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May 3, 2017

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

Subject: Pennsylvania Turnpike Commission 2017 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 (2017 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 *2016 Traffic and Toll Revenue Bring Down Letter* (2016 Bring Down Letter), dated March 4, 2016. The original comprehensive investment grade study titled as *2015 Traffic and Toll Revenue Forecast Study* (2015 Forecast Study) was submitted on March 17, 2015. The 2016 Bring Down Letter presented traffic and gross toll revenue forecasts from fiscal year (FY) 2015-16 through FY 2043-44, or 30 years. A fiscal year runs from June 1 through May 31. Actual traffic and revenue data were available through January 2016 for the 2016 Bring Down Letter and through March 2017 for the current 2017 Bring Down Letter.

This 2017 Bring Down Letter presents actual traffic and toll revenue data through March 2017 (the most recent month of actual experience), compares the forecasts between the 2017 Bring Down Letter and the 2016 Bring Down Letter, and provides updated traffic and revenue forecasts through FY 2044-45. The updated forecasts reflect the following changes from the 2016 Bring Down Letter.

- E-ZPass market share assumptions were increased slightly to reflect the fact that actual E-ZPass market share over the last 14 months has moderately exceeded assumptions in the 2016 Bring Down Letter.
- Actual traffic and toll revenue data for an additional 14 months (through March 2017).
- Normal traffic growth assumptions were adjusted downward slightly compared to those assumed in the 2016 Bring Down Letter.



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These differences are described in more detail in the following sections.

It is important to note that the intent of this Bring Down Letter is to review and revise, if warranted, the short term forecasts originally developed as part of the 2015 Forecast Study. Any adjustments would be made based on the 14 months of new actual traffic and toll revenue experience since the 2016 Bring Down Letter. Since this Bring Down Letter does not include a reevaluation of the longer term economic growth forecasts, critical attention was placed on a review of near term growth through 2019 only. Growth rates beyond 2019 remain unchanged from those in the 2016 Bring Down Letter.

For a detailed review of the longer term growth assumptions, the 2015 Forecast Study provides information on the socioeconomic trends and forecasts for the state, region and country that formed the basis for the original traffic and toll revenue forecasts. Additional information regarding the Pennsylvania Turnpike (Turnpike), such as historical toll rate increases, sample toll rates, E-ZPass market share, and more, are also provided in the 2015 Forecast Study.

### **Historical Toll Rate Increases and Current Toll Rates**

Table 1 provides a historical summary of toll rate increases on the Turnpike System from 2004 to the most recent increase implemented on January 8, 2017. Rate increases are presented as a percent increase over the previous toll rate for cash and E-ZPass. The most recent rate increases ranged from 5.0 percent to 6.0 percent and were implemented annually. Since 2009 the PTC has implemented annual system-wide toll increases with a few exceptions. A section of Turnpike 43 was exempted from the rate increase in 2009. The Turnpike 576 was exempted from 2009 through 2012, and 2014 through 2017. The Delaware River Bridge was also exempted from toll rate increases in 2017, and will also not change toll rates in 2018.

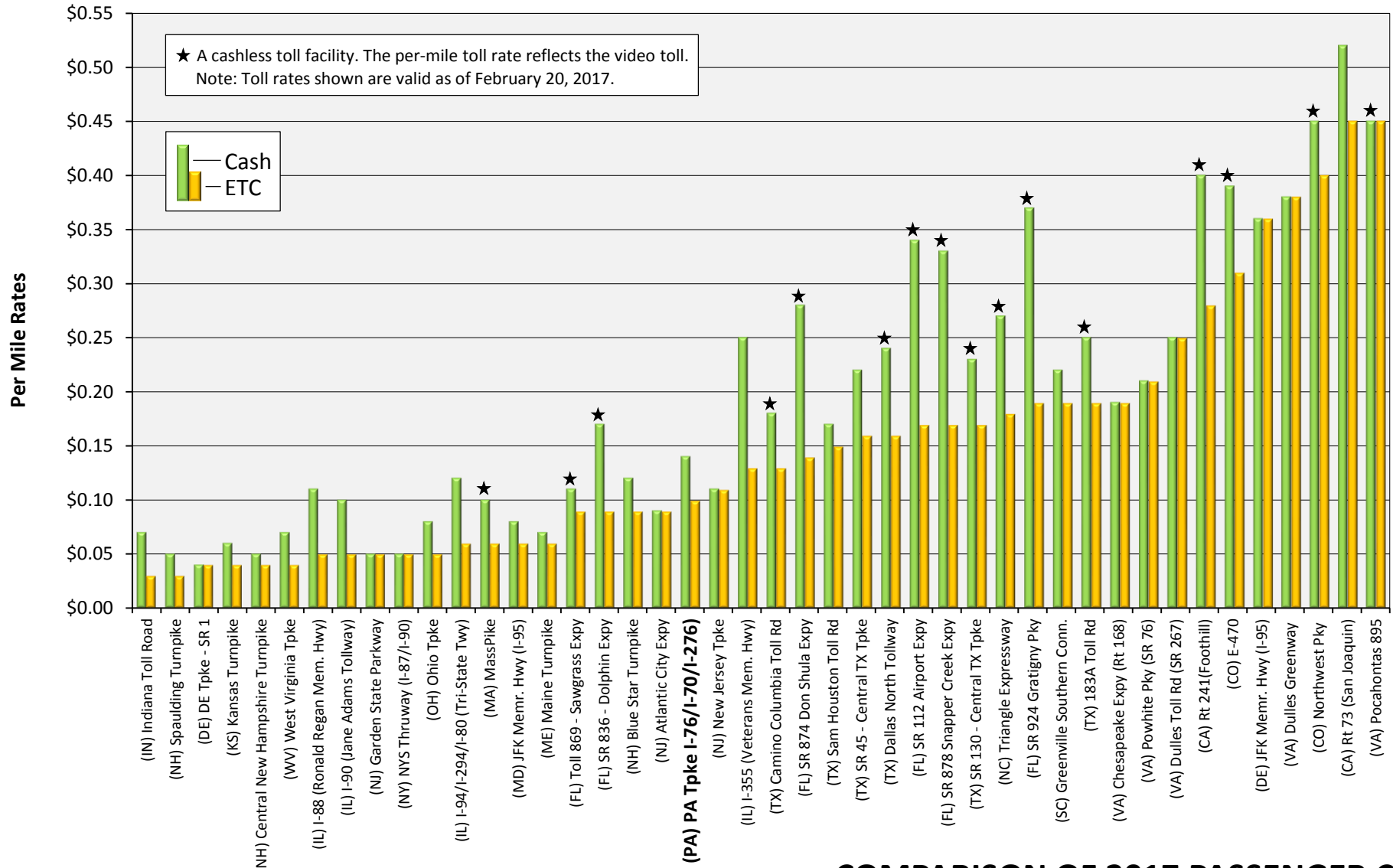
The first toll increase that created a differential between cash and E-ZPass toll rates was implemented on January 2, 2011, when E-ZPass tolls were increased by 3.0 percent and cash tolls were increased by 10.0 percent. Starting in 2015, cash and E-ZPass toll rates have grown at the same rate as one another. Equal toll rate increases, by payment type, will be applied every year into the future, though the magnitude of the toll rate increase will vary somewhat each year. This will be discussed in more detail later in this report.

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

Date	Percent Increase		Comment
	Cash	E-ZPass	
8/1/2004	42.5	42.5	
1/4/2009	25.0	25.0	No toll increase on Turnpike I-576 or Turnpike 43 between Uniontown and Brownsville
1/3/2010	3.0	3.0	No toll increase on Turnpike I-576
1/2/2011	10.0	3.0	No toll increase on Turnpike I-576
1/1/2012	10.0	0.0	No toll increase on Turnpike I-576
1/6/2013	10.0	2.0	
1/5/2014	12.0	2.0	No toll increase on Turnpike I-576
1/4/2015	5.0	5.0	No toll increase on Turnpike I-576
1/3/2016	6.0	6.0	No toll increase on Turnpike I-576
1/8/2017	6.0	6.0	No toll increase on Turnpike I-576 or Delaware River Bridge

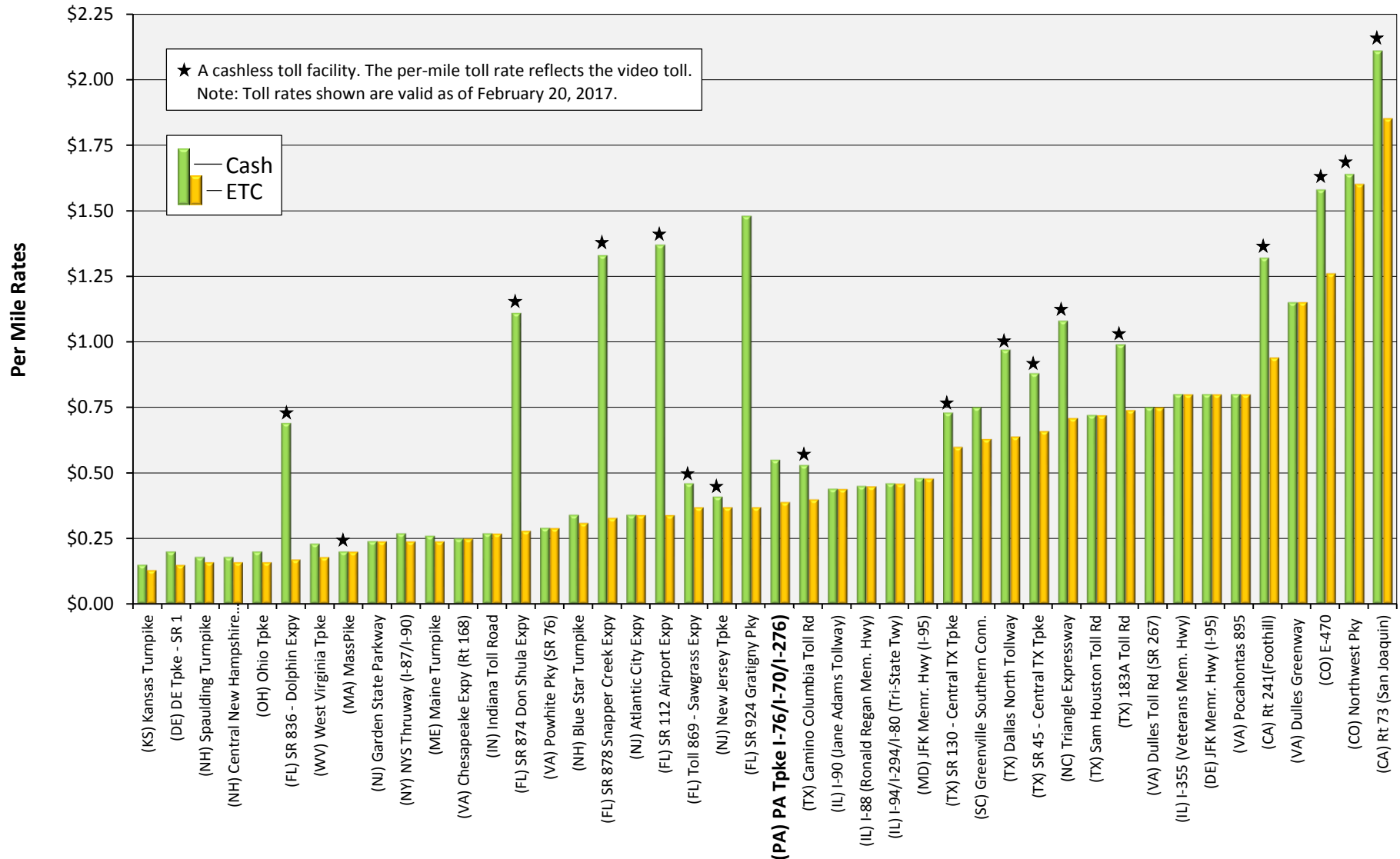
Figures 1 and 2 show the 2017 per-mile toll rates for a through trip on 44 U.S. toll facilities, for passenger cars and commercial vehicles, respectively. Per-mile rates are shown for both cash and ETC transactions in each figure. The per-mile toll rate is shown for the Pennsylvania Turnpike Ticket System, which is by far the largest component of the Turnpike System comprising about 78 percent of all transactions and 90 percent of all toll revenue in CY 2016. The purpose of these figures is to show that even with the eight consecutive annual toll increases since 2009, the passenger car per-mile toll rates on the Pennsylvania Turnpike System, at 10 cents per mile for E-ZPass customers and 14 cents per mile for cash customers are still very reasonably priced compared to other major toll facilities in the U.S.

Rates for commercial vehicles on the Ticket System amount to 39 cents per mile for E-ZPass and 55 cents per mile for cash transactions. It should be remembered that the vast majority of both passenger car and commercial vehicle trips are made using the more cost effective E-ZPass payment method.



**COMPARISON OF 2017 PASSENGER CAR PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)**





**COMPARISON OF 2017 FIVE-AXLE VEHICLE PER-MILE THROUGH TRIP TOLL RATES (DATA SORTED BY ETC TOLL RATES)**



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

Table 2 provides a summary of annual Systemwide transactions and gross toll revenue trends from FY 1994-95 through FY 2015-16. The Pennsylvania Turnpike System is a large, mature system that has demonstrated long-term growth in transactions and toll revenue. Between FY 1994-95 and FY 2005-06, Turnpike transactions and adjusted toll revenue grew by an average annual rate of 3.3 percent and 6.4 percent, respectively. Similarly, in the 10 years from FY 2005-06 to FY 2015-16, Turnpike transactions and adjusted gross toll revenue grew by average annual rates of 0.7 percent and 5.8 percent, respectively. The effect of the great recession can be observed in this trend table, most notably in FY 2008-2009. Traffic growth in the most recently completed fiscal year (2015-16) was the highest (3.4 percent) since FY 2003-04. Revenue growth in the most recent fiscal year was 10.7 percent, a level not achieved since FY 2009-10.

### **Monthly Transactions and Gross Toll revenue Trends**

Tables 3 through 10 present recent monthly transaction and revenue trends from FY 2013-14 through March 2017 for all PTC toll facilities. The facilities are summarized in the following order:

- The Total Turnpike System (comprised of all the facilities listed below);
- The Ticket System – comprised of I-76/I-276 and I-476 (including Gateway Barrier Plaza);
- Turnpike 43 (Mon/Fayette Expressway);
- Turnpike 66 (Amos K. Hutchinson Bypass);
- Northeast Extension (I-476) Barrier Plazas;
- Turnpike I-376 (Beaver Valley Expressway);
- Turnpike I-576 (Southern Beltway – Findlay Connector) and;
- Delaware River Bridge.

The information is provided by passenger cars, commercial vehicles, and total vehicles. For comparative purposes, subtotals are provided for June through March for each fiscal year. It should be noted that the Delaware River Bridge (DRB) was converted to a westbound only cashless tolling system in January 2016. In previous Bring Down Letters, DRB traffic and revenue data were included in the Ticket System. For this Bring Down Letter, data for the DRB are shown separately.

As shown in Table 3, Systemwide toll revenue increased by 7.9 percent in FY 2014-15, and 10.7 percent in FY 2015-16. Year to date (June 2016 through March 2017) toll revenue growth was 8.6 percent compared to the same period in the prior year. Commercial vehicle toll revenue increased by 8.3 and passenger car toll revenue increased by 8.8 percent from June 2016 through March 2017

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

Fiscal Year	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	Prior	Prior	Prior	Prior	Prior		
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 (1)	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 (2)	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 (3)	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 (4)	165,230	1.0	23,812	3.8	189,042	1.3	435,752	4.8	328,105	8.6	763,856	6.4
2011-12 (5)	164,960	(0.2)	24,127	1.3	189,087	0.0	455,133	4.4	342,646	4.4	797,779	4.4
2012-13 (6)	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 (7)	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 (8)	166,190	1.5	26,144	5.0	192,334	1.9	533,054	7.1	401,197	8.9	934,252	7.9
2015-16 (9,10)	171,565	3.2	27,319	4.5	198,884	3.4	590,229	10.7	443,902	10.6	1,034,131	10.7

**Average Annual Percent Change**

Fiscal Year	Transactions			Adjusted Gross Toll Revenue (9)		
	Cars	Trucks	Total	Cars	Trucks	Total
FY 1994-95 - FY 2005-06	3.2	4.5	3.3	6.2	6.6	6.4
FY 2005-06 - FY 2015-16	0.7	0.8	0.7	6.3	5.2	5.8
FY 1994-95 - FY 2015-16	2.0	2.7	2.1	6.2	6.0	6.1

- (1) A toll increase of 42.5% was implemented on August 1, 2004.
- (2) A toll increase of 25% was implemented on January 4, 2009. Toll rates on Turnpike I-576 and PA 43 Unionville to Brownsville remained unchanged.
- (3) A toll increase of 3% was implemented on January 3, 2010, except for Turnpike I-576 where the toll rates did not increase.
- (4) An E-ZPass toll increase of 3% and a cash toll increase of 10% was implemented on January 2, 2011, except for Turnpike I-576 where the toll rates did not increase.
- (5) A cash toll increase of 10% was implemented on January 1, 2012, except for Turnpike I-576 where the toll rates did not increase.
- (6) An E-ZPass toll increase of 2% and a cash toll increase of 10% was implemented on January 6, 2013.
- (7) An E-ZPass toll increase of 2% and a cash toll increase of 12% was implemented on January 1, 2014, except for Turnpike I-576.
- (8) A toll increase of 5% was implemented on January 4, 2015, except for Turnpike I-576 where toll rates remained unchanged.
- (9) A toll increase of 6% was implemented on January 3, 2016, except for Turnpike I-576 where toll rates remained unchanged.
- (10) Tolloed revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions beginning January 3, 2016.



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**Table 3**  
**Total Turnpike System - Monthly Transaction and Revenue Trends**  
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Transactions (in 1,000s)			Total Vehicles											
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16									
June	14,311	1.6	14,535	2.2	14,849	3.7	15,394	2,112	7.1	2,261	6.0	2,398	6.4	2,550	16,423	2.3	16,797	2.7	17,246	4.1	17,945
July	14,906	1.6	15,138	3.3	15,643	0.9	15,783	2,215	6.1	2,351	3.3	2,429	(0.4)	2,419	17,121	2.1	17,489	3.3	18,072	0.7	18,202
August	15,433	(0.1)	15,425	1.0	15,584	2.5	15,967	2,264	1.6	2,301	3.9	2,390	9.5	2,616	17,698	0.2	17,726	1.4	17,974	3.4	18,583
September	13,891	0.6	13,974	1.8	14,220	4.2	14,817	2,101	8.3	2,275	3.9	2,364	3.3	2,442	15,993	1.6	16,249	2.1	16,584	4.1	17,260
October	14,670	1.4	14,876	1.3	15,067	1.1	15,235	2,287	5.5	2,412	1.6	2,450	(0.8)	2,429	16,957	2.0	17,288	1.3	17,517	0.8	17,665
November	13,420	(0.5)	13,358	4.5	13,965	3.5	14,458	1,960	2.6	2,011	5.7	2,125	5.2	2,236	15,380	(0.1)	15,368	4.7	16,090	3.8	16,694
December	13,058	3.3	13,491	3.5	13,960	0.7	14,051	1,864	9.8	2,046	3.4	2,116	1.7	2,153	14,922	4.1	15,537	3.5	16,076	0.8	16,204
January	11,708	1.7	11,905	3.1	12,273	2.7	12,609	1,875	3.2	1,935	0.6	1,947	3.4	2,014	13,578	1.9	13,840	2.7	14,220	2.8	14,622
February	10,738	4.8	11,249	10.9	12,476	(8.6)	11,408	1,740	4.8	1,822	9.5	1,996	(9.0)	1,816	12,478	4.8	13,072	10.7	14,472	(8.6)	13,223
March	13,188	0.2	13,211	8.5	14,328	(6.4)	13,416	2,021	6.0	2,142	9.2	2,338	(5.2)	2,216	15,210	0.9	15,353	8.5	16,666	(6.2)	15,632
April	13,778	2.4	14,109	(0.0)	14,105			2,167	4.4	2,262	3.1	2,333			15,946	2.7	16,371	0.4	16,488		
May	14,690	1.6	14,919	1.2	15,095			2,283	1.8	2,325	4.7	2,434			16,974	1.6	17,244	1.7	17,529		
Total Year	163,788	1.5	166,190	3.2	171,565			24,891	5.0	26,144	4.5	27,319			188,679	1.9	192,334	3.4	198,884		
Jun - Mar	135,320	1.4	137,162	3.8	142,365	0.5	143,139	20,440	5.5	21,557	4.6	22,552	1.5	22,892	155,760	1.9	158,719	3.9	164,917	0.7	166,031

Month	Passenger Cars			Commercial Vehicles			Total Revenue (in \$1,000s)			Total Vehicles											
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16									
June	\$44,913	6.3	\$47,759	6.8	\$50,991	13.2	\$57,743	\$30,938	8.7	\$33,638	11.8	\$37,614	13.8	\$42,794	\$75,851	7.3	\$81,397	8.9	\$88,606	13.5	\$100,537
July	48,219	6.9	51,527	9.9	56,625	12.1	63,499	31,597	9.3	34,536	9.1	37,680	8.8	40,995	79,816	7.8	86,063	9.6	94,305	10.8	104,494
August	49,761	6.6	53,065	5.7	56,072	8.2	60,684	32,289	5.3	33,994	8.8	36,983	17.5	43,463	82,050	6.1	87,060	6.9	93,054	11.9	104,147
September	41,023	4.9	43,042	10.2	47,419	16.4	55,202	30,066	11.4	33,490	8.9	36,472	12.7	41,113	71,089	7.7	76,532	9.6	83,891	14.8	96,315
October	42,409	7.8	45,711	7.9	49,331	12.4	55,431	32,692	8.6	35,507	6.4	37,786	5.9	40,011	75,101	8.1	81,218	7.3	87,117	9.6	95,442
November	39,752	7.0	42,534	10.5	47,013	12.4	52,823	28,554	5.9	30,250	9.4	33,096	12.4	37,214	68,306	6.6	72,785	10.1	80,109	12.4	90,037
December	39,259	6.4	41,766	8.8	45,446	12.1	50,933	27,577	13.0	31,154	6.8	33,264	11.2	36,992	66,886	9.1	72,921	7.9	78,709	11.7	87,925
January	33,403	8.2	36,138	14.6	41,428	7.6	44,592	28,936	9.2	31,609	8.2	34,212	7.2	36,663	62,338	8.7	67,747	11.7	75,640	7.4	81,255
February	30,259	10.0	33,282	23.1	40,986	(5.0)	38,957	27,168	9.5	29,753	18.4	35,234	(6.5)	32,933	57,427	9.8	63,035	20.9	76,220	(5.7)	71,890
March	39,421	4.7	41,277	20.9	49,886	(3.3)	48,232	31,644	10.4	34,940	15.7	40,442	0.6	40,690	71,065	7.3	76,218	18.5	90,328	(1.6)	88,922
April	42,363	8.3	45,872	8.3	49,683			32,811	9.5	35,912	11.6	40,066			75,174	8.8	81,784	9.7	89,749		
May	46,889	8.9	51,080	8.4	55,350			34,123	6.7	36,413	12.7	41,052			81,012	8.0	87,493	10.2	96,402		
Total Year	\$497,671	7.1	\$533,054	10.7	\$590,229			\$368,395	8.9	\$401,197	10.6	\$443,902			\$866,066	7.9	\$934,252	10.7	\$1,034,131		
Jun - Mar	\$408,418	6.8	\$436,102	11.3	\$485,197	8.8	\$528,095	\$301,461	9.1	\$328,872	10.3	\$362,783	8.3	\$392,869	\$709,879	7.8	\$764,974	10.9	\$847,980	8.6	\$920,964

**NOTES:**

- (1) On January 2, 2011, a 3% E-ZPass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.
- (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.
- (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.
- (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.
- (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.
- (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February, 2014, particularly among passenger cars.
- (10) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (11) Tolloed revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions.





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**Table 4**  
**Ticket System (Including Gateway Barrier Plaza) - Monthly Transactions and Revenue Trends**  
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.
June	11,540	11,720	2.3	1,744	1,852	6.7	13,284	13,572	2.9
July	11,959	12,128	3.8	1,816	1,910	4.6	13,775	14,039	3.9
August	12,343	12,285	2.0	1,852	1,862	4.8	14,195	14,147	2.3
September	11,105	11,123	2.2	1,719	1,719	0.0	12,824	12,842	0.1
October	11,738	11,876	1.6	1,873	1,919	2.4	13,611	13,795	1.4
November	10,812	10,760	4.8	1,617	1,648	1.9	12,429	12,408	0.2
December	10,484	10,902	3.7	1,552	1,700	10.3	12,036	12,602	4.7
January	9,478	9,619	1.5	1,560	1,606	3.0	11,038	11,225	1.7
February	8,585	9,101	6.0	1,439	1,518	5.5	10,023	10,619	5.9
March	10,649	10,627	5.1	1,666	1,763	5.8	12,314	12,390	0.6
April	11,096	11,380	2.5	1,789	1,863	4.1	12,885	13,243	2.8
May	11,809	11,977	1.4	1,874	1,910	1.9	13,683	13,887	1.5
Total Year	131,595	133,498	2.1	20,501	21,430	4.5	152,096	154,928	1.9
Jun - Mar	108,690	110,141	3.2	16,838	17,657	4.1	125,529	127,798	1.8

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.
June	\$41,761	\$44,385	6.9	\$29,642	\$32,145	12.1	\$71,403	\$76,530	7.2
July	44,889	47,942	10.2	30,200	32,935	9.5	75,089	80,876	7.7
August	46,287	49,340	6.0	30,847	32,420	5.1	77,134	81,759	6.0
September	37,868	39,655	10.7	28,725	31,911	11.1	66,593	71,566	7.5
October	39,100	42,161	8.2	31,235	33,884	8.5	70,335	76,045	8.1
November	36,810	39,455	10.8	27,346	28,927	5.8	64,156	68,382	6.6
December	36,350	38,684	9.0	26,444	29,877	13.0	62,795	68,561	9.2
January	30,782	33,317	9.6	27,743	30,349	9.4	58,524	63,666	8.8
February	27,690	30,622	17.2	26,037	28,580	9.8	53,728	59,202	10.2
March	36,382	38,063	15.6	30,311	33,495	11.2	66,693	71,558	7.3
April	39,166	42,487	8.5	31,396	34,407	9.6	70,562	76,894	9.0
May	43,440	47,413	9.1	32,623	34,875	6.9	76,063	82,287	8.2
Total Year	\$460,525	\$493,523	8.8	\$352,550	\$383,804	8.9	\$813,075	\$877,327	7.9
Jun - Mar	\$377,919	\$403,623	10.1	\$288,531	\$314,522	9.1	\$666,450	\$718,145	7.8

**NOTES:**

- (1) On January 2, 2011, a 3% E-ZPass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.
- (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.
- (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.
- (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.
- (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.
- (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February 2014, particularly among passenger cars.
- (10) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (11) Before January 2016, Delaware River Bridge traffic and revenue were included in Ticket System reporting.
- (12) Tolloed revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions.



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**Table 5**  
**Turnpike 43 - Mont/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							
	2013-14	%Chg	2014-15	%Chg	2015-16	%Chg	2016-17	2013-14	%Chg	2014-15	%Chg	2015-16	%Chg	2016-17
June	1,023	2.1	1,044	5.1	1,098	(1.4)	1,083	1,102	3.4	1,139	5.0	1,196	(1.5)	1,178
July	1,052	3.1	1,084	5.2	1,141	(2.6)	1,112	1,139	4.1	1,186	4.6	1,240	(3.4)	1,198
August	1,114	1.3	1,129	2.0	1,151	(0.9)	1,141	1,204	2.1	1,230	2.5	1,261	(2.0)	1,236
September	1,070	2.7	1,099	4.4	1,147	(3.5)	1,107	1,152	4.1	1,200	5.5	1,266	(5.5)	1,196
October	1,132	2.3	1,158	5.4	1,221	(7.1)	1,134	1,228	3.0	1,265	4.9	1,327	(7.9)	1,223
November	985	0.1	986	7.3	1,058	(4.3)	1,013	1,061	1.2	1,073	6.7	1,145	(4.7)	1,091
December	957	3.9	994	4.9	1,043	(5.6)	984	1,022	5.2	1,075	4.0	1,118	(5.5)	1,057
January	852	5.5	899	(1.4)	887	1.7	902	915	6.9	978	(2.5)	953	1.2	965
February	853	1.6	867	7.5	932	(4.3)	892	915	2.0	933	6.5	995	(3.8)	957
March	985	3.9	1,023	3.7	1,061	(3.1)	1,028	1,067	4.6	1,116	2.8	1,147	(3.5)	1,106
April	1,026	5.0	1,077	(2.5)	1,050			1,109	6.0	1,175	(3.7)	1,133		
May	1,082	6.1	1,147	(5.2)	1,088			1,174	6.3	1,248	(5.6)	1,178		
Total Year	12,129	3.1	12,508	2.9	12,876			13,089	4.0	13,618	2.5	13,958		
Jun - Mar	10,022	2.6	10,284	4.4	10,738	(3.2)	10,394	10,805	3.6	11,195	4.0	11,647	(3.8)	11,206

Month	Passenger Cars			Commercial Vehicles			Total Vehicles							
	2013-14	%Chg	2014-15	%Chg	2015-16	%Chg	2016-17	2013-14	%Chg	2014-15	%Chg	2015-16	%Chg	2016-17
June	\$1,253	7.1	\$1,341	9.5	\$1,468	4.4	\$1,532	\$274	23.8	\$339	8.1	\$366	1.5	\$372
July	1,290	8.2	1,397	9.8	1,533	3.4	1,586	297	20.6	358	2.2	366	(7.5)	338
August	1,362	6.8	1,454	6.1	1,542	4.4	1,610	305	16.3	355	11.8	397	(5.7)	374
September	1,295	7.6	1,393	8.1	1,506	2.2	1,539	280	26.5	354	17.9	417	(15.0)	355
October	1,363	7.4	1,464	8.7	1,592	(0.7)	1,581	323	17.0	378	2.1	386	(8.5)	353
November	1,186	5.2	1,248	11.1	1,386	1.3	1,404	258	19.0	307	4.0	319	(1.0)	316
December	1,156	9.0	1,259	9.5	1,379	(1.1)	1,363	230	26.0	290	0.4	292	0.5	293
January	1,069	10.0	1,176	3.9	1,222	6.1	1,297	228	30.4	297	(8.1)	273	(0.2)	272
February	1,077	5.6	1,138	13.1	1,287	1.0	1,300	225	11.2	250	4.7	262	8.0	283
March	1,250	8.0	1,350	9.7	1,481	1.6	1,505	289	18.6	343	(0.3)	342	(0.2)	341
April	1,297	9.6	1,421	2.7	1,460			303	20.2	364	(9.5)	329		
May	1,385	10.7	1,534	(0.4)	1,528			330	10.5	365	(2.4)	356		
Total Year	\$14,984	7.9	\$16,174	7.5	\$17,384			\$3,342	19.7	\$4,000	2.6	\$4,106		
Jun - Mar	\$12,301	7.5	\$13,219	8.9	\$14,397	2.2	\$14,717	\$2,709	20.8	\$3,271	4.5	\$3,420	(3.6)	\$3,297

**NOTES:**

- (1) On January 2, 2011, a 3% E-Zpass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.
- (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.
- (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.
- (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.
- (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.
- (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February 2014, particularly among passenger cars.



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**Table 6**  
**Turnpike 66 - Amos K. Hutchinson Bypass - Monthly Transaction and Revenue Trends**  
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles						
	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.				
June	573	1.8	(0.8)	579	(2.7)	563	664	2.6	681	(1.1)	674	(2.7)	656
July	588	0.8	(0.1)	591	(5.3)	560	684	1.2	692	(0.4)	689	(6.0)	648
August	612	(0.7)	(3.4)	587	(2.5)	572	713	(0.7)	707	(3.4)	684	(2.2)	669
September	581	3.3	(4.8)	571	(2.0)	560	675	4.3	704	(5.7)	665	(1.6)	654
October	612	4.4	(6.0)	600	(3.9)	577	710	5.2	747	(5.7)	705	(5.1)	669
November	561	(0.4)	(1.6)	550	(1.4)	542	641	1.6	651	(2.4)	635	(2.2)	621
December	561	0.9	(0.3)	564	(4.3)	540	633	2.6	649	(0.5)	646	(5.6)	610
January	489	4.2	(5.7)	480	1.3	487	566	3.3	585	(5.5)	552	0.5	555
February	474	(0.1)	(4.7)	473	3.2	467	546	0.1	547	2.3	559	(4.6)	533
March	551	1.5	(0.9)	554	(3.0)	537	635	1.5	645	(0.9)	639	(2.9)	620
April	573	0.0	(4.2)	549			666	0.0	666	(4.3)	637		
May	608	(0.6)	(4.9)	575			708	(1.6)	697	(4.1)	669		
Total Year	6,782	1.2	6,866	(2.6)	6,680		7,841	1.7	7,971	(2.7)	7,753		
Jun - Mar	5,602	1.6	5,689	(2.2)	5,566	(2.9)	6,467	2.2	6,608	(2.4)	6,447	(3.3)	6,235

Month	Passenger Cars			Commercial Vehicles			Total Vehicles						
	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.	2013-14	2014-15	% Chg.				
June	\$780	6.9	\$833	2.7	\$856	2.1	\$1,137	9.1	\$1,240	1.1	\$1,253	1.3	\$1,269
July	800	6.3	851	3.5	880	(0.6)	1,172	7.8	1,264	1.6	1,285	(2.6)	1,252
August	831	4.8	871	0.1	872	1.6	1,219	4.7	1,276	(0.6)	1,268	3.3	1,311
September	785	7.9	846	(1.4)	843	2.9	1,150	10.6	1,272	(3.7)	1,226	4.3	1,278
October	824	8.6	895	(1.4)	882	1.1	1,208	10.0	1,329	(0.8)	1,318	(2.1)	1,290
November	753	4.7	788	2.3	806	3.5	1,062	9.7	1,164	(0.4)	1,160	1.0	1,171
December	751	5.8	795	3.5	823	0.6	1,040	8.8	1,131	2.6	1,161	(3.1)	1,125
January	678	9.0	739	(1.1)	731	5.6	1,003	4.9	1,052	(0.0)	1,052	3.0	1,084
February	663	3.8	688	8.4	746	0.9	967	3.2	998	5.8	1,056	0.6	1,062
March	778	5.1	818	4.2	852	1.8	1,137	3.1	1,173	4.5	1,225	2.0	1,250
April	810	3.8	841	0.4	844		1,204	2.3	1,231	0.2	1,234		
May	864	3.3	892	(0.7)	886		1,283	(0.6)	1,276	1.4	1,293		
Total Year	\$9,317	5.8	\$9,857	1.7	\$10,021		\$13,582	6.1	\$14,406	0.9	\$14,530		
Jun - Mar	\$7,643	6.3	\$8,124	2.1	\$8,291	1.9	\$11,095	7.3	\$11,899	0.9	\$12,003	0.7	\$12,091

**NOTES:**  
 (1) On January 2, 2011, a 3% E-Zpass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.  
 (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.  
 (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.  
 (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.  
 (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.  
 (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February 2014, particularly among passenger cars.



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**Table 7**  
**Northeast Extension Barrier Plazas - Monthly Transaction and Revenue Trends**  
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles														
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16												
June	469	(4.0)	450	(0.5)	448	(6.9)	417	91	3.2	94	6.7	100	0.4	101	560	(2.8)	544	0.7	548	(5.5)	518
July	560	0.6	563	(1.6)	554	(6.4)	519	102	5.0	107	(4.1)	102	(2.3)	100	662	1.2	670	(2.0)	657	(5.8)	619
August	602	1.7	612	(8.2)	562	(10.6)	502	102	6.6	109	(6.1)	102	3.8	106	704	2.4	721	(7.9)	664	(8.4)	608
September	438	(0.5)	436	(2.0)	427	(7.3)	396	92	9.8	101	(4.2)	97	0.4	97	530	1.3	537	(2.4)	524	(5.9)	493
October	453	3.5	469	(3.7)	452	(11.9)	398	95	8.6	104	(2.2)	101	(8.2)	93	549	4.4	573	(3.4)	553	(11.2)	491
November	404	(0.5)	402	1.1	406	(7.4)	376	81	(0.6)	80	7.2	86	3.7	89	485	(0.6)	482	2.1	492	(5.5)	466
December	388	(8.3)	356	3.5	369	(10.9)	329	79	(0.8)	78	6.3	83	(0.5)	83	467	(7.0)	434	4.0	452	(9.0)	411
January	307	(4.3)	294	(2.1)	288	(3.9)	277	80	(3.2)	77	(0.0)	77	5.6	81	387	(4.1)	371	(1.7)	365	(1.9)	358
February	279	(3.4)	269	6.3	286	(6.8)	267	73	0.1	73	4.0	76	1.2	77	352	(2.7)	342	5.8	362	(5.1)	344
March	352	(3.2)	341	3.1	351	(15.4)	297	83	2.8	85	1.7	86	1.0	87	435	(2.1)	426	2.8	438	(12.2)	384
April	398	(2.7)	387	(6.7)	361			87	1.4	88	0.9	89		87	485	(2.0)	476	(5.3)	451		
May	450	2.7	462	(6.4)	433			95	3.0	98	0.9	99		99	545	2.8	560	(5.1)	531		
Total Year	5,101	(1.2)	5,042	(2.1)	4,937			1,060	3.3	1,094	0.5	1,100		914	6,160	(0.4)	6,136	(1.6)	6,037		
Jun - Mar	4,253	(1.4)	4,193	(1.2)	4,143	(8.8)	3,777	877	3.5	908	0.4	912	0.3	914	5,130	(0.6)	5,100	(0.9)	5,055	(7.2)	4,692

Month	Passenger Cars			Commercial Vehicles			Total Vehicles														
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16												
June	\$379	1.0	\$383	4.0	\$398	(2.4)	\$389	\$364	7.7	\$392	11.1	\$435	8.5	\$472	\$743	4.2	\$775	7.6	\$834	3.3	\$861
July	454	6.2	483	3.1	497	(1.5)	490	403	8.9	439	(1.5)	432	5.7	457	857	7.5	921	0.9	930	1.8	947
August	486	7.7	524	(4.2)	502	(6.4)	470	405	9.8	445	(2.5)	434	13.3	491	891	8.7	969	(3.4)	936	2.7	961
September	350	4.4	366	2.7	376	(2.5)	366	369	13.5	419	(0.1)	419	7.9	452	719	9.1	785	1.2	794	3.0	818
October	361	8.9	393	0.9	397	(8.1)	365	394	10.6	436	1.2	441	(2.4)	430	755	9.8	829	1.1	838	(5.1)	796
November	320	4.6	335	5.7	354	(3.2)	343	336	1.1	340	11.8	380	9.1	415	657	2.8	675	8.8	734	3.2	757
December	307	(3.9)	295	8.5	320	(7.1)	298	331	2.3	339	9.9	372	4.3	388	638	(0.7)	634	9.2	693	(1.0)	686
January	255	(0.8)	253	3.0	261	(0.1)	260	344	0.6	346	5.7	366	10.9	406	599	(0.0)	599	4.6	627	6.3	666
February	232	0.5	233	11.5	260	(1.8)	256	316	4.1	329	10.4	364	5.3	383	549	2.5	563	10.9	624	2.3	638
March	297	0.8	299	8.3	324	(11.5)	287	358	7.4	385	7.6	414	6.8	442	655	4.4	684	7.9	738	(1.2)	729
April	338	1.1	341	(1.7)	336		0	373	6.0	395	8.9	431		442	711	3.7	737	4.0	766		
May	381	7.6	410	(2.1)	401		0	396	7.0	424	10.2	467		467	777	7.3	834	4.2	868		
Total Year	\$4,162	3.7	\$4,316	2.6	\$4,427			\$4,391	6.8	\$4,689	5.7	\$4,955			\$8,553	5.3	\$9,004	4.2	\$9,382		
Jun - Mar	\$3,443	3.5	\$3,564	3.5	\$3,690	(4.5)	\$3,523	\$3,622	6.8	\$3,870	4.9	\$4,075	6.9	\$4,337	\$7,065	5.2	\$7,434	4.2	\$7,747	1.5	\$7,860

NOTES:  
 (1) On January 2, 2011, a 3% E-ZPass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.  
 (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.  
 (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.  
 (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.  
 (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.  
 (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February, 2014, particularly among passenger cars.



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**Table 8**  
**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							
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16					
June	567	4.4	592 (3.0)	574 (2.1)	562	108	3.3	111	659	6.0	699 (2.5)	682 (1.2)	673	
July	601	2.3	615 (0.8)	610 (3.7)	588	101	13.6	113 (8.4)	104	703	3.9	730 (0.9)	723 (4.5)	691
August	612	3.1	631 (4.8)	601 (3.6)	579	106	5.8	112 (1.7)	110	718	3.5	743 (4.3)	711 (2.6)	693
September	564	1.1	570 (0.8)	565 (2.7)	550	100	13.8	114 (3.9)	109	664	3.0	684 (1.4)	675 (3.0)	654
October	595	(2.2)	582 (0.8)	577 (4.1)	553	108	5.2	114 2.5	117 (10.5)	703	(1.1)	696 (0.3)	694 (5.2)	658
November	534	(3.0)	518 2.1	529 (3.6)	509	91	(2.3)	89 10.1	98 (3.2)	95	625 (2.9)	607 3.2	627 (3.6)	605
December	541	(1.4)	533 1.2	539 (7.8)	497	84	6.6	90 3.8	93 (13.8)	80	625 (0.4)	622 1.5	632 (8.7)	577
January	458	0.5	460 (1.0)	455 (1.2)	450	85	(1.0)	84 (3.2)	82 (2.0)	543	0.3	544 (1.3)	537 (1.3)	530
February	439	(3.4)	424 5.2	446 (3.2)	432	88	(4.9)	79 3.1	81 (3.7)	521	(3.6)	503 4.9	527 (3.3)	510
March	523	0.1	523 (0.7)	519 (4.0)	499	94	6.1	99 (0.3)	99 (7.4)	617	1.0	623 (0.7)	619 (4.5)	591
April	551	(0.6)	548 (6.3)	513		100	0.9	101 0.7	102	651 (0.3)	649 (5.2)	616		
May	597	(3.4)	576 (5.1)	547		107	(3.9)	103 3.7	107	704 (3.4)	680 (3.8)	654		
Total Year	6,580	(0.1)	6,572 (1.5)	6,476		1,153	4.8	1,208 0.9	1,220	7,733	0.6	7,780 (1.1)	7,696	
Jun - Mar	5,433	0.3	5,448 (0.6)	5,416 (3.6)	5,220	945	6.2	1,004 0.7	1,010 (4.8)	6,378	1.1	6,451 (0.4)	6,426 (3.8)	6,182

Month	Passenger Cars			Commercial Vehicles			Total Vehicles								
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16						
June	\$640	11.4	\$713 1.3	\$723 4.2	\$753	\$273	18.9	\$325 3.7	\$337 9.4	\$914	13.6	\$1,038 2.1	\$1,060 5.8	\$1,121	
July	681	9.6	747 3.9	776 2.5	795	297	19.5	354 1.1	358 (5.3)	339	978	12.6	1,101 3.0	1,134 0.0	1,135
August	688	11.1	764 (0.7)	759 1.2	769	314	5.7	332 2.6	341 10.1	375	1,003	9.4	1,097 0.3	1,100 4.0	1,144
September	631	7.8	680 3.9	707 2.8	727	298	15.2	343 0.6	346 (0.4)	344	929	10.2	1,024 2.8	1,052 1.8	1,071
October	662	4.2	690 4.3	719 1.4	729	324	4.1	337 10.7	373 (8.8)	340	986	4.2	1,027 6.4	1,092 (2.1)	1,070
November	595	3.5	616 7.1	659 1.2	668	273	(1.1)	270 16.1	314 (0.6)	312	868	2.1	886 9.9	973 0.7	980
December	604	5.1	635 6.1	673 (3.2)	652	256	8.8	278 7.4	299 (11.3)	265	860	6.2	913 6.5	972 (5.7)	917
January	536	5.6	566 4.5	592 2.8	608	271	1.5	275 1.1	278 1.0	281	807	4.2	841 3.4	870 2.2	889
February	519	0.4	521 11.3	580 2.2	593	262	(2.6)	255 9.0	278 (1.3)	274	781	(0.6)	776 10.5	858 1.1	867
March	623	4.4	650 4.6	680 1.1	687	299	9.6	328 3.5	339 (4.5)	324	922	6.1	978 4.2	1,019 (0.8)	1,011
April	657	3.8	682 (1.1)	674		314	0.9	317 7.3	341	971	2.9	999 1.6	1,015		
May	717	1.1	725 (0.0)	724		325	(1.3)	321 11.8	359	1,042	0.4	1,045 3.6	1,083		
Total Year	\$7,553	5.8	\$7,989 3.5	\$8,268		\$3,506	6.6	\$3,736 6.0	\$3,961	\$11,058	6.0	\$11,724 4.3	\$12,229		
Jun - Mar	\$6,179	6.5	\$6,583 4.3	\$6,869 1.6	\$6,981	\$2,867	8.1	\$3,097 5.3	\$3,262 (1.2)	\$3,223	\$9,046	7.0	\$9,680 4.7	\$10,131 0.7	\$10,205

**NOTES:**

- (1) On January 2, 2011, a 3% E-ZPass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.
- (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.
- (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.
- (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.
- (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.
- (8) Leap Year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.
- (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February 2014, particularly among passenger cars.



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**Table 9**  
**Turnpike I-576 - Southern Beltway - Findlay Connector - Monthly Transaction and Revenue Trends**  
 Transactions Include Only Toll Transactions - Non-Revenue Transactions Are Not Included

Month	Passenger Cars			Commercial Vehicles			Total Vehicles														
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16												
June	140	4.4	146	6.2	155	(2.9)	151	14	9.8	15	35.1	20	(6.2)	19	154	4.9	161	8.9	175	(3.3)	170
July	146	5.9	154	5.6	163	(0.5)	162	13	34.4	18	8.0	19	(5.6)	18	159	8.3	172	5.8	182	(1.1)	180
August	150	6.6	159	(0.7)	158	5.9	168	14	30.8	18	11.9	20	(0.3)	20	164	8.6	178	0.6	179	5.2	188
September	134	8.7	145	0.9	147	2.6	151	14	26.9	17	23.7	21	(15.0)	18	147	10.4	163	3.3	168	0.4	169
October	140	8.9	153	0.5	154	0.4	154	15	21.3	18	26.1	23	2.2	24	155	10.1	171	3.2	177	0.6	178
November	125	5.8	133	6.1	141	4.7	147	15	(6.9)	14	47.2	21	(7.2)	19	140	4.5	146	10.0	161	3.2	166
December	128	9.8	140	2.1	143	(0.8)	142	12	23.3	15	33.6	20	(4.1)	19	140	10.9	155	5.1	163	(1.2)	161
January	119	4.6	124	(0.2)	124	5.8	131	11	19.7	13	23.5	16	21.8	20	130	5.8	137	2.1	140	7.7	151
February	110	4.9	115	6.3	122	1.8	124	13	22.9	13	17.1	15	(1.0)	15	120	6.5	128	7.4	137	1.5	139
March	129	6.8	138	3.5	143	2.3	146	13	26.9	16	6.8	17	2.4	18	142	8.6	154	3.8	160	2.3	164
April	135	5.8	143	(3.7)	138			14	24.0	18	(5.0)	17			150	7.5	161	(3.9)	155		
May	146	4.5	152	(3.2)	147			14	51.2	21	(0.6)	21			159	8.6	173	(2.9)	168		
Total Year	1,601	6.4	1,703	1.8	1,735			159	23.5	197	17.7	231			1,760	8.0	1,900	3.5	1,966		
Jun - Mar	1,320	6.7	1,408	3.0	1,449	1.8	1,476	131	20.5	158	22.6	194	(1.9)	190	1,451	7.9	1,566	4.9	1,643	1.4	1,666

Month	Passenger Cars			Commercial Vehicles			Total Vehicles														
	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16	2013-14	% Chg. 2014-15	% Chg. 2015-16												
June	\$100	3.5	\$103	5.8	\$109	(3.2)	\$105	\$28	12.4	\$32	43.8	\$46	(9.0)	\$41	\$128	5.4	\$135	14.7	\$154	(4.9)	\$147
July	104	5.1	109	(1.3)	114	(0.8)	113	28	29.4	37	18.1	43	(8.7)	40	132	10.3	146	8.4	158	(3.0)	153
August	106	5.9	113	(1.3)	111	5.5	117	29	29.0	37	20.8	45	(1.9)	44	135	10.9	150	4.2	156	3.4	162
September	95	8.1	102	0.5	103	2.1	105	28	26.8	36	30.8	47	(14.8)	40	123	12.4	138	8.4	150	(3.2)	145
October	99	8.5	107	(0.1)	107	(0.1)	107	32	18.5	38	29.6	49	(0.1)	49	131	10.9	145	7.7	157	(0.1)	156
November	89	5.1	93	5.6	98	4.2	102	31	(4.7)	30	48.1	44	(4.4)	42	120	2.6	123	15.9	142	1.5	144
December	80	8.9	98	1.6	100	(1.6)	98	26	24.2	33	33.7	44	0.6	44	117	12.3	131	9.6	144	(0.9)	142
January	84	4.0	87	(0.9)	86	5.2	91	25	17.0	29	26.8	37	26.2	46	108	7.0	116	6.0	123	11.5	137
February	77	4.3	80	5.7	85	1.3	86	24	19.1	29	23.1	35	(3.3)	34	101	7.8	109	10.3	120	(0.1)	120
March	91	6.3	97	2.8	99	1.6	101	28	26.4	36	11.7	40	2.1	41	119	11.1	132	5.2	139	1.7	142
April	95	5.2	100	(4.2)	96			31	20.8	38	0.8	38		41	127	9.1	138	(2.8)	134		
May	103	4.0	107	(3.8)	103			30	55.1	46	(2.3)	45			132	15.5	153	(3.4)	148		
Total Year	\$1,131	5.8	\$1,196	1.3	\$1,212			\$341	22.8	\$419	22.4	\$513			\$1,473	9.7	\$1,615	6.7	\$1,725		
Jun - Mar	\$933	6.0	\$989	2.4	\$1,013	1.3	\$1,026	\$280	19.6	\$335	28.2	\$430	(1.9)	\$422	\$1,214	9.1	\$1,325	8.9	\$1,443	0.4	\$1,448

**NOTES:**  
 (1) On January 2, 2011, a 3% E-ZPass and a 10% cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (2) On January 1, 2012, cash tolls were increased by 10% on all toll facilities except the Findlay Connector.  
 (3) On January 6, 2013 a 2% E-Zpass and a 10% cash toll increase was implemented on all toll facilities.  
 (4) On January 1, 2014 a 2% E-Zpass and a 12% cash toll increase was implemented on all toll facilities.  
 (5) On January 4, 2015, a 5% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (6) On January 3, 2016, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576.  
 (7) On January 8, 2017, a 6% E-Zpass and cash toll increase was implemented on all toll facilities except Turnpike I-576 and Delaware River Bridge.  
 (8) Leap year occurred in 2016, resulting in negative traffic and toll revenue impacts in February 2017 compared to February 2016.  
 (9) Abnormally severe winter weather negatively impacted traffic and toll revenue in January and February, 2014, particularly among passenger cars.

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**Table 10**  
**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		
	2015-16	% Chg	2016-17	2015-16	% Chg	2016-17	2015-16	% Chg	2016-17
June			606			103			709
July			647			97			744
August			657			103			760
September			573			99			672
October			583			97			680
November			570			98			668
December			555			96			651
January	434	(24.1)	330	81	(26.6)	59	515	(24.5)	389
February	463	(100.0)	0	84	(100.0)	0	547	(100.0)	0
March	531	(39.8)	320	95	(34.1)	63	627	(39.0)	383
April	541			95			636		
May	588			97			685		
Total Year	2,558			452			3,009		
Jun - Mar			4,841			814			5,655

Month	Passenger Cars			Commercial Vehicles			Total Vehicles		
	2015-16	% Chg	2016-17	2015-16	% Chg	2016-17	2015-16	% Chg	2016-17
June			\$2,804			\$1,816			\$4,620
July			2,983			1,698			4,682
August			3,043			1,813			4,856
September			2,659			1,740			4,399
October			2,714			1,719			4,433
November			2,665			1,727			4,392
December			2,595			1,710			4,304
January	2,013	(23.4)	1,542	1,433	(26.2)	1,058	3,446	(24.5)	2,601
February	2,145	(100.0)	0	1,495	(100.0)	0	3,640	(100.0)	0
March	2,465	(39.0)	1,503	1,696	(34.0)	1,119	4,161	(37.0)	2,622
April	2,508			1,691			4,199		
May	2,725			1,704			4,429		
Total Year	\$11,855			\$8,019			\$19,874		
Jun - Mar			\$22,509			\$14,400			\$36,909

NOTES:

- (1) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (2) Tolloed revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions.

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compared to the same time period in the prior year. These increases in toll revenue were largely due to annual toll increases. Year-to-date toll total transactions grew by 0.5 percent, 1.5 percent, and 0.7 percent for passenger cars, commercial vehicles, and for the total System, respectively.

It should be noted that the Delaware River Bridge (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 has negatively impacted the year-to-date 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. Thus, absent the DRB closure, the total FY 2016-17 year-to-date Turnpike traffic would have increased by 1.8 percent (instead of 0.7 percent) compared to the same time period in the previous year. Total toll revenue would have increased by 10.0 percent (instead of 8.6 percent) compared to the same time period in the previous year.

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 1.2 percent compared to the same period in the prior year. Passenger car transactions decreased by 1.4 percent during this period. Commercial vehicle activity has been more stable during this period, with traffic dropping only 0.1 percent compared to the previous ten-month period. Total revenue for the Ticket System grew by 7.9 percent in FY 2014-15 and by 8.8 percent in FY 2015-16. Year-to-date FY 2016-17 revenue has grown by 5.9 percent compared to the same time frame in the previous year. The above mentioned DRB closure would also have negatively affected Ticket System traffic and revenue in January, February, and March 2017.

Similar traffic and toll revenue trends for each of the five individual barrier toll systems are provided in Tables 5 through 10. Together, these represent only about 10 percent of total System-wide toll revenue. There is somewhat more variability in monthly and annual growth rates on the barrier facilities.

The effects of ramp-up, inclement weather, alternative routes, and new developments have a more significant impact on these relatively low volume roads. Traffic growth has been negative on all of these barrier facilities thus far in FY 2016-17, with the exception of Turnpike I-576 (Findlay Connector). Revenue growth, however, has been slightly positive on all of the barrier facilities due to the impact of the annual toll increase.

As noted above, stand-alone DRB traffic and revenue is now being provided for the first time since its conversion to Cashless Tolling on January 3, 2016. The impact of its closure during a portion of January and March, and for all of February 2017 is clearly evident in Table 10. Upon re-opening to traffic on March 10, 2017, traffic volumes appear to have returned to normal levels.



PTC only provides total video transactions passing through the DRB tolling zone; CDM Smith then develops the estimated toll revenue generated from these transactions. CDM Smith is currently analyzing the portion of video transactions for which revenue is actually recovered. Toll revenue leakage occurs among video transactions due to unreadable plates, lack of up-to-date Department of Motor Vehicle address information, non-payment of invoices, etc.

This plaza has been operational for just over one year so the full process of identifying video transactions and completing the invoicing cycles is still in the early stages. In addition, Pennsylvania's governor signed Act 165 on November 4, 2016, which goes into effect on August 4, 2017. Act 165 provides for more aggressive toll violation enforcement. Early estimates are that between 40 and 50 percent of DRB video revenue is not collected. For purposes of conservatism, CDM Smith has assumed a 50 percent video revenue leakage rate thus far (as well as for the forecast period). As legislation improves and PTC forms reciprocity agreements with other states, actual video revenue leakage rates will likely be less than that assumed in this analysis.

The actual portion of DRB revenue at risk of not being collected is relatively small given that about 80 percent of total toll transactions at this location are via E-ZPass. Thus, only about 20 percent of transactions would be at risk for revenue leakage. In total, only about \$6.5 million was estimated to be lost at DRB in calendar year 2016 due to video revenue leakage, which amounts to about 0.5 percent of total System toll revenue. Presumably, some, if not all, of this revenue loss would be made up in fines and other fees that would be assessed to video customers who do not promptly pay their invoice. Such fee/fine revenue is not included in CDM Smith's forecast.

### **Actual and Assumed Toll Rate Increases**

At the direction of the PTC, 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 first Sunday after January 1 of each year. The assumptions regarding the planned toll rate increases have not changed since the 2016 Bring Down Letter except for the Delaware River Bridge. The DRB toll was not increased in 2017 and it is assumed to stay at the same level in 2018. Table 11 presents a summary of the annual percent increases in toll rates for E-ZPass and cash from calendar year 2016 through 2045.

The percent increases in toll rates in Table 11 are actual through 2017. In 2017, PTC increased E-ZPass and cash tolls by 6.0 percent (except on Turnpike 576 and Delaware River Bridge, which did not experience a toll increase). Beginning in 2019, DRB toll rates will increase at the same rate as the rest of the System. As noted at the bottom of Table 11, Turnpike I-576 tolls are assumed to increase every five years; the next scheduled increase is in 2018.

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**Table 11**  
**Actual and Assumed Percent Changes in Toll Rates**  
 Pennsylvania Turnpike System

Calendar Year	Percent Changes in Turnpike System's Toll Rates <sup>(1)</sup>	
	2017 Draw Down	
	E-ZPass	Cash
2016	6.00	6.00
2017	6.00	6.00
2018	6.00	6.00
2019	6.00	6.00
2020	6.00	6.00
2021	5.00	5.00
2022	5.00	5.00
2023	5.00	5.00
2024	5.00	5.00
2025	5.00	5.00
2026	4.00	4.00
2027	3.50	3.50
2028	3.00	3.00
2029	3.00	3.00
2030	3.00	3.00
2031	3.00	3.00
2032	3.00	3.00
2033	3.00	3.00
2034	3.00	3.00
2035	3.00	3.00
2036	3.00	3.00
2037	3.00	3.00
2038	3.00	3.00
2039	3.00	3.00
2040	3.00	3.00
2041	3.00	3.00
2042	3.00	3.00
2043	3.00	3.00
2044	3.00	3.00
2045	3.00	3.00

(1) Toll rate increases are the same for all facilities and vehicle classes except: Turnpike I-576 had no toll increase in 2016 or 2017. Delaware River Bridge was exempt from toll increases in 2017 and will be in 2018 also.

Note:

The toll rate increases for this 2017 Bring Down Letter are actual through 2017. For Turnpike I-576, toll rates are assumed to increase every fifth year. The next increase is scheduled for 2018. Refer to Table 4-3 on Page 4-6 of the 2015 Forecast Study for additional details.

### **Actual and Assumed E-ZPass Penetration Rates**

Table 12 presents the actual and assumed annual E-ZPass penetration rates from calendar year 2016 through 2045. The first three columns show the E-ZPass market share assumptions for the current 2017 Bring Down Letter. These were increased slightly, by the amount shown in the three rightmost columns, over assumptions used in the 2016 Bring Down Letter. Actual experience over the last 12 months has shown that the E-ZPass market share has increased at a slightly higher rate than assumed in the last study. The overall impact of increasing the assumed future year E-ZPass market share is a slight reduction in future year toll revenue. This is due to the lower average toll rate assessed to E-ZPass transactions.

The revised E-ZPass penetration rates range from 0.1 percent higher to 3.3 percent higher than those in the 2016 Bring Down Letter. The upward adjustment to the commercial vehicle rates is gradually reduced until the adjustment is reduced to zero in 2030. This occurs because a maximum cap of 95 percent E-ZPass market share is assumed for trucks and this level was achieved for commercial vehicles in the 2016 Bring Down Letter in 2030 (thus no additional upward adjust was possible beyond that date in the current study). A 90 percent E-ZPass market share cap was assumed for cars, but this level is not reached within the forecast period. By 2045, E-ZPass market share on the Turnpike System is estimated to reach 89.6 percent for cars, 95.0 percent for trucks, and 90.4 percent overall.

**Table 12**  
**Actual and Assumed Percent E-ZPass Penetration**  
**Pennsylvania Turnpike System**

Calendar Year	E-ZPass Penetration Rates					
	2017 Bring Down Letter			Difference from 2016 Bring Down Letter		
	Cars	Trucks	Total	Cars	Trucks	Total
2016	76.2	89.2	78.0	0.9	0.1	0.8
2017	77.8	90.6	79.6	1.5	0.7	1.4
2018	79.3	91.9	81.1	2.1	1.3	2.0
2019	80.6	92.8	82.3	2.7	1.7	2.5
2020	81.6	93.6	83.3	3.2	2.0	3.0
2021	82.3	94.1	83.9	3.3	2.0	3.1
2022	82.9	94.5	84.5	3.3	1.9	3.1
2023	83.4	94.7	85.0	3.3	1.7	3.1
2024	83.9	94.9	85.5	3.3	1.4	3.0
2025	84.4	94.9	85.9	3.3	1.0	3.0
2026	84.8	94.9	86.3	3.3	0.7	2.9
2027	85.3	95.0	86.7	3.3	0.4	2.9
2028	85.7	95.0	87.0	3.3	0.2	2.8
2029	86.1	95.0	87.4	3.3	0.1	2.8
2030	86.6	95.0	87.8	3.3	0.0	2.8
2031	86.9	95.0	88.1	3.3	0.0	2.8
2032	87.3	95.0	88.4	3.3	0.0	2.8
2033	87.6	95.0	88.7	3.3	0.0	2.8
2034	87.9	95.0	89.0	3.2	0.0	2.8
2035	88.2	95.0	89.2	3.2	0.0	2.7
2036	88.5	95.0	89.4	3.1	0.0	2.6
2037	88.7	95.0	89.6	3.0	0.0	2.5
2038	88.9	95.0	89.8	2.9	0.0	2.4
2039	89.0	95.0	89.9	2.7	0.0	2.3
2040	89.2	95.0	90.1	2.6	0.0	2.2
2041	89.3	95.0	90.2	2.4	0.0	2.1
2042	89.4	95.0	90.2	2.3	0.0	2.0
2043	89.4	95.0	90.3	2.2	0.0	1.8
2044	89.5	95.0	90.4	2.1	0.0	1.7
2045	89.6	95.0	90.4			

Note: The E-ZPass penetration rates for this 2017 Bring Down Letter are actual through 2016 and were actual only through 2015 for the 2016 Bring Down Letter.

## **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 Gross State Product (GSP) information available for the 2016 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.

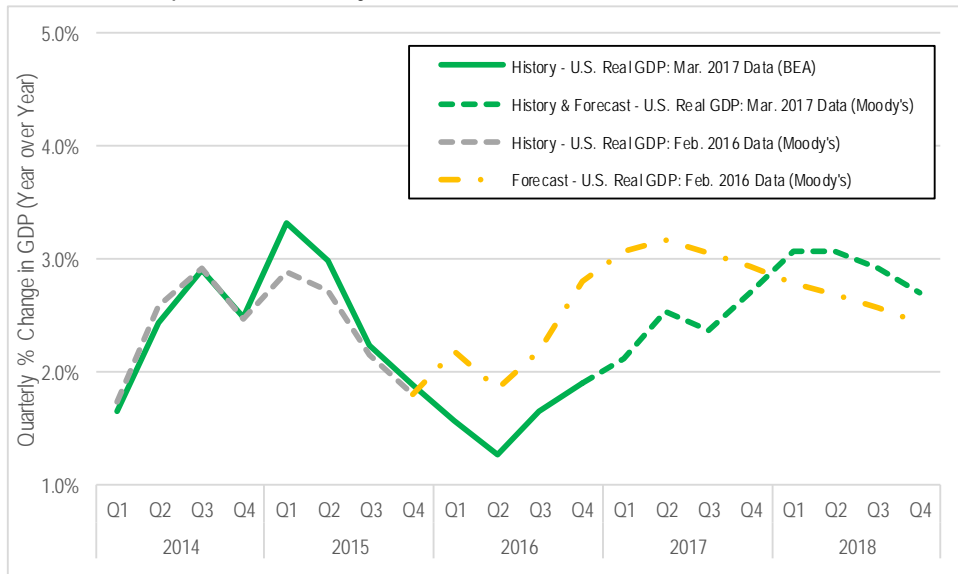
Figure 3 shows actual and estimated GDP at the time of the 2016 Bring Down Letter as well as the revised figures based on updated Moody's Analytic's forecasts as of March 2017. As shown, actual experience in 2016 underperformed prior estimates by between about 0.5 to 0.9 percent (though GDP growth remained positive throughout the period). The revised GDP growth estimates in 2017 shows a lower growth than the prior forecast. Beginning in the first quarter of 2018, the revised GDP estimates surpasses the prior forecast.

Figure 4 shows GSP trend and forecast data for Pennsylvania. The GSP growth in 2015 exceeded the prior estimates by a range of 0.6 percent to 2.6 percent. The GSP growth estimates for 2016 are estimated to be lower than the previous estimates by a range of 2.1 to 3.4 percent. By the end of 2017, both forecasts align, and in 2018, the March 2017 GSP forecast surpasses the February 2016 forecast for all four quarters.

Based on this information alone it would be assumed that actual traffic growth in 2016 would have underperformed CDM Smith's 2016 Forecast Study estimates. As will be discussed below, that was not the case across all the facilities. In fact, actual traffic and toll revenue on the total System slightly outperformed CDM Smith's estimates. This is likely due to other factors, namely motor fuel prices and consumer confidence, which are discussed in the next section.

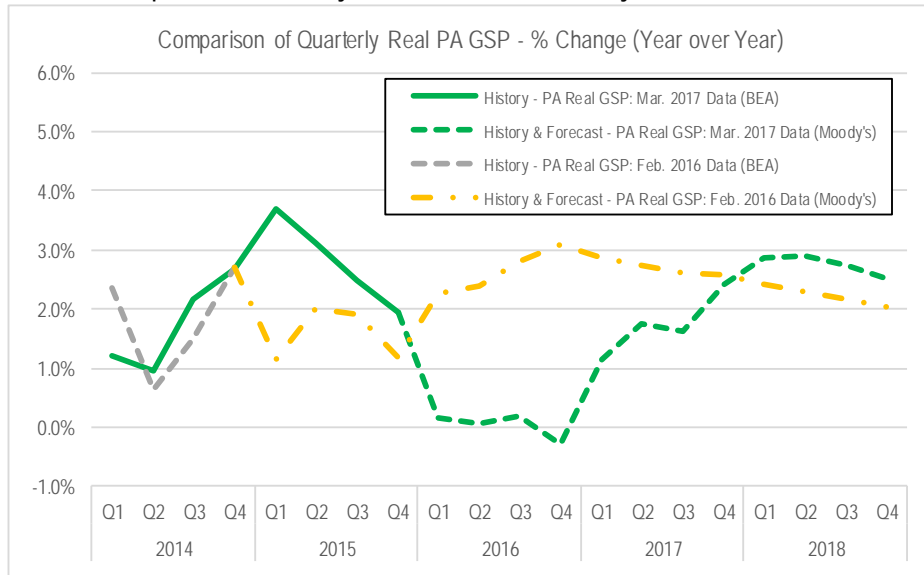
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**Figure 3**  
 Comparison of Quarterly Growth Estimates in U.S. Gross Domestic Product



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (Feb. 2016, and Mar. 2017 Releases)

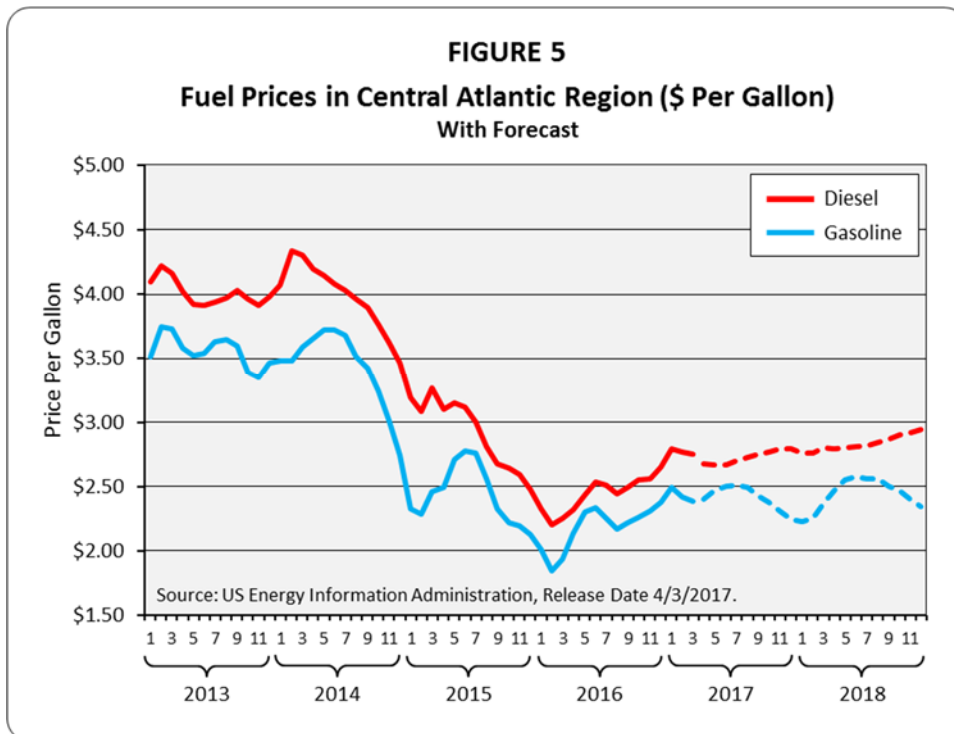
**Figure 4**  
 Comparison of Quarterly Growth Estimates in Pennsylvania Gross State Product



Sources: Historical estimates are from the BEA, and the forecasts are from Moody's Analytics (Feb. 2016, and Mar. 2017 Releases)

### Summary of Trends in Fuel Prices

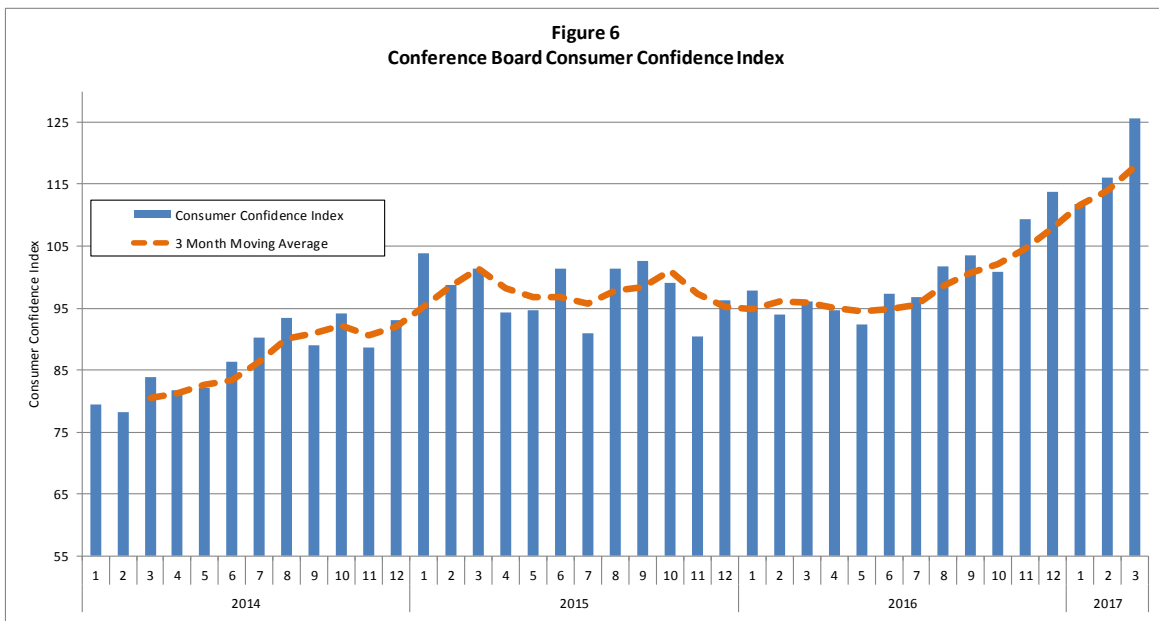
Figure 5 includes gasoline and diesel prices for the Central Atlantic Region from January 2013 through March 2017. As shown, gasoline and diesel prices have followed generally similar trends throughout this period. From January 2013 through September 2014, both gasoline and diesel prices fluctuated within a relatively narrow range. Beginning around October 2014, however, motor fuel prices began a noticeable decline. Fuel prices reached a low in the first quarter of 2016, and have risen slowly since then. Gasoline averaged \$2.38 per gallon in March 2017. Diesel prices have also risen slightly year over year, averaging \$2.75 in March 2017. Based on current forecasts from the U.S. Energy Information Administration, near term price forecasts are expected to remain low. This should prove positive to current trends in passenger car and commercial vehicle traffic growth on the Pennsylvania Turnpike. The decline in motor fuel prices effectively decreased the negative impact (i.e., diversion) from toll increases and lower than estimated economic growth. The continued low level of fuel prices should provide the PTC with positive benefits into the near future.



### Consumer Confidence

Figure 6 shows the Conference Board Consumer Confidence Index for the period between January 2014 and March 2017. 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 has trended up over the period shown. The average exceeded 85 in 2014, and was about 98 in 2015 and 2016. Consumer Confidence Index has been showing a steady upward trend beginning in the second half of 2016. By the end of 2016, consumer confidence rose to pre-recession levels for the first time since the 2008 recession. In the most recent month of March, 2017, the consumer confidence index rose above 125 for the first time since 2000.

Consumer confidence is an important measure in that it highlights consumer’s confidence in making purchases, their willingness to travel more, etc. Thus, we can infer that higher consumer confidence spurs demand for various goods and services and that higher demand results in higher traffic on the roadways.



Source: The Conference Board - Consumer Confidence Index®.



### **Actual Versus Estimated Traffic and Toll Revenue**

Table 13 provides a comparison of actual traffic and toll revenue versus estimated traffic and toll revenue from CDM Smith's 2016 Bring Down Letter. The analysis period in this table is from February 2016 through March 2017. This fourteen-month period corresponds to the period for which actual data currently exists, but was estimated at the time of the 2016 Bring Down Letter.

On a system level, estimated traffic and toll revenue tracked favorably compared to forecasts. Systemwide, actual passenger car transactions surpassed estimates by 1.2 percent, and passenger-car toll revenue exceeded estimates by 2.0 percent. Commercial vehicle transactions exceeded estimates by 1.1 percent, and actual commercial vehicle toll revenue was 0.3 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 1.3 percent.

The same information is provided in Table 13 for each of the Turnpike toll facilities. Actual versus estimated traffic and toll revenue for the Ticket System tracks slightly higher than that of the total System. Actual traffic and toll revenue for ticket system would have been even higher absence of negative impact of the DRB closure in January through March 2017.

All barrier facilities underperformed when compared to the 2016 CDM Smith Bring Down Letter forecasts. Barrier System toll revenue was lower than CDM Smith estimates by between 3.2 percent (Turnpike I-576) and 6.4 percent (Turnpike 43) for both passenger car and commercial revenue combined.

Despite actual tolled transaction and toll revenue values underperforming forecasted levels for all Barrier facilities, the total System remained positive overall. This occurs because the vast majority of traffic and revenue is generated by the Ticket System. The recent trends for all facilities was taken into account when adjusting the short term forecasts for this Bring Down Letter.

**Table 13**  
**Comparison of Estimated and Actual Traffic Volumes and Toll Revenue**  
**From February 2016 through March 2017 (1)**  
**Pennsylvania Turnpike System**

Facility	Total Traffic (in Thousands)			Total Toll Revenue (in Thousands)		
	Estimated <sup>(2)</sup>	Actual <sup>(3)</sup>	Actual as Percent of Estimated	Estimated <sup>(2)</sup>	Actual <sup>(3,4)</sup>	Actual as Percent of Estimated
Passenger Cars						
Ticket and Gateway Barrier		155,603			\$ 643,508	
Delaware River Bridge		6,965			32,351	
<b>Subtotal</b>	<b>158,651</b>	<b>162,568</b>	<b>2.5</b>	<b>659,530</b>	<b>675,859</b>	<b>2.5</b>
Turnpike 43	15,185	14,524	(4.4)	21,418	20,473	(4.4)
Turnpike 66	7,835	7,571	(3.4)	12,249	11,775	(3.9)
Northeast Extension (Barrier)	5,620	5,208	(7.3)	5,253	4,844	(7.8)
Turnpike I-376	7,491	7,246	(3.3)	9,923	9,640	(2.8)
Turnpike I-576	2,056	2,027	(1.4)	1,430	1,409	(1.5)
<b>Total System</b>	<b>196,838</b>	<b>199,144</b>	<b>1.2</b>	<b>\$ 709,802</b>	<b>\$ 724,000</b>	<b>2.0</b>
Commercial Vehicles						
Ticket and Gateway Barrier		25,630			\$ 507,835	
Delaware River Bridge		1,185			20,986	
<b>Subtotal</b>	<b>26,015</b>	<b>26,816</b>	<b>3.1</b>	<b>525,335</b>	<b>528,821</b>	<b>0.7</b>
Turnpike 43	1,356	1,134	(16.4)	5,351	4,587	(14.3)
Turnpike 66	1,252	1,167	(6.8)	5,650	5,124	(9.3)
Northeast Extension (Barrier)	1,288	1,265	(1.8)	6,079	6,013	(1.1)
Turnpike I-376	1,441	1,351	(6.2)	4,914	4,539	(7.6)
Turnpike I-576	286	260	(9.2)	624	580	(7.1)
<b>Total System</b>	<b>31,638</b>	<b>31,992</b>	<b>1.1</b>	<b>\$ 547,953</b>	<b>\$ 549,664</b>	<b>0.3</b>
Total Vehicles						
Ticket and Gateway Barrier		181,233			\$ 1,151,343	
Delaware River Bridge		8,150			53,337	
<b>Subtotal</b>	<b>184,665</b>	<b>189,383</b>	<b>2.6</b>	<b>1,184,865</b>	<b>1,204,680</b>	<b>1.7</b>
Turnpike 43	16,541	15,658	(5.3)	26,769	25,059	(6.4)
Turnpike 66	9,087	8,738	(3.8)	17,899	16,899	(5.6)
Northeast Extension (Barrier)	6,908	6,473	(6.3)	11,332	10,857	(4.2)
Turnpike I-376	8,932	8,597	(3.8)	14,837	14,180	(4.4)
Turnpike I-576	2,342	2,287	(2.4)	2,054	1,989	(3.2)
<b>Total System</b>	<b>228,476</b>	<b>231,136</b>	<b>1.2</b>	<b>\$ 1,257,755</b>	<b>\$ 1,273,664</b>	<b>1.3</b>

(1) These 14 months correspond to the period for which actual data exists, but was estimated at the time of CDM Smith's March 2016 Bring Down Letter.

(2) Estimates for Ticket System include Delaware River Bridge traffic and revenue.

(3) Actuals reflect Delaware River Bridge closure due to structural integrity concerns from January 20, 2017 to March 9, 2017.

(4) Actual tolled revenue assumes a 50% leakage rate for video transactions for Delaware River Bridge.

## **Estimated Traffic and Gross Toll Revenue**

Updated traffic and gross toll revenue impacts were developed through FY 2044-45 incorporating the following changes into the forecast. All these changes were described in previous sections.

- Actual traffic and revenue experience through March 2017;
- Slightly adjusted short term (through 2019) growth forecasts based on recent the experience of actual traffic and revenue compared to assumptions in the 2016 Bring Down Letter and continued low motor fuel prices ;
- Higher E-ZPass penetration rates;
- Delaware River Bridge facility is treated as a standalone barrier facility. It was reported as a part of Ticket System in the 2016 Bring Down Letter; and
- No toll increases assumed at Delaware River Bridge location for 2017 and 2018.

Other assumptions remain unchanged from the 2016 Bring Down Letter including:

- Long range normal growth rates from 2020 through the end of the forecast period;
- Annual Systemwide toll rate increases;
- Structure of the commercial vehicle discount program; and
- Long range economic indicators.

Table 14 shows the total traffic and toll revenue for the Ticket System only. Data for FY 2015-16 reflects a full year of actual experience and FY 2016-17 includes ten months of actual experience (through March 2017). Total toll transactions increase from 158.5 million to 222.0 million over the forecast period, an average annual increase of 1.2 percent. Gross toll revenue increases from \$954.9 million to \$3.9 billion by FY 2044-45. This amounts to an average annual increase of 5.0 percent, reflecting the impact of normal growth plus the annual rate adjustments.

The same information is shown for the Barrier Systems in Table 15. Total annual toll transactions are estimated to grow from 40.4 million to 65.6 million over the forecast period, an average rate of 1.7 percent. Barrier System total revenue is estimated to increase from \$79.2 million to \$451.6 million over the forecast period, an annual rate of 6.2 percent. It should be noted that the addition of the DRB traffic and toll revenue to the Barrier System subtotals, beginning in January 2016, adds slightly to the growth rates shown (and slightly reduces traffic and revenue on the Ticket System).

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Table 16 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 16 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 2016-17 and beyond that equals approximately 0.8 percent of the commercial vehicle gross toll revenue.

As shown in Table 16, total toll transactions are expected to increase from nearly 198.9 million to 287.5 million over the forecast period. This amounts to an average annual growth rate of 1.3 percent. Total adjusted gross toll revenue is estimated to grow from approximately \$1.0 billion in FY 2015-16 to \$4.3 billion by FY 2044-45. This reflects an average annual growth rate in gross toll revenue of 5.1 percent. Again, this includes the impact of normal growth plus annual toll rate adjustments.

Table 17 provides a comparison of the current traffic and adjusted gross toll revenue forecast with the forecast developed as part of the 2016 Bring Down Letter. As shown, the current toll transaction forecasts are slightly higher than the previous forecasts, while current toll revenue forecasts are just slightly below those for the previous forecast beginning FY 2018-19. Current toll transactions are slightly higher than previous forecasts largely due to actual experience since the last forecast. As shown in Table 13, actual toll transaction experience exceeded CDM Smith estimates by just over 1.0 percent. That, and the fact that we reduced Barrier System growth rates, accounts for the relationship between current and previous transaction forecasts.

Current toll revenue forecasts are just slightly lower than those estimated as part of the 2016 Bring Down Letter. This occurs for two reasons. First, in the 2016 Bring Down Letter it was assumed that there would be a toll increase on DRB in 2017 and 2018. In fact, DRB toll rates will remain unchanged from 2016 levels until 2019. Secondly, the previously discussed increased assumptions in future E-ZPass market share for the current analysis also contribute to slightly lower future revenue. This is due to the toll discount afforded to E-ZPass transactions.

**Table 14**  
**Ticket System: Estimated Annual Transactions and Gross Toll Revenue (1)**  
 Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year (7)	Annual Transactions			Annual Gross Toll Revenue		
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Revenue
2015-16 (2,4,6)	136,294	22,172	158,466	\$537,063	\$417,839	\$954,901
2016-17 (3,5,8)	135,383	22,259	157,643	570,746	444,025	1,014,771
2017-18	139,088	23,074	162,162	608,614	481,836	1,090,451
2018-19 (9)	142,983	23,839	166,822	648,957	518,944	1,167,901
2019-20	144,699	24,256	168,955	688,933	556,658	1,245,592
2020-21	146,435	24,681	171,116	730,943	595,550	1,326,493
2021-22	148,192	25,108	173,300	773,362	634,481	1,407,843
2022-23	149,971	25,535	175,505	818,522	676,400	1,494,922
2023-24	151,770	25,969	177,739	866,825	721,544	1,588,369
2024-25	153,592	26,405	179,997	917,931	769,912	1,687,843
2025-26	155,435	26,841	182,275	968,440	818,321	1,786,761
2026-27	157,300	27,284	184,584	1,013,804	863,364	1,877,168
2027-28	159,188	27,728	186,916	1,056,133	906,319	1,962,452
2028-29	161,098	28,172	189,270	1,096,875	948,445	2,045,320
2029-30	162,968	28,623	191,590	1,138,697	992,529	2,131,226
2030-31	164,696	29,075	193,771	1,181,391	1,038,450	2,219,841
2031-32	166,343	29,526	195,868	1,225,728	1,086,182	2,311,910
2032-33	168,006	29,983	197,990	1,271,678	1,136,109	2,407,787
2033-34	169,686	30,448	200,134	1,319,305	1,188,330	2,507,635
2034-35	171,383	30,914	202,297	1,369,241	1,242,698	2,611,939
2035-36	173,097	31,378	204,475	1,421,275	1,299,179	2,720,454
2036-37	174,692	31,848	206,540	1,474,863	1,358,226	2,833,089
2037-38	176,089	32,326	208,415	1,528,875	1,419,958	2,948,833
2038-39	177,498	32,811	210,309	1,585,285	1,484,495	3,069,780
2039-40	178,918	33,296	212,214	1,644,284	1,551,649	3,195,933
2040-41	180,349	33,779	214,129	1,705,921	1,621,372	3,327,294
2041-42	181,792	34,269	216,061	1,770,724	1,694,229	3,464,952
2042-43	183,246	34,766	218,012	1,838,345	1,770,359	3,608,704
2043-44	184,712	35,270	219,982	1,908,565	1,849,910	3,758,475
2044-45	186,190	35,781	221,972	1,981,458	1,933,036	3,914,494

- (1) Includes the transactions and toll revenue from the Gateway Plaza.
- (2) Reflects actual traffic and revenue experience.
- (3) Reflects actual experience through March 2017.
- (4) Cash and E-ZPass tolls increased by 6% on January 3, 2016, except for Turnpike I-576.
- (5) Cash and E-ZPass tolls increased by 6% on January 8, 2017, except for Turnpike I-576 and Delaware River Bridge.
- (6) Reflects removal of Delaware River Bridge from the Ticket System beginning January 3, 2016.
- (7) Annual toll rate increases are assumed to be implemented on the first Sunday after January 1st of each year.  
 The percent increases are the same for cars and trucks, and for E-ZPass and cash. The percent increases range from 3.0% to 6.0%, depending upon the year. The rates for each year are listed in Table 10.
- (8) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (9) Includes impacts for I-95 Interchange Stage 1.

**Table 15**  
**Barrier System: Estimated Annual Transactions and Gross Toll Revenue**  
 Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year (7)	Annual Transactions			Annual Gross Toll Revenue (1)		
	Passenger	Commercial	Total	Passenger	Commercial	Total
	Cars	Vehicles	Vehicles	Cars	Vehicles	Revenue
2015-16 (2,4,6)	35,271	5,147	40,418	\$53,166	\$26,063	\$79,230
2016-17 (3,5,8)	37,675	5,497	43,171	69,988	36,090	106,078
2017-18	38,678	5,705	44,383	77,044	40,306	117,351
2018-19	38,929	5,780	44,709	81,157	42,689	123,847
2019-20	39,413	5,891	45,304	86,841	46,070	132,911
2020-21	40,051	6,028	46,079	92,817	49,619	142,436
2021-22	40,697	6,164	46,861	98,623	53,118	151,740
2022-23	41,343	6,302	47,645	104,998	56,927	161,926
2023-24	41,995	6,441	48,436	111,894	61,044	172,938
2024-25	42,652	6,582	49,235	118,892	65,297	184,189
2025-26	43,310	6,724	50,034	125,879	69,558	195,437
2026-27	43,970	6,866	50,836	132,315	73,531	205,846
2027-28	44,635	7,009	51,644	138,639	77,441	216,080
2028-29	45,306	7,155	52,461	144,944	81,365	226,308
2029-30	45,976	7,302	53,278	151,146	85,335	236,481
2030-31	46,633	7,450	54,084	157,509	89,485	246,993
2031-32	47,282	7,599	54,881	164,078	93,811	257,889
2032-33	47,937	7,749	55,686	171,126	98,414	269,540
2033-34	48,595	7,901	56,496	178,543	103,285	281,829
2034-35	49,261	8,055	57,316	185,975	108,239	294,215
2035-36	49,927	8,208	58,135	193,717	113,392	307,109
2036-37	50,574	8,362	58,936	201,699	118,768	320,467
2037-38	51,217	8,517	59,735	210,169	124,491	334,660
2038-39	51,865	8,676	60,541	219,104	130,545	349,650
2039-40	52,515	8,834	61,350	228,038	136,685	364,723
2040-41	53,175	8,992	62,167	237,356	143,061	380,417
2041-42	53,844	9,152	62,995	247,083	149,739	396,822
2042-43	54,522	9,315	63,837	257,493	156,849	414,342
2043-44	55,209	9,481	64,690	268,502	164,369	432,871
2044-45	55,906	9,651	65,557	279,557	172,041	451,598

- (1) Toll revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions.
- (2) Reflects actual traffic and revenue experience.
- (3) Reflects actual experience through March 2017.
- (4) Cash and E-ZPass tolls increased by 6% on January 3, 2016, except for Turnpike I-576.
- (5) Cash and E-ZPass tolls increased by 6% on January 8, 2017, except for Turnpike I-576 and Delaware River Bridge.
- (6) Reflects addition of Delaware River Bridge to the Barrier System beginning January 3, 2016.
- (7) Annual toll rate increases are assumed to be implemented on the first Sunday after January 1st of each year.  
 The percent increases are the same for cars and trucks, and for E-ZPass and cash. The percent increases range from 3.0% to 6.0%, depending upon the year. The rates for each year are listed in Table 10.
- (8) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.

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**Table 16**  
**Total System: Estimated Annual Transactions and Gross Toll Revenue**  
 Pennsylvania Turnpike

Traffic and Toll Revenue in Thousands

Fiscal Year (6)	Annual Transactions			Annual Gross Toll Revenue (1)			Discounts and Adjustments (9)	Adjusted Annual Gross Revenue
	Passenger Cars	Commercial Vehicles	Total Vehicles	Passenger Cars	Commercial Vehicles	Total Revenue		
2015-16 (2,4)	171,565	27,319	198,884	\$590,229	\$443,902	\$1,034,131	(1,504)	\$1,032,627
2016-17 (3,5,7)	173,058	27,756	200,814	640,734	480,115	1,120,848	(3,841)	1,117,007
2017-18	177,766	28,779	206,545	685,658	522,143	1,207,801	(4,177)	1,203,624
2018-19 (8)	181,912	29,619	211,531	730,114	561,633	1,291,747	(4,493)	1,287,254
2019-20	184,112	30,147	214,259	775,774	602,728	1,378,502	(4,822)	1,373,680
2020-21	186,487	30,709	217,195	823,760	645,169	1,468,929	(5,161)	1,463,768
2021-22	188,889	31,272	220,162	871,985	687,599	1,559,583	(5,501)	1,554,082
2022-23	191,314	31,837	223,150	923,520	733,328	1,656,847	(5,867)	1,650,980
2023-24	193,765	32,410	226,175	978,719	782,588	1,761,307	(6,261)	1,755,046
2024-25	196,244	32,987	229,231	1,036,823	835,209	1,872,032	(6,682)	1,865,350
2025-26	198,745	33,564	232,309	1,094,320	887,879	1,982,199	(7,103)	1,975,096
2026-27	201,270	34,149	235,419	1,146,119	936,895	2,083,014	(7,495)	2,075,519
2027-28	203,822	34,738	238,560	1,194,772	983,760	2,178,532	(7,870)	2,170,662
2028-29	206,404	35,327	241,731	1,241,819	1,029,810	2,271,629	(8,238)	2,263,391
2029-30	208,943	35,924	244,868	1,289,843	1,077,864	2,367,707	(8,623)	2,359,084
2030-31	211,329	36,525	247,854	1,338,900	1,127,935	2,466,834	(9,023)	2,457,811
2031-32	213,625	37,125	250,750	1,389,806	1,179,993	2,569,799	(9,440)	2,560,359
2032-33	215,943	37,732	253,676	1,442,804	1,234,523	2,677,327	(9,876)	2,667,451
2033-34	218,281	38,349	256,630	1,497,849	1,291,615	2,789,464	(10,333)	2,779,131
2034-35	220,645	38,969	259,613	1,555,216	1,350,938	2,906,154	(10,808)	2,895,346
2035-36	223,024	39,586	262,609	1,614,992	1,412,571	3,027,563	(11,301)	3,016,262
2036-37	225,266	40,210	265,476	1,676,562	1,476,994	3,153,556	(11,816)	3,141,740
2037-38	227,307	40,843	268,150	1,739,044	1,544,449	3,283,493	(12,356)	3,271,137
2038-39	229,363	41,487	270,850	1,804,389	1,615,040	3,419,429	(12,920)	3,406,509
2039-40	231,433	42,131	273,564	1,872,322	1,688,334	3,560,655	(13,507)	3,547,148
2040-41	233,524	42,771	276,295	1,943,277	1,764,434	3,707,711	(14,115)	3,693,596
2041-42	235,636	43,421	279,057	2,017,807	1,843,968	3,861,775	(14,752)	3,847,023
2042-43	237,768	44,081	281,849	2,095,839	1,927,207	4,023,046	(15,418)	4,007,628
2043-44	239,921	44,751	284,673	2,177,068	2,014,278	4,191,346	(16,114)	4,175,232
2044-45	242,096	45,432	287,528	2,261,015	2,105,077	4,366,092	(16,841)	4,349,251

- (1) Toll revenue for Delaware River Bridge assumes a 50% leakage rate for video transactions.
- (2) Reflects actual traffic and revenue experience.
- (3) Reflects actual experience through March 2017.
- (4) Cash and E-ZPass tolls increased by 6% on January 3, 2016, except for Turnpike I-576.
- (5) Cash and E-ZPass tolls increased by 6% on January 8, 2017, except for Turnpike I-576 and Delaware River Bridge.
- (6) Annual toll rate increases are assumed to be implemented on the first Sunday after January 1st of each year.  
 The percent increases are the same for cars and trucks, and for E-ZPass and cash. The percent increases range from 3.0% to 6.0%, depending upon the year. The rates for each year are listed in Table 10.
- (7) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.
- (8) Includes impacts for I-95 Interchange Stage 1.
- (9) No changes are assumed in the commercial volume discount program over the forecast period. The current program results in a 0.8% reduction in commercial vehicle gross toll revenue and is assumed to remain at this level throughout the forecast period.

**Table 17**  
**Comparison of New Traffic and Revenue**  
**Estimates with those from the 2016 Bring Down Letter**  
**Pennsylvania Turnpike**

Traffic and Toll Revenue in Thousands

Fiscal Year	Total Annual Transactions			Total Annual Adjusted Gross Toll Revenue		
	Current	2016 Bring Down	Percent	Current	2016 Bring Down	Percent
	Estimates	Letter	Difference	Estimates	Letter	Difference
2015-16	198,884	197,128	0.9	\$1,032,627	\$1,022,289	1.0
2016-17 (1,2)	200,814	199,656	0.6	1,117,007	1,112,611	0.4
2017-18 (2)	206,545	204,228	1.1	1,203,624	1,195,848	0.7
2018-19	211,531	209,665	0.9	1,287,254	1,287,891	(0.0)
2019-20	214,259	212,569	0.8	1,373,680	1,380,972	(0.5)
2020-21	217,195	215,502	0.8	1,463,768	1,475,606	(0.8)
2021-22	220,162	218,465	0.8	1,554,082	1,567,634	(0.9)
2022-23	223,150	221,450	0.8	1,650,980	1,665,475	(0.9)
2023-24	226,175	224,471	0.8	1,755,046	1,769,559	(0.8)
2024-25	229,231	227,523	0.8	1,865,350	1,879,504	(0.8)
2025-26	232,309	230,597	0.7	1,975,096	1,988,758	(0.7)
2026-27	235,419	233,701	0.7	2,075,519	2,088,604	(0.6)
2027-28	238,560	236,836	0.7	2,170,662	2,183,472	(0.6)
2028-29	241,731	240,000	0.7	2,263,391	2,276,275	(0.6)
2029-30	244,868	243,133	0.7	2,359,084	2,372,314	(0.6)
2030-31	247,854	246,119	0.7	2,457,811	2,471,927	(0.6)
2031-32	250,750	249,015	0.7	2,560,359	2,575,585	(0.6)
2032-33	253,676	251,941	0.7	2,667,451	2,683,889	(0.6)
2033-34	256,630	254,895	0.7	2,779,131	2,796,877	(0.6)
2034-35	259,613	257,878	0.7	2,895,346	2,913,858	(0.6)
2035-36	262,609	260,874	0.7	3,016,262	3,035,302	(0.6)
2036-37	265,476	263,742	0.7	3,141,740	3,160,567	(0.6)
2037-38	268,150	266,423	0.6	3,271,137	3,289,377	(0.6)
2038-39	270,850	269,130	0.6	3,406,509	3,423,635	(0.5)
2039-40	273,564	271,852	0.6	3,547,148	3,562,414	(0.4)
2040-41	276,295	274,590	0.6	3,693,596	3,707,223	(0.4)
2041-42	279,057	277,359	0.6	3,847,023	3,859,278	(0.3)
2042-43	281,849	280,160	0.6	4,007,628	4,018,021	(0.3)
2043-44	284,673	282,993	0.6	4,175,232	4,183,578	(0.2)
2044-45	287,528			4,349,251		

(1) The Delaware River Bridge was closed due to structural integrity concerns from January 20, 2017 to March 9, 2017.

(2) Toll rates at the Delaware River Bridge are not increased in 2017 and expected to stay at the current rate in 2018.



Mr. Nikolaus Grieshaber  
May 3, 2017  
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## Disclaimer

Current accepted professional practices and procedures were used in the development of these traffic and revenue forecasts. However, as with any forecast of the future, it should be understood that there may be differences between forecasted and actual results caused by events and circumstances beyond the control of the forecasters. In formulating its forecasts, CDM Smith has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the Pennsylvania Turnpike Commission. 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.

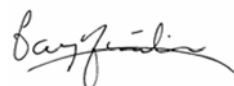
All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple federal, state and local agencies, including the Pennsylvania Turnpike Commission, and some independent parties. These estimates and projections may not 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 estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate 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.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert W. Pinter".

Robert Pinter  
Vice President  
CDM Smith Inc.

A handwritten signature in black ink, appearing to read "Gary T. Quinlin".

Gary T. Quinlin  
Project Manager  
CDM Smith Inc.