605	1,565	(2.5)	1,528	1,715	(12.2)	3,134	3,280	(4.7)
May	1,725	1,785	(3.3)	1,688	1,835	(7.5)	3,373	3,621	(6.8)
Total Year	\$19,127	\$19,692	(3.0)	\$18,239	\$19,622	(7.6)	\$37,366	\$39,314	(5.2)
Jun - Apr	\$17,402	\$17,906	(2.9)	\$16,592	\$17,787	(7.2)	\$33,993	\$35,693	(5.0)

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.
 (4) AET conversion occurred in October 2019.



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It should be noted that the DRB was closed on January 20, 2017 due to a fracture in one of the structural support beams. The structure was closed to all traffic through March 9, 2017. This event negatively impacted the traffic and revenue values for FY 2016-17. CDM Smith analyzed the impact on Turnpike traffic and revenue during the closure and estimated that losses over this period amounted to 1.8 million transactions and \$12.1 million in toll revenue.

The FY 2019-20 numbers, especially for passenger cars, were severely impacted by the COVID-19 pandemic that began affecting travel patterns in Pennsylvania in March 2020. Prior to that point, passenger car transaction growth had been slightly positive for the fiscal year through February but fell 37.5 percent in March 2020 and 71.8 percent in April 2020, compared to the same months in 2019. Commercial vehicle traffic fell less sharply, decreasing 5.3 percent in March 2020 and 28.0 percent in April, while total transactions decreased 32.8 percent in March and 65.2 percent in April. Revenue also decreased markedly in these two months, decreasing 38.8 percent in March and 73.2 percent in April for passenger cars, 5.4 percent in March and 20.2 percent in April for commercial vehicles, and 23.6 percent in March and 49.2 percent in April for total vehicles.

As previously mentioned, the Ticket System is by far the largest component of both traffic and toll revenue on the Turnpike System. As shown in Table 4, total year-to-date transactions decreased 9.6 percent compared to the same period in the prior year. Year-to-date passenger car transactions decreased by 10.8 percent during this period. Year-to-date commercial vehicle activity has decreased by 2.4 percent compared to the previous 11-month period. Total revenue for the Ticket System grew by 7.8 percent in FY 2017-18 and by 10.4 percent in FY 2018-19. Year-to-date FY 2019-20 revenue has fallen by 0.9 percent compared to the same period in the previous year. The previously mentioned ongoing COVID-19 pandemic began significantly impacting travel patterns in March 2020. Total vehicle transactions in March 2020 were down 34.8 percent compared to March 2019, while total transactions in April 2020 fell 68.1 percent compared to April 2019. Total vehicle revenue was down 24.5 percent and 50.3 percent in March and April, respectively.

The combined barrier facilities monthly transaction and revenue data is shown in Table 5. Year-to-date transactions decreased 4.6 percent in FY 2019-20 compared to the same period in the previous year. Commercial vehicle transactions increased 1.5 percent for this time period, while passenger cars fell 5.7 percent. Total revenue for the combined barrier facilities grew 5.2 percent overall year-to-date. Growth in toll revenue at the barrier facilities has outpaced transaction growth due to system-wide annual toll increases and AET conversions on AKH and the Gateway Toll Plaza in October 2019. These AET conversions resulted in a significant increase in video transactions, which also had the effect of increasing the average toll rates. As with the Ticket System, the ongoing COVID-19 pandemic began significantly impacting travel patterns in March 2020. Total vehicle transactions were down 27.0 percent in March 2020 and 56.7 percent in April 2020 compared to the same months in 2019, while total vehicle revenue was down 17.6 percent and 42.8 percent in March and April, respectively.



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Traffic and gross toll revenue trends for the seven barrier toll facilities are provided in Tables 6 through 12. These seven barrier facilities (MFE, AKH, the Northeast Extension barrier plazas, BVE, Findlay Connector, DRB, and the Gateway Toll Plaza) contribute about 14 percent of the total systemwide gross toll revenue.

The effects of ramp-up, inclement weather, alternative routes, and new developments have a more significant impact on these relatively low volume roads. However, each barrier system has experienced a smaller year-to-date percent decrease in total transactions due to the COVID-19 pandemic than has the ticket system. The Findlay Connector (Table 10) has actually experienced slight overall traffic growth through the first 11 months of FY 2019-20 despite the significant decreases in March and April. Due to increasing toll rates, five of the seven facilities have managed to have positive revenue growth over the same time period, with the exceptions being MFE (Table 6) and AKH (Table 7).

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.

Rate increase assumptions are unchanged since the 2019 Bring Down Letter, except for the calendar year 2021 increase, which is now scheduled for a six-percent increase (as opposed to the five-percent increase that was previously planned). Additionally, this increase is scheduled to occur in October 2020 rather than January 2021 and will include an additional 45-percent increase for cash tolls. This will occur at the only two remaining locations where cash toll collection is permitted, including the Ticket System and MFE. By including this 45-percent cash-only increase, in addition to the six-percent across-the-board increase, the percent cash toll differential (compared to E-ZPass rates) will be equal to video tolls, essentially condensing the three toll schedules that now exist (E-ZPass, cash, video) to two (E-ZPass, non-E-ZPass). As mentioned earlier, these toll adjustment assumptions are proposed and haven't been formally approved yet by the PTC Board. Absent their approval, an across the board five-percent toll increase would occur on or about January 1, 2021.

The impact of COVID-19 has resulted in dramatically reduced travel on the Turnpike System, as well as throughout the state and country. Increasing the next toll adjustment from five-percent to six-percent helps, in a small way, to make up for some lost toll revenue. Moving the toll increase date from January 2021 to October 2020 also results in a small amount of increased revenue.

The proposed 45-percent cash surcharge for the Ticket System and MFE in October 2020 would have occurred in October 2021 as both of these facilities convert to AET. As on the other PTC toll



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

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

- (1) Toll rate increases are the same for all facilities and vehicle classes.
- (2) Except where otherwise indicated, toll rate increases are applied on or near January 1.
- (3) Toll rate increases are actual.
- (4) Rate increase will occur in October 2020 instead of January 2021. All rates will increase by 6%, except for the two remaining facilities where cash is accepted: the Ticket System and Mon Fayette Expressway (Turnpike 43). Cash rates at these two location will increase by an additional 45% to bring cash rates in line with video rates.
- (5) Beginning in 2022, all facilities will be AET and cash collection will no longer be an option.



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facilities that have converted to AET, a 45-percent video surcharge has been imposed to recoup expected revenue leakage. PTC is advancing the surcharge implementation date by one year on the Ticket System and MFE for three reasons:

1. It generates slightly more toll revenue for one year;
2. The greater toll differential between cash and E-ZPass toll rates encourages greater use of E-ZPass (whose rates will be about half those of cash); and
3. It simplifies the rate schedule into two categories for the entire Turnpike System: E-ZPass and non-E-ZPass.

The toll revenue impacts of the rate changes discussed above are estimated to generate an additional \$62 million in FY 2020-21 (about a 4.8 percent increase). For FY 2021-22 CDM Smith estimates that an additional \$59 million will be generated (about a 3.9 percent increase). For FY 2022-23 and beyond, the positive revenue impact amounts to about one-percent. This is due to the change in the rate adjustment from five-percent to six-percent in October 2020.

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 2020 Bring Down Letter. These were adjusted slightly on a facility by facility basis, by the amount shown in the three rightmost columns, over assumptions used in the 2019 Bring Down Letter.

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

Calendar Year	2020 Bring Down Letter			Difference from 2019 Bring Down Letter		
	Cars	Trucks	Total	Cars	Trucks	Total
	2018	80.0	90.6	81.5	0.0	0.0
2019	81.4	91.7	82.9	-0.1	0.7	0.0
2020	83.0	92.2	84.3	0.1	0.7	0.2
2021	84.7	93.0	85.9	0.8	1.0	0.8
2022	85.9	93.8	87.1	0.7	1.2	0.8
2023	86.6	94.2	87.8	0.6	1.1	0.7
2024	87.3	94.7	88.4	0.5	1.1	0.6
2025	87.8	95.1	88.9	0.5	1.4	0.6
2026	88.3	95.5	89.4	0.4	1.7	0.6
2027	88.8	95.8	89.8	0.5	2.0	0.6
2028	89.1	96.2	90.2	0.3	2.3	0.7
2029	89.5	96.3	90.6	0.3	2.4	0.7
2030	89.8	96.3	90.8	0.2	2.3	0.5
2031	89.9	96.4	90.9	-0.1	2.4	0.3
2032	90.0	96.4	91.0	-0.1	2.4	0.3
2033	90.1	96.5	91.1	0.0	2.4	0.4
2034	90.2	96.5	91.2	0.0	2.4	0.4
2035	90.2	96.5	91.2	-0.1	2.3	0.3
2036	90.3	96.6	91.3	0.0	2.4	0.4
2037	90.4	96.6	91.3	0.1	2.4	0.4
2038	90.4	96.7	91.4	0.0	2.4	0.4
2039	90.5	96.7	91.4	0.1	2.4	0.4
2040	90.5	96.7	91.5	0.1	2.4	0.5
2041	90.6	96.8	91.5	0.2	2.4	0.5
2042	90.6	96.8	91.6	0.2	2.4	0.6
2043	90.7	96.8	91.6	0.3	2.4	0.5
2044	90.7	96.9	91.7	0.3	2.5	0.6
2045	90.8	96.9	91.7	0.3	2.4	0.6
2046	90.8	97.0	91.8	0.3	2.5	0.7
2047	90.8	97.0	91.8	0.3	2.5	0.7
2048	90.9	97.0	91.9	0.4	2.5	0.8
2049	90.9	97.1	91.9	0.4	2.6	0.8
2050	91.0	97.1	92.0	N/A	N/A	N/A

Note: The E-ZPass penetration rates for this 2020 Bring Down Letter are actual through 2019 and were actual only through 2018 for the 2019 Bring Down Letter.



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As shown, differences between assumed E-ZPass market share in the current analysis are very similar to those assumed in the 2019 Bring Down Letter. Actual commercial vehicle (truck) E-ZPass market share has slightly exceeded our previous estimates. This results in new 2020 estimates being about 0.7 percent higher than previous estimates. By the end of the forecast period, commercial vehicle E-ZPass market share is about 2.6 percent higher than previous forecasts. It should be noted, too, that the maximum allowable commercial vehicle E-ZPass market share has been increased for the current analysis. In the 2019 Bring Down Letter, commercial vehicle E-ZPass market share was capped when it reached 95 percent. Given the continued robust growth observed since the last forecast, however, the cap was increased to 97.5 percent for the current study.

Passenger car E-ZPass market share forecast assumptions remain largely unchanged from those in the 2019 Bring Down Letter. The only difference is that beginning in 2021 there is a 0.8-percent increase in passenger car E-ZPass market share compared to the previous forecast. This is due to the fact that we are now assuming a 45-percent video surcharge on the Ticket System and MFE beginning in October 2020. This was not assumed in the 2019 Bring Down Letter and has the effect of shifting more motorists to the lower cost E-ZPass option. This difference slowly diminishes through about 2030 as the facilities reach the assumed E-ZPass market share cap of just over 90 percent.

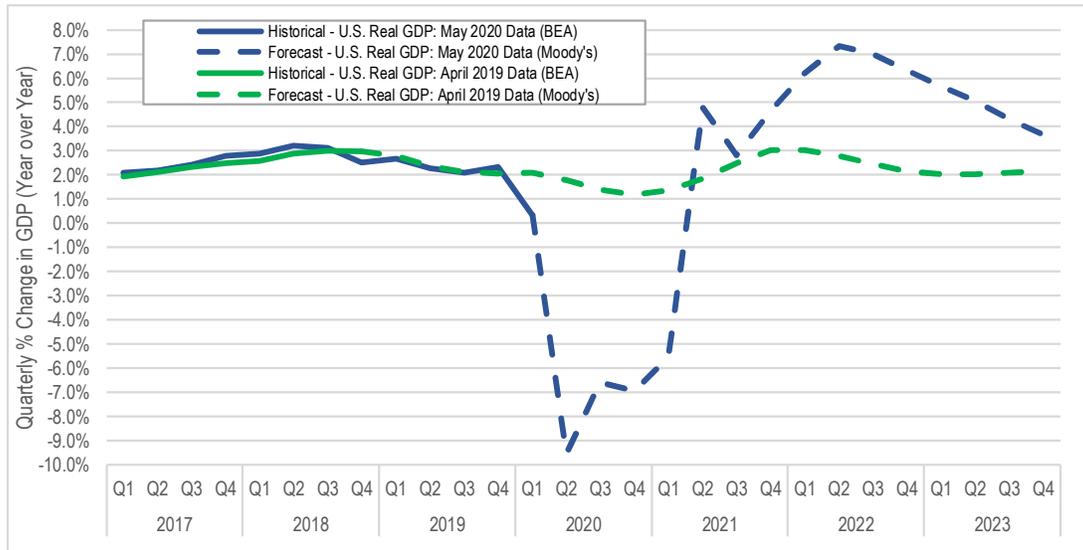
Summary of Changes in Future Year Estimates for U.S. Gross Domestic Product and Pennsylvania Gross State Product

This section presents a comparison of the Gross Domestic Product (GDP) and Pennsylvania Gross State Product (GSP) information available for the 2020 Bring Down Letter with updated forecasts for both measures from Moody's Analytics. This information was a key input in developing estimated growth forecasts for the Turnpike System. All GDP and GSP figures in this section refer to year over year comparisons. For example, the 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 2019 Bring Down Letter as well as the revised figures based on updated Moody's Analytics' forecasts as of May 2020. As shown, actual experience in 2019 closely matched the 2019 forecast, underperforming the forecast by 0.1 percent in the first and second quarters and overperforming it by 0.2 percent in the fourth quarter. However, due to the COVID-19 pandemic and the steep decline in GDP growth experienced in the first quarter of 2020, the revised GDP growth estimates in 2020 predict much lower growth in 2020. GDP is forecast to fall 9.6 percent in the second quarter of 2020, with negative growth continuing through the first quarter of 2021. Recovery from the pandemic is forecast to be strong throughout the remainder of the forecast period. GDP growth is expected to accelerate through 2021 and the first half of 2022, reaching 7.3 percent in the second quarter of 2022. GDP is then forecast to continue growing, albeit it at a slowing rate, through the end of 2023, when 3.7 percent growth is forecast.



Figure 3
Comparison of April 2019 to May 2020 Quarterly Growth Estimates of U.S. Gross Domestic Product



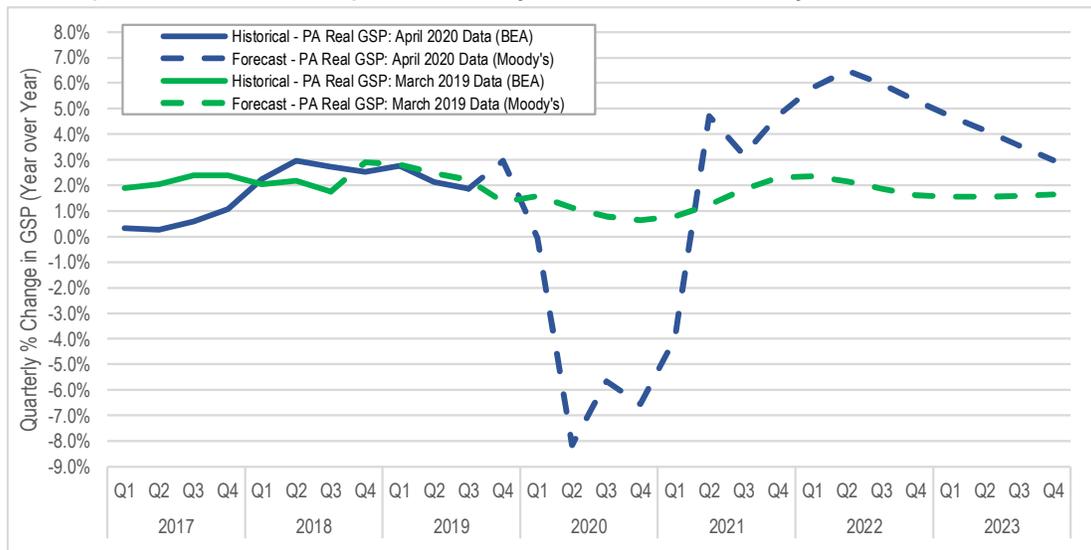
Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (April 2019 and May 2020 Releases)

Figure 4 shows GSP trend and forecast data for Pennsylvania. Revised GSP numbers for 2017 show that historical growth in 2017 was lower than previously estimated, while growth through the first three quarters of 2018 was higher. The most recent four quarters for which historical estimates exist (fourth quarter of 2018 through the third quarter of 2019) had lower growth than the prior forecast by a range of 0.0 to 0.4 percent. Like GDP, the GSP forecast for the remainder of the forecast period has been significantly altered by the COVID-19 pandemic. GSP is forecast to fall sharply in the second quarter of 2020 (-8.2 percent), with continued, although lessening, negative growth through the first quarter of 2021. A strong recovery period is forecast from the second quarter of 2021 through the end of the forecast period. GSP growth during this time is expected to peak at 6.5 percent in the second quarter of 2022. Like GDP, GSP is forecast to continue to grow at a decreasing rate through the remainder of the forecast period, slowing to 3.0-percent growth by the end of 2023.

Overall, actual GDP and GSP growth closely matched forecasted growth rates in 2019, although the COVID-19 pandemic resulted in significant negative growth in the first quarter of 2020 when continued moderate positive growth had been expected. Based on this information it might be expected that actual traffic growth in 2019 would have also closely matched CDM Smith's 2019 Bring Down Letter estimates. As will be discussed in more detail below, actual traffic and toll revenue on the total System slightly outperformed CDM Smith's estimates through February 2020. This is likely due to other factors, namely motor fuel prices and consumer confidence, that are discussed in the next section.



Figure 4
Comparison of March 2019 to April 2020 Quarterly Growth Estimates of Pennsylvania Gross State Product



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (March 2019 and April 2020 Releases)

Summary of Trends in Fuel Prices

Figure 5 portrays gasoline and diesel prices for the Central Atlantic Region from January 2016 through April 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 forecasts 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.

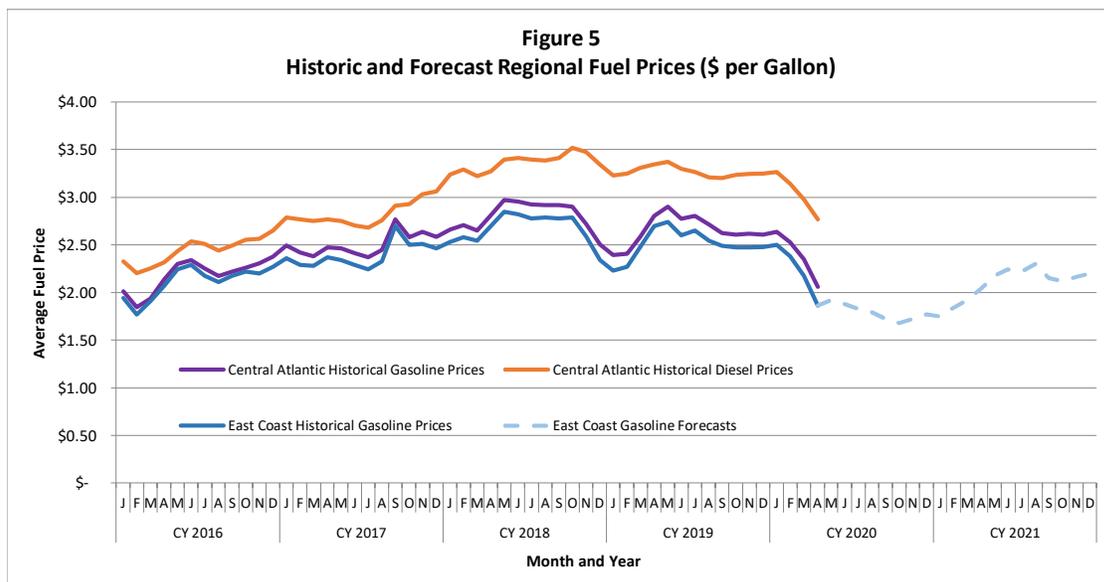
For most of the year following the development of the 2019 Bring Down Letter motor fuel prices remained relatively stable, and even slightly declined. However, over the past two months prices



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have fallen sharply 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, prices in the Central Atlantic region fell to \$2.06 and \$2.77 for gasoline and diesel, respectively, in April 2020.

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. These East Coast gasoline prices are forecast to remain low, but stable, over the next few months, bottoming out in October at \$1.68 per gallon. Prices are then forecast to rise slowly over the last few months of 2020 and early 2021, stabilizing between \$2.12 and \$2.30 per gallon in the summer and fall of 2021. Based on historical trends, Central Atlantic prices can be expected to follow the same pattern, but at slightly higher prices.



Source: U.S. Energy Information Administration, release dates 5/4/2020 (historical) and 5/12/2020 (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.

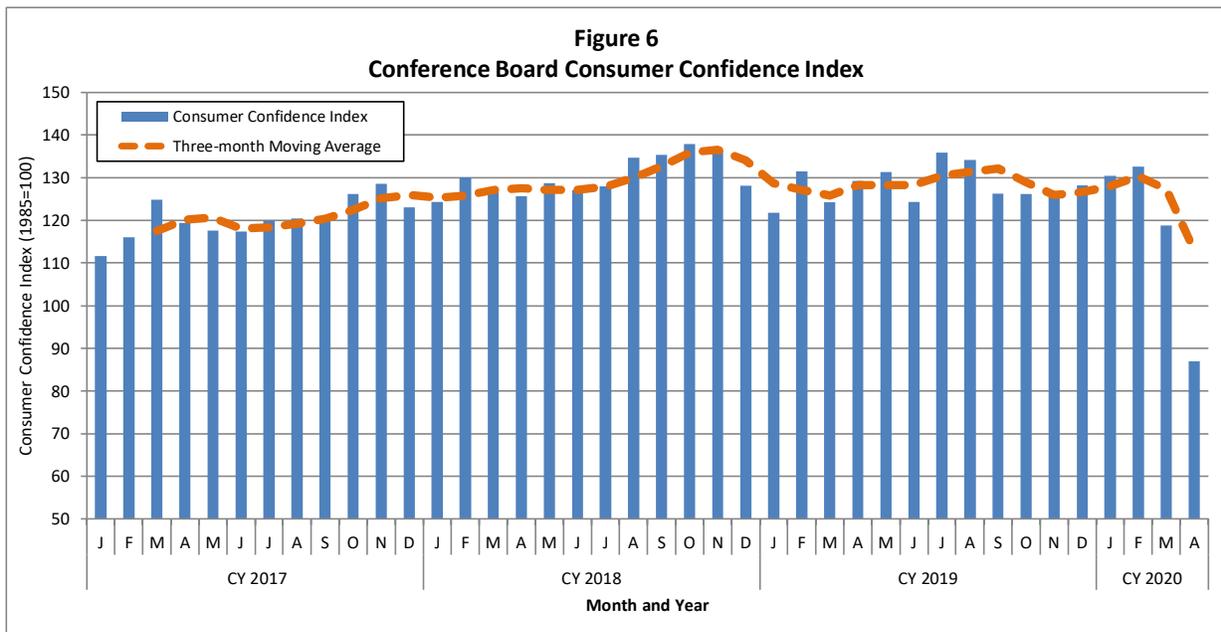
Consumer Confidence

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. Consumer confidence scores are indexed to the year 1985, for which consumer confidence equaled 100.



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Figure 6 shows the Conference Board Consumer Confidence Index for the period between January 2017 and April 2020. The individual blue bars show the index values for each month while the dotted line shows the three-month moving average. As shown, 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 86.9, reflecting the widespread economic shutdowns that have been put in place as a result of the COVID-19 pandemic. April consumer confidence data is currently preliminary, based on data gathered through April 17 and therefore exclusive of influences from the end of the month. It is subject to change with the next release, and therefore may be higher or lower than currently reported.



Source: The Conference Board, release date 4/28/2020.



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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. More than 150 miles have been completed as of January 2020, with more than 15 additional 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 2024.

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.

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
102-109	Somerset County	Reconstruct and widen to 3 lanes in each direction	March 2021	Fall 2023
126-130	Somerset and Bedford	Reconstruct and widen to 3 lanes in each direction	March 2022	Fall 2024
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 2024
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.



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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.

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 2019 Bring Down Letter. The analysis period in this table is from March 2019 through February 2020. This twelve-month period corresponds to the period for which actual data currently exists but was estimated at the time of the 2019 Bring Down Letter. Crucially, this period is also prior to the significant reductions in toll transactions and revenue that PTC facilities began to experience in March due to the COVID-19 pandemic. Therefore, the difference between actual and estimated traffic and revenue in Table 16 reflects only normal, pre-COVID-19, conditions. **Table 17** was prepared in the same format but reflects actual versus estimated traffic and revenue only for March and April 2020; differences in this table reflect the impact COVID-19 has had on Turnpike System traffic and toll revenue.

For the non-COVID-19 impacted period shown in Table 16, Systemwide actual passenger car transactions surpassed estimates by 1.2 percent, and passenger-car toll revenue exceeded estimates by 4.2 percent. Commercial vehicle transactions exceeded estimates by 1.7 percent, and actual commercial vehicle toll revenue was 1.7 percent greater than estimates. When all vehicles are considered, actual transactions were higher than estimates by 1.2 percent and toll revenue exceeded estimates by 3.1 percent.

The same information is provided in Table 16 for each individual Turnpike toll facility. Because a separate forecast was not provided for the Gateway Toll Plaza in the 2019 Bring Down Letter, the Ticket System and Gateway are grouped together for the purposes of this analysis. Total transactions for the Ticket System and Gateway barrier were 0.7 percent higher than the forecasted traffic, while actual total revenue was 2.8 percent higher than estimated.

All barrier facilities overperformed when compared to the 2019 Bring Down Letter transaction forecasts. However, toll revenue for AKH was 2.0 percent lower than forecast. Toll revenue for the other five barrier facilities was higher than CDM Smith estimates by between 3.2 percent (MFE) and 31.2 percent (Findlay Connector) for both passenger car and commercial revenue combined.



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Table 16
Comparison of Estimated and Actual Traffic Volumes and Gross Toll Revenue
From March 2019 Through February 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 and Gateway Barrier	131,314	132,270	0.7	\$661,274	\$689,223	4.2
Delaware River Bridge	8,978	9,142	1.8	48,878	50,052	2.4
Turnpike 43	12,283	12,321	0.3	21,487	22,112	2.9
Turnpike 66	6,339	6,406	1.1	12,319	12,332	0.1
Northeast Extension (Barrier)	4,339	4,846	11.7	4,884	5,753	17.8
Turnpike I-376	7,211	7,392	2.5	11,090	11,810	6.5
Turnpike I-576	1,558	1,635	4.9	1,823	2,110	15.8
Barrier Subtotal	40,707	41,742	2.5	\$100,480	\$104,170	3.7
Total System	172,022	174,012	1.2	\$761,754	\$793,393	4.2
Commercial Vehicles						
Ticket and Gateway Barrier	23,049	23,241	0.8	\$564,359	\$571,327	1.2
Delaware River Bridge	1,393	1,531	9.9	26,634	29,202	9.6
Turnpike 43	1,084	1,110	2.3	5,530	5,780	4.5
Turnpike 66	1,111	1,092	(1.7)	5,958	5,584	(6.3)
Northeast Extension (Barrier)	1,209	1,290	6.8	7,169	8,035	12.1
Turnpike I-376	1,452	1,399	(3.6)	4,649	4,573	(1.6)
Turnpike I-576	287	420	46.4	744	1,255	68.8
Barrier Subtotal	6,537	6,843	4.7	\$50,683	\$54,429	7.4
Total System	29,586	30,084	1.7	\$615,042	\$625,756	1.7
Total Vehicles						
Ticket and Gateway Barrier	154,363	155,470	0.7	\$1,225,634	\$1,260,550	2.8
Delaware River Bridge	10,371	10,673	2.9	75,511	79,254	5.0
Turnpike 43	13,367	13,430	0.5	27,017	27,892	3.2
Turnpike 66	7,450	7,498	0.6	18,276	17,916	(2.0)
Northeast Extension (Barrier)	5,547	6,136	10.6	12,053	13,788	14.4
Turnpike I-376	8,663	8,792	1.5	15,739	16,383	4.1
Turnpike I-576	1,846	2,056	11.4	2,566	3,366	31.2
Barrier Subtotal	47,244	48,585	2.8	\$151,163	\$158,599	4.9
Total System	201,608	204,096	1.2	\$1,376,796	\$1,419,149	3.1

(1) These 12 months correspond to the period for which actual data exists, but was estimated at the time of CDM Smith's 2019 Bring Down Letter, and before traffic and figures were impacted by the COVID-19 pandemic.



Table 17
Comparison of Estimated and Actual Traffic Volumes and Gross Toll Revenue
March and April 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 and Gateway Barrier	21,269	9,268	(56.4)	\$108,438	\$45,900	(57.7)
Delaware River Bridge	1,412	677	(52.1)	8,077	3,813	(52.8)
Turnpike 43	2,000	1,157	(42.1)	3,600	2,198	(39.0)
Turnpike 66	1,018	658	(35.3)	2,131	1,213	(43.1)
Northeast Extension (Barrier)	627	293	(53.3)	640	374	(41.6)
Turnpike I-376	1,156	631	(45.4)	1,990	1,034	(48.0)
Turnpike I-576	258	155	(39.9)	243	199	(18.1)
Barrier Subtotal	6,472	3,571	(44.8)	\$16,681	\$8,831	(47.1)
Total System	27,741	12,839	(53.7)	\$125,120	\$54,731	(56.3)
Commercial Vehicles						
Ticket and Gateway Barrier	3,783	3,146	(16.8)	\$96,964	\$82,780	(14.6)
Delaware River Bridge	225	240	6.7	4,534	4,745	4.7
Turnpike 43	175	133	(24.1)	945	759	(19.7)
Turnpike 66	179	146	(18.2)	1,054	720	(31.7)
Northeast Extension (Barrier)	190	181	(4.5)	1,012	1,240	22.5
Turnpike I-376	236	179	(23.9)	834	626	(24.9)
Turnpike I-576	46	56	23.4	101	185	83.9
Barrier Subtotal	1,050	936	(10.8)	\$8,480	\$8,274	(2.4)
Total System	4,833	4,082	(15.5)	\$105,443	\$91,054	(13.6)
Total Vehicles						
Ticket and Gateway Barrier	25,052	12,414	(50.4)	\$205,402	\$128,680	(37.4)
Delaware River Bridge	1,637	917	(44.0)	12,611	8,558	(32.1)
Turnpike 43	2,175	1,290	(40.7)	4,545	2,956	(35.0)
Turnpike 66	1,197	805	(32.8)	3,185	1,933	(39.3)
Northeast Extension (Barrier)	816	474	(41.9)	1,652	1,614	(2.3)
Turnpike I-376	1,392	810	(41.8)	2,823	1,660	(41.2)
Turnpike I-576	303	211	(30.4)	344	384	11.7
Barrier Subtotal	7,521	4,507	(40.1)	\$25,161	\$17,105	(32.0)
Total System	32,573	16,921	(48.1)	\$230,563	\$145,785	(36.8)

(1) These two months correspond to the period for which actual data was estimated at the time of CDM Smith's 2019 Bring Down Letter and now exist but were significantly impacted by the COVID-19 pandemic.



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Given the positive economic performance, low motor fuel prices, and strong consumer confidence that continued through February 2020, it is not surprising that Turnpike System traffic and revenue actual experience slightly outperformed CDM Smith's estimates. As noted above, the information in Table 16 does not include actual versus estimates for March and April 2020, when the impacts of COVID-19 began to be felt in the state, region, and country. Those impacts are provided in Table 17.

Table 17 highlights the strong negative impacts COVID-19 had on Turnpike travel demand, especially given the System's traffic and toll revenue overperformance through February 2020. The following items are a partial listing of official actions taken by the Commonwealth of Pennsylvania in response to the pandemic and are provided to give context as to the extent that travel on PTC facilities was negatively impacted throughout the course of the past two months:

- March 6: Emergency disaster declaration signed;
- March 11: State employees are banned from travelling and large meetings, conferences, trainings, and community events postponed without prior approval from the governor's office;
- March 13: Montgomery County schools closed;
- March 14: Delaware County schools closed;
- March 15: Bucks and Chester Counties schools closed;
- March 16: All K-12 schools state-wide closed for 10 business days;
- March 17: State-wide closure of dine-in restaurants, childcare facilities, adult day care centers, and senior community centers and all state employees instructed to work from home if feasible;
- March 23: Stay-at-home order issued for 7 of 67 counties and all non-life sustaining businesses ordered to close physical locations;
- March 24-31: Stay-at-home order gradually extended to 33 of 67 counties;
- April 1: State-wide stay-at-home order issued;
- April 9: Announcement that schools will remain closed through end of school year; and
- April 20: State-wide stay-at-home order extended until May 8.



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Actions taken to start reopening the Commonwealth's economy did not begin to take effect until May and therefore their effects on traffic and revenue are not reflected in the data presented in this Bring Down Letter.

Systemwide, total transactions fell short of estimates by 48.1 percent, and total toll revenue was 36.8 percent lower than estimates for March and April. Passenger-car traffic was significantly more affected than commercial vehicle traffic, with actual passenger-car traffic and revenue falling short of estimates by 53.7 percent and 56.3 percent, respectively. Commercial vehicle traffic and revenue was still lower than estimates, but by only 15.5 percent and 13.6 percent, respectively.

The same information is provided in Table 17 for each of the Turnpike toll facilities. Total transactions for the Ticket System and Gateway barrier were 50.4 percent lower than the forecasted traffic, while actual total revenue was 37.4 percent lower than estimated. Impacts to barrier facilities were slightly less, with total transactions being 40.1 percent lower and total revenue being 32.0 percent lower than estimated in the 2019 Bring Down Letter. As with the Ticket System, commercial vehicles were much less impacted than passenger cars, with passenger-car transactions falling 44.8 percent short of estimates and commercial-vehicle traffic only being 10.8 percent lower. Passenger-car revenue was 47.1 percent lower than estimated, while commercial-vehicle revenue was only 2.4 percent lower.

Estimated COVID-19 Traffic and Toll Revenue Impacts

A key undertaking of this new forecast was to estimate the traffic and toll revenue impacts related to the COVID-19 pandemic over the forecast period. CDM Staff worked closely with PTC staff in collecting and reviewing daily traffic and toll revenue data for each of the Turnpike systems, by vehicle class (passenger cars versus commercial vehicles). Actual traffic and toll revenue experience through the end of April 2020 was collected as part of this analysis. Total Turnpike System traffic and revenue losses for March and April 2020 were shown above in Table 3 for the total System. A timeline of key Pennsylvania closure events was presented above in the section **Actual Versus Estimated Traffic and Toll Revenue** that contributed (along with similar closures in states throughout the region) to these unprecedented declines in travel demand. PTC also made the decision to suspend all cash toll collection on the Turnpike System beginning on March 16.

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. Of course, actual relaxing of stay-at-home orders, the opening of businesses, schools, and general social activity is still an unknown. Some relaxing (or partial reopening) is being proposed throughout the month of May, so the process of returning to some level of pre-COVID-19 activity has begun. The speed at which it continues will likely be contingent on the success of these early partial openings.

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There were three weeks of steeply declining traffic and revenue on the Turnpike System, beginning with the week of March 8. Steep declines continued through the week of March 22. Volumes losses stabilized at that point and have not declined further through the end of April. Peak daily traffic reductions reached about 70 percent for passenger cars, but only about 30 percent for commercial vehicles. CDM Smith's forecasts assume the peak declines continue at these levels through the first week of May and then begin to slowly moderate such that by the end of September 2020 both passenger and commercial traffic reach levels that are about 10 to 12 percent below normal levels. This assumes a gradual relaxation in the stay at home orders and social distances guidelines over this period, as well as a return to cash toll collection on the Turnpike System by mid-June.

From October 2020 through FY 2025-26, CDM Smith assumes there will be continued residual impacts of COVID-19 on the economy and social behavior. Over this period, the negative impacts of COVID-19 gradually decline from the 10- to 12-percent levels at the end of September 2020 to zero by the end of FY 2025-26.

Table 18 shows the assumed COVID-19 related impacts on estimated traffic and toll revenue over the forecast period. FY 2019-2020 total traffic volumes are reduced by 26.3 million, or about 12.9 percent of total transactions. Toll revenue is reduced by about \$157.2 million over the same time period (10.9 percent of total toll revenue). Only three months (March, April, and May) are impacted in FY 2019-20. While the peak daily negative impacts occur in FY 2019-20, the biggest total declines are assumed in FY 2020-21 since this will include 12 months of negative impacts. As shown in Table 18, total transaction losses of 28.0 million are assumed (13.9 percent of total transactions), along with toll revenue losses of \$211.0 million (13.4 percent of total toll revenue). After that, negative traffic and toll revenue impacts are estimated to decline over the next five years. By FY 2025-26 total traffic and toll revenue losses are assumed to be only about 0.4 percent and 0.5 percent, respectively. No COVID-19 impact is assumed by FY 2026-27.

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 April 2020;
- Impacts related to COVID-19 (Table 18);
- Revised estimates of E-ZPass penetration rates (Table 14); and
- Revised toll increase assumptions (Table 13).



Table 18
Estimated Systemwide COVID-19 Impacts on Annual Transactions and Gross Toll Revenue (1)
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 (5,6,7)	(24,801)	(1,515)	(26,316)	(127,363)	(29,866)	(157,229)
2020-21 (8,9,10,11)	(24,627)	(3,330)	(27,956)	(140,070)	(70,976)	(211,046)
2021-22 (11,12,13)	(4,108)	(1,958)	(6,066)	(22,350)	(45,749)	(68,099)
2022-23 (11)	(2,738)	(1,306)	(4,044)	(14,900)	(30,500)	(45,400)
2023-24 (11)	(1,826)	(870)	(2,696)	(9,933)	(20,333)	(30,266)
2024-25 (11)	(1,217)	(580)	(1,797)	(6,622)	(13,555)	(20,178)
2025-26 (11)	(609)	(290)	(899)	(3,311)	(6,778)	(10,089)
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 (5,6,7)	(14.3)	(5.0)	(12.9)	(15.9)	(4.7)	(10.9)
2020-21 (8,9,10,11)	(14.4)	(11.1)	(13.9)	(15.8)	(10.3)	(13.4)
2021-22 (11,12,13)	(2.4)	(6.4)	(3.0)	(2.4)	(6.3)	(4.1)
2022-23 (11)	(1.6)	(4.2)	(2.0)	(1.6)	(4.0)	(2.6)
2023-24 (11)	(1.0)	(2.8)	(1.3)	(1.0)	(2.5)	(1.7)
2024-25 (11)	(0.7)	(1.8)	(0.9)	(0.6)	(1.6)	(1.1)
2025-26 (11)	(0.3)	(0.9)	(0.4)	(0.3)	(0.8)	(0.5)
2026-27	0.0	0.0	0.0	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) Reflects actual experience through April 2020.
- (7) March 16, 2020 cash collection on Ticket System and PA 43 temporarily suspended.
- (8) June 14, 2020 cash collection on Ticket System and PA 43 is assumed to resume.
- (9) Reflects Ticket System and PA 43 45% cash surcharge effective on October 1, 2020.
- (10) Reflects 6% Systemwide toll increase effective October 1, 2020. No January 2021 toll increase will occur.
- (11) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (12) Reflects Ticket System and PA 43 AET conversion effective October 1, 2021.
- (13) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Other assumptions remain unchanged from the 2019 Bring Down Letter including:

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

Table 19 shows the total traffic and toll revenue for the Ticket System only. Data for FY 2017-18 and FY 2018-19 reflect a full year of actual experience and FY 2019-20 includes 11 months of actual experience (through April 2020). Total toll transactions increase from 152.4 million to 184.7 million over the forecast period, an average annual increase of 0.6 percent. Gross toll revenue increases from \$1.0 billion to \$4.4 billion by FY 2049-50. This amounts to an average annual increase of 4.6 percent, reflecting the impact of normal growth plus the annual rate adjustments.

The same information is shown for the Barrier System in **Table 20**. Total annual toll transactions are estimated to grow from 48.8 million to 72.7 million over the forecast period, an average rate of 1.3 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 \$160.7 million to \$739.0 million over the forecast period, an annual rate of 4.9 percent, reflecting normal growth plus annual rate adjustments.

Table 21 identifies total combined transactions and gross toll revenue and also factors in 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 21 assume no further changes to the post-paid commercial volume discount program during the forecast period. The result is that the current forecasts have a negative adjustment applied for FY 2017-18; beyond that the adjustment gradually increases until it equals approximately 2.1 percent of the commercial vehicle gross toll revenue in FY 2024-25 and beyond.

As shown in Table 21, total toll transactions are expected to increase from 201.2 million to 257.4 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 \$1.2 billion in FY 2017-18 to \$5.1 billion by FY 2049-50. This reflects an average annual growth rate in gross toll revenue of 4.6 percent. Again, this includes the impact of normal growth plus annual toll rate adjustments.

Table 22 provides a comparison of the current traffic and net toll revenue forecast with the forecast developed as part of the 2019 Bring Down Letter. As shown, the revised total toll transactions are significantly less than those of the 2019 Bring Down Letter through FY 2020-21 due to the effects of the COVID-19 pandemic. As the economic effects of the pandemic begin to fade, the difference between the 2019 Bring Down Letter and current estimates lessen, reaching negative



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Table 19
Ticket System: Estimated Annual Transactions and Gross Toll Revenue (1)
 Pennsylvania Turnpike Commission

Traffic and Toll Revenue in Thousands

Fiscal Year	Annual Traffic			Annual Gross Toll Revenue		
	Passenger	Commercial	Total	Passenger	Commercial	Total
	Cars	Vehicles	Vehicles	Cars	Vehicles	Vehicles
2017-18 (2)	130,805	21,582	152,387	\$579,692	\$462,754	\$1,042,446
2018-19 (2,3)	129,559	22,020	151,579	626,685	524,309	1,150,994
2019-20 (4,5)	109,378	21,032	130,410	564,122	528,490	1,092,612
2020-21 (6,7,8,9)	107,044	19,691	126,735	627,153	541,900	1,169,053
2021-22 (9,10)	121,171	20,756	141,927	761,034	593,587	1,354,622
2022-23 (9)	122,277	21,390	143,668	792,319	639,663	1,431,983
2023-24 (9)	123,742	21,902	145,645	839,010	685,511	1,524,521
2024-25 (9)	125,445	22,334	147,780	890,199	731,218	1,621,418
2025-26 (9)	127,363	22,785	150,148	942,193	776,577	1,718,770
2026-27	129,361	23,232	152,593	989,636	817,628	1,807,265
2027-28	130,866	23,448	154,314	1,031,196	849,635	1,880,831
2028-29	132,340	23,687	156,027	1,070,512	882,321	1,952,833
2029-30	133,773	23,962	157,735	1,111,817	919,196	2,031,013
2030-31	135,145	24,235	159,380	1,156,424	957,571	2,113,995
2031-32	136,490	24,508	160,999	1,203,602	997,408	2,201,010
2032-33	137,821	24,781	162,603	1,252,463	1,038,761	2,291,224
2033-34	139,108	25,054	164,161	1,302,760	1,081,690	2,384,449
2034-35	140,355	25,326	165,681	1,354,593	1,126,264	2,480,858
2035-36	141,568	25,599	167,167	1,408,026	1,172,552	2,580,578
2036-37	142,759	25,867	168,626	1,463,250	1,220,350	2,683,599
2037-38	143,871	26,127	169,998	1,519,699	1,269,584	2,789,283
2038-39	144,945	26,387	171,332	1,577,810	1,320,695	2,898,505
2039-40	146,003	26,648	172,651	1,637,883	1,373,756	3,011,638
2040-41	147,041	26,909	173,950	1,699,918	1,428,850	3,128,768
2041-42	148,054	27,172	175,226	1,763,932	1,486,060	3,249,992
2042-43	149,037	27,435	176,472	1,829,888	1,545,466	3,375,354
2043-44	149,994	27,699	177,693	1,897,913	1,607,160	3,505,074
2044-45	150,928	27,964	178,892	1,968,076	1,671,228	3,639,304
2045-46	151,834	28,231	180,065	2,040,404	1,737,751	3,778,155
2046-47	152,728	28,498	181,227	2,115,132	1,806,835	3,921,967
2047-48	153,611	28,767	182,378	2,192,366	1,878,589	4,070,955
2048-49	154,498	29,038	183,536	2,272,420	1,953,192	4,225,613
2049-50	155,391	29,312	184,703	2,355,398	2,030,758	4,386,156

- (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) Reflects actual experience through April 2020.
- (5) March 16, 2020 cash collection on Ticket System temporarily suspended.
- (6) June 14, 2020 cash collection on Ticket System is assumed to resume.
- (7) Reflects Ticket System 45% cash surcharge effective on October 1, 2020.
- (8) Reflects 6% Systemwide toll increase effective October 1, 2020. No January 2021 toll increase will occur.
- (9) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (10) Reflects Ticket System AET conversion effective October 1, 2021.



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Table 20
Barrier Systems: Estimated Annual Transactions and Gross Toll Revenue (1)
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
2017-18 (2,3)	41,707	7,068	48,775	\$99,048	\$61,664	\$160,712
2018-19 (2,4,5)	43,870	7,605	51,475	113,893	70,498	184,392
2019-20 (6,7,8)	39,281	7,508	46,789	111,040	75,841	186,882
2020-21 (9,10,11,12)	38,796	6,932	45,728	119,860	74,165	194,025
2021-22 (12,13,14)	45,581	7,696	53,277	142,812	81,322	224,134
2022-23 (12)	49,170	8,548	57,718	153,687	89,975	243,662
2023-24 (12)	50,394	8,868	59,261	163,633	97,006	260,640
2024-25 (12)	51,489	9,129	60,619	174,081	103,916	277,997
2025-26 (12)	52,430	9,346	61,776	184,555	110,704	295,259
2026-27	53,293	9,538	62,831	194,171	116,842	311,013
2027-28	53,788	9,605	63,393	202,499	121,627	324,126
2028-29	54,281	9,683	63,964	210,518	126,450	336,969
2029-30	54,749	9,778	64,527	218,751	131,777	350,527
2030-31	55,182	9,871	65,053	227,192	137,298	364,490
2031-32	55,581	9,964	65,545	235,883	143,025	378,907
2032-33	55,966	10,056	66,021	244,902	148,963	393,865
2033-34	56,331	10,147	66,478	254,242	155,125	409,366
2034-35	56,687	10,238	66,925	263,867	161,500	425,367
2035-36	57,033	10,329	67,362	273,786	168,086	441,872
2036-37	57,370	10,419	67,789	284,019	174,894	458,913
2037-38	57,691	10,508	68,199	294,494	181,919	476,413
2038-39	58,009	10,596	68,605	305,277	189,213	494,490
2039-40	58,326	10,685	69,011	316,426	196,786	513,212
2040-41	58,640	10,773	69,413	327,940	204,647	532,587
2041-42	58,945	10,862	69,807	339,806	212,806	552,612
2042-43	59,241	10,950	70,190	352,020	221,272	573,292
2043-44	59,528	11,037	70,565	364,602	230,058	594,660
2044-45	59,808	11,125	70,933	377,563	239,177	616,740
2045-46	60,078	11,212	71,290	390,907	248,639	639,545
2046-47	60,341	11,299	71,640	404,660	258,458	663,118
2047-48	60,599	11,386	71,985	418,848	268,650	687,498
2048-49	60,857	11,474	72,331	433,534	279,243	712,777
2049-50	61,117	11,562	72,679	448,735	290,255	738,989

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The two Northeast Extension Barrier Plazas were converted to AET at the end of April 2018.
- (4) The Findlay Connector converted to AET in early June 2018.
- (5) The partial I-95 Interchange (Stage 1) opened in September 2018.
- (6) AKH and Gateway converted to AET at the end of October 2019.
- (7) Reflects actual experience through April 2020.
- (8) March 16, 2020 cash collection on PA 43 (Mon-Fayette Expressway) temporarily suspended.
- (9) June 14, 2020 cash collection on PA 43 is assumed to resume.
- (10) Reflects PA 43 45% cash surcharge effective on October 1, 2020.
- (11) Reflects 6% Systemwide toll increase effective October 1, 2020. No January 2021 toll increase will occur.
- (12) Reflects COVID-19 related recessionary impacts through FY 2025-26.
- (13) Reflects PA 43 (Mon-Fayette Expressway) AET conversion effective October 1, 2021.
- (14) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Table 21
Total System: Estimated Annual Transactions and Gross Toll Revenue (1)
 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		
2017-18 (2,3)	172,512	28,650	201,162	\$678,741	\$524,418	\$1,203,158	\$(6,552)	\$1,196,606
2018-19 (2,4,5)	173,429	29,625	203,054	740,578	594,808	1,335,385	(8,349)	1,327,037
2019-20 (6,7,8)	148,659	28,540	177,199	675,163	604,331	1,279,494	(9,483)	1,270,011
2020-21 (9,10,11,12)	145,840	26,623	172,463	747,013	616,066	1,363,078	(10,687)	1,352,391
2021-22 (12,13,14)	166,752	28,452	195,203	903,846	674,909	1,578,756	(12,546)	1,566,210
2022-23 (12)	171,447	29,938	201,385	946,006	729,638	1,675,644	(14,243)	1,661,401
2023-24 (12)	174,136	30,770	204,906	1,002,643	782,517	1,785,160	(15,822)	1,769,339
2024-25 (12)	176,935	31,464	208,398	1,064,281	835,134	1,899,415	(17,323)	1,882,092
2025-26 (12)	179,793	32,132	211,925	1,126,749	887,280	2,014,029	(18,405)	1,995,624
2026-27	182,654	32,770	215,424	1,183,807	934,470	2,118,277	(19,384)	2,098,894
2027-28	184,654	33,053	217,707	1,233,695	971,262	2,204,957	(20,147)	2,184,810
2028-29	186,621	33,371	219,991	1,281,030	1,008,771	2,289,801	(20,925)	2,268,876
2029-30	188,521	33,740	222,261	1,330,568	1,050,973	2,381,540	(21,800)	2,359,740
2030-31	190,327	34,106	224,433	1,383,616	1,094,869	2,478,485	(22,711)	2,455,774
2031-32	192,072	34,472	226,544	1,439,484	1,140,433	2,579,917	(23,656)	2,556,261
2032-33	193,787	34,837	228,624	1,497,365	1,187,724	2,685,089	(24,637)	2,660,452
2033-34	195,439	35,201	230,640	1,557,001	1,236,814	2,793,816	(25,655)	2,768,160
2034-35	197,042	35,565	232,607	1,618,460	1,287,764	2,906,224	(26,712)	2,879,512
2035-36	198,600	35,929	234,529	1,681,812	1,340,638	3,022,450	(27,809)	2,994,642
2036-37	200,128	36,287	236,415	1,747,269	1,395,244	3,142,512	(28,941)	3,113,571
2037-38	201,562	36,635	238,197	1,814,192	1,451,503	3,265,696	(30,108)	3,235,587
2038-39	202,954	36,983	239,937	1,883,087	1,509,908	3,392,995	(31,320)	3,361,675
2039-40	204,329	37,333	241,661	1,954,308	1,570,542	3,524,850	(32,578)	3,492,272
2040-41	205,680	37,683	243,363	2,027,858	1,633,497	3,661,355	(33,884)	3,627,471
2041-42	207,000	38,033	245,033	2,103,739	1,698,866	3,802,604	(35,239)	3,767,365
2042-43	208,278	38,384	246,662	2,181,908	1,766,737	3,948,646	(36,647)	3,911,998
2043-44	209,522	38,736	248,259	2,262,515	1,837,218	4,099,734	(38,109)	4,061,624
2044-45	210,735	39,089	249,824	2,345,639	1,910,404	4,256,044	(39,627)	4,216,416
2045-46	211,913	39,443	251,356	2,431,310	1,986,390	4,417,700	(41,204)	4,376,496
2046-47	213,070	39,797	252,867	2,519,792	2,065,293	4,585,085	(42,840)	4,542,245
2047-48	214,210	40,153	254,362	2,611,214	2,147,239	4,758,453	(44,540)	4,713,913
2048-49	215,356	40,512	255,867	2,705,955	2,232,436	4,938,390	(46,307)	4,892,083
2049-50	216,508	40,874	257,382	2,804,133	2,321,013	5,125,146	(48,145)	5,077,001

- (1) Annual toll rate increases are implemented on or about January 1st of each year.
- (2) Reflects actual traffic and revenue experience.
- (3) The two Northeast Extension Barrier Plazas were converted to AET at the end of April 2018.
- (4) The Findlay Connector converted to AET in early June 2018.
- (5) The partial I-95 Interchange (Stage 1) opened in September 2018.
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- (13) Reflects Ticket System and PA 43 AET conversion effective October 1, 2021.
- (14) Reflects opening of Southern Beltway between US 22 and I-79 beginning in January 2022.



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Table 22
Comparison of New Traffic and Revenue
Estimates with those from the 2019 Bring Down Letter
Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year	Total Annual Transactions			Annual Net Toll Revenue		
	Current Estimates (1)	2019 Bring Down Letter (2)	Percent Difference	Current Estimates (1)	2019 Bring Down Letter (2)	Percent Difference
2017-18	201,162	201,162	0.0	\$1,196,606	\$1,196,606	0.0
2018-19	203,054	202,051	0.5	1,327,037	1,306,722	1.6
2019-20	177,199	201,542	(12.1)	1,270,011	1,390,057	(8.6)
2020-21	172,463	201,100	(14.2)	1,352,391	1,473,739	(8.2)
2021-22	195,203	203,711	(4.2)	1,566,210	1,555,172	0.7
2022-23	201,385	208,716	(3.5)	1,661,401	1,647,361	0.9
2023-24	204,906	211,394	(3.1)	1,769,339	1,742,814	1.5
2024-25	208,398	214,001	(2.6)	1,882,092	1,844,500	2.0
2025-26	211,925	216,655	(2.2)	1,995,624	1,946,821	2.5
2026-27	215,424	219,283	(1.8)	2,098,894	2,039,137	2.9
2027-28	217,707	221,593	(1.8)	2,184,810	2,124,036	2.9
2028-29	219,991	223,895	(1.7)	2,268,876	2,206,883	2.8
2029-30	222,261	226,188	(1.7)	2,359,740	2,295,186	2.8
2030-31	224,433	228,424	(1.7)	2,455,774	2,386,729	2.9
2031-32	226,544	230,630	(1.8)	2,556,261	2,482,933	3.0
2032-33	228,624	232,806	(1.8)	2,660,452	2,584,008	3.0
2033-34	230,640	234,916	(1.8)	2,768,160	2,688,432	3.0
2034-35	232,607	236,976	(1.8)	2,879,512	2,796,466	3.0
2035-36	234,529	238,984	(1.9)	2,994,642	2,908,287	3.0
2036-37	236,415	240,948	(1.9)	3,113,571	3,023,823	3.0
2037-38	238,197	242,805	(1.9)	3,235,587	3,142,370	3.0
2038-39	239,937	244,619	(1.9)	3,361,675	3,264,899	3.0
2039-40	241,661	246,403	(1.9)	3,492,272	3,391,799	3.0
2040-41	243,363	248,142	(1.9)	3,627,471	3,523,128	3.0
2041-42	245,033	249,849	(1.9)	3,767,365	3,659,011	3.0
2042-43	246,662	251,513	(1.9)	3,911,998	3,799,505	3.0
2043-44	248,259	253,145	(1.9)	4,061,624	3,944,855	3.0
2044-45	249,824	254,745	(1.9)	4,216,416	4,095,230	3.0
2045-46	251,356	256,309	(1.9)	4,376,496	4,250,751	3.0
2046-47	252,867	257,853	(1.9)	4,542,245	4,411,783	3.0
2047-48	254,362	259,381	(1.9)	4,713,913	4,578,572	3.0
2048-49	255,867	260,919	(1.9)	4,892,083	4,751,678	3.0
2049-50	257,382	N/A	N/A	5,077,001	N/A	N/A

(1) Reflects actual traffic and revenue experience through April 2020.
 (2) Reflects actual traffic and revenue experience through February 2019.



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1.7 percent by FY 2028-29. Over the remainder of the forecast period, the updated estimates are forecast to grow slightly slower than previously forecast such that by FY 2048-49 we now estimate that total toll transactions will be about 1.9 percent lower than the previous estimates. This longer-term difference is partly a result of slightly higher toll increase assumptions in the current forecast, including the 45-percent cash surcharge on Ticket System and MFE traffic as well as the six-percent Systemwide toll increase in October 2020. The 45-percent increase is new and the six-percent October 2020 increase was previously assumed to be a five-percent increase in January 2020.

Due to the COVID-19 pandemic FY 2019-20 (which includes 11 months of actual data) and FY 2020-21 are each forecast to have approximately eight percent less revenue than previously estimated. Yet, revenue is now forecast to grow faster and despite reduced transactions FY 2021-22 revenue is now estimated to be 0.7 percent higher than previously estimated. Revenue is expected to continue growing faster than previously forecast such that by the end of the prior forecast period in FY 2048-49 revenue is now estimated to be 3.0 percent higher. Unlike with traffic forecasts, new revenue forecasts remain higher than previous forecasts over the entire forecast period. This is because average toll rates for commercial vehicles are now higher than previously assumed. This occurs due to lower E-ZPass market share assumptions for commercial vehicles at recently converted AET facilities over the forecast period. Revenue is also positively impacted as a result of a 45-percent cash surcharge on the Ticket System and MFE and a six-percent toll increase in October 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.





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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 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.

* * *

Sincerely,

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