Marathon Petroleum Corporation

2016 | ANNUAL REPORT

DELIVERING SIGNIFICANT RETURNS FOR OUR SHAREHOLDERS

Since becoming an independent company July 1, 2011, to year-end 2016

MPC Has Returned More Than

$10 BILLION

To Shareholders

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On cover: MPC's refinery in Canton, Ohio

On this page: MPC's refinery in Catlettsburg, Kentucky

From the Chairman, President and CEO

Fellow shareholders,

Marathon Petroleum Corporation delivered strong operational and financial performance for our shareholders in 2016, a year that marked our fifth year as a stand-alone company and our first year incorporating the MarkWest business in our operations. We also announced plans for strategic actions to enhance shareholder value in 2017.

Our earnings in 2016 were $1.17 billion, or $2.21 per diluted share, a solid result despite a challenging commodity price and margin environment.

In the first full year following the strategic combination of our midstream master limited partnership, MPLX LP, with MarkWest, we are encouraged by the robust portfolio of growth opportunities that will continue to contribute to long-term value for our investors.

Speedway continues to excel, turning in another exceptional year, setting multiple records while maintaining tight control on expenses. We expect to continue driving marketing-enhancement opportunities across the network as we build new stores, remodel stores and rebuild existing locations in the retail segment's core markets.

Throughout our Refining and Marketing system, we continue to execute projects that focus on technical excellence and improving our performance, including the implementation of high-return staged investments in the South Texas Asset Repositioning (STAR) program through 2021. The program is designed to enhance profitability and reliability while creating the second-largest refining complex in the United States through the integration of our Galveston Bay and Texas City refineries.

Additionally, we have announced strategic actions to enhance our shareholders' value. MPC is significantly accelerating plans to dropdown to MPLX assets with approximately $1.4 billion of annual earnings before interest, taxes, depreciation and amortization (EBITDA) expected in 2017, including $250 million in the first quarter.

In conjunction with the completion of the dropdowns, we intend to exchange MPC's economic interests in the MPLX general partner, including incentive distribution rights, for newly issued MPLX common (LP) units. These transactions are subject to requisite approvals, market and other conditions, including tax and other regulatory clearances. Additionally, a special committee of the Board has been formed and has selected an independent financial advisor to

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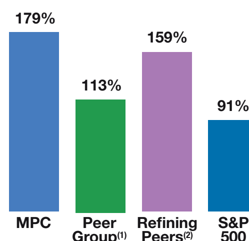
TOTAL SHAREHOLDER RETURN SINCE SPINOFF

Since becoming an independent company July 1, 2011, to year-end 2016



(1) Peer Group represents average TSR of BP, Chevron, ExxonMobil, HollyFrontier, Phillips 66, Royal Dutch Shell, Tesoro and Valero

(2) Refining Peers represents average TSR of HollyFrontier, PBF Energy, Phillips 66, Tesoro and Valero

assist in the full and thorough review of Speedway to ensure optimum value is delivered to shareholders over the long term. We expect to provide an update on the review by mid-2017.

Cash proceeds from the dropdowns and ongoing LP distributions are expected to fund the substantial ongoing return of capital to MPC shareholders in a manner consistent with maintaining an investment-grade credit profile.

Our experienced board and knowledgeable leadership team are executing this strategic plan to unlock the tremendous value in our best-in-class midstream platform for the benefit of all investors.

MPC has a track record of success and continues to deliver strong returns for our investors. With strengthening commodity prices, recovering refinery spreads and our aggressive plans to enhance investor value, we remain well-positioned across the business to create and deliver long-term value for our shareholders. We thank you for investing in MPC, for sharing in our vision, and for contributing to our success.

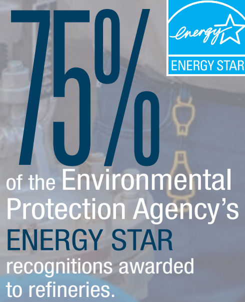
Sincerely,

Gary R. Heminger
Chairman, President and Chief Executive Officer

A MarkWest Energy Partners, L.P. facility in Houston, Pennsylvania

REFINING AND MARKETING

We remain focused on enhancing margins at our refineries, and in 2016 we made significant progress capitalizing on strategic opportunities with our combination of well-positioned Midwest refineries and large Gulf Coast refineries to further our competitive advantages, including expanding optimization potential and increasing export access.

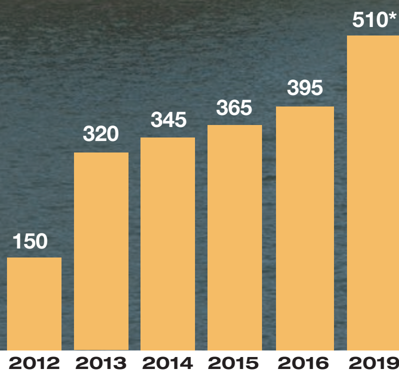


75% of the Environmental Protection Agency's ENERGY STAR recognitions awarded to refineries.

That's despite owning and operating just 10% of total U.S. refining capacity.

Top: MPC's Robinson, Illinois, refinery

Employees at MPC's refinery in Catlettsburg, Kentucky



Export dock at MPC's Garyville, Louisiana, refinery

We executed on our refinery turnaround activity in 2016, completing significant projects at our Robinson, Illinois; Garyville, Louisiana; and Galveston Bay, Texas, refineries. Our Garyville refinery successfully completed its largest turnaround in history, allowing us to increase production of high-value products such as alkylate and light products.

In Robinson, we completed a project to increase light crude processing and overall crude capacity, improving the refinery's flexibility to optimize its crude slate and product yields in a variety of market conditions.

We completed an expansion of our export capacity at Galveston Bay, increasing the refinery's export capacity by 30,000 barrels per day, increasing our total export capacity from Galveston Bay and Garyville to nearly 400,000 barrels per day, and further expanding our product placement flexibility and optionality.

We also completed the first phase of our multi-year STAR program at the Galveston Bay refinery in Texas City, improving profitability of the refinery by increasing the conversion of residual oil to lighter products by 20,000 barrels per day.

Looking ahead, we plan to continue margin-enhancing investments such as the Garyville distillate projects, Galveston Bay export capacity expansion and continuation of the STAR program.

MPC's Catlettsburg, Kentucky, refinery

Employees at MPC's Galveston Bay refinery in Texas City, Texas

TOTAL REFINERY THROUGHPUTS

Million Barrels Per Day

MECHANICAL AVAILABILITY*

Percentage of Combined Unit Capacity

*Rated capacity of all MPC operations, less lost capacity due to planned and unplanned outages, divided by rated capacity

SPEEDWAY

In 2016, Speedway, the second-largest chain of company-owned and operated retail gasoline and convenience stores in the United States, continued to exceed our expectations, delivering record contributions to the company's financial results by driving marketing-enhancement opportunities and continuing to realize acquisition synergies across the network. Speedway set segment records in income from operations, light product gallons sold, merchandise sales, and merchandise gross margin on a percentage and absolute dollar basis.

During 2016, we completed the final store conversions of the 1,230 locations Speedway acquired in 2014. We improved merchandise gross margins across the network making significant progress toward our goal of generating two-thirds of gross margins from merchandise sales and one-third from fuel sales. With the conversions completed ahead of schedule and under budget, we are realizing greater synergies than expected and realizing them at a faster pace. Speedway achieved approximately $150 million in synergies in 2015 and approximately $180 million in synergies in 2016. We anticipate synergies of approximately $225 million in 2017 as we continue to focus on marketing-enhancement opportunities.

2,733 convenience stores in **21** states

5.7 MILLION

ACTIVE MEMBERS OF THE SPEEDY REWARDS® PROGRAM IN 2016*

*12-month rolling average

Speedway continues to build new stores while rebuilding and remodeling existing stores in core markets. We opened 18 new stores and six rebuilds in 2016 and completed nearly 350 remodel projects, with more of these high-return investments planned for 2017. The accelerated pace of remodels continues to provide a strong foundation for sales growth and margin enhancements across the entire Speedway business.

Additionally, in November, Speedway entered into a joint venture with Pilot Flying J consisting of 123 travel plazas, primarily in the Southeast United States. Speedway contributed 41 locations and Pilot Flying J

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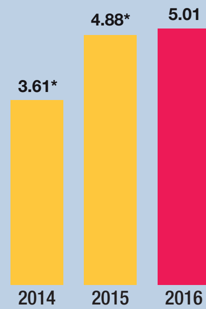
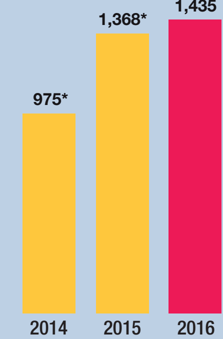
SPEEDWAY MERCHANDISE SALES

$ Billion



SPEEDWAY MERCHANDISE GROSS MARGIN

$ Million



*Includes impact of acquisition, closed Sept. 30, 2014

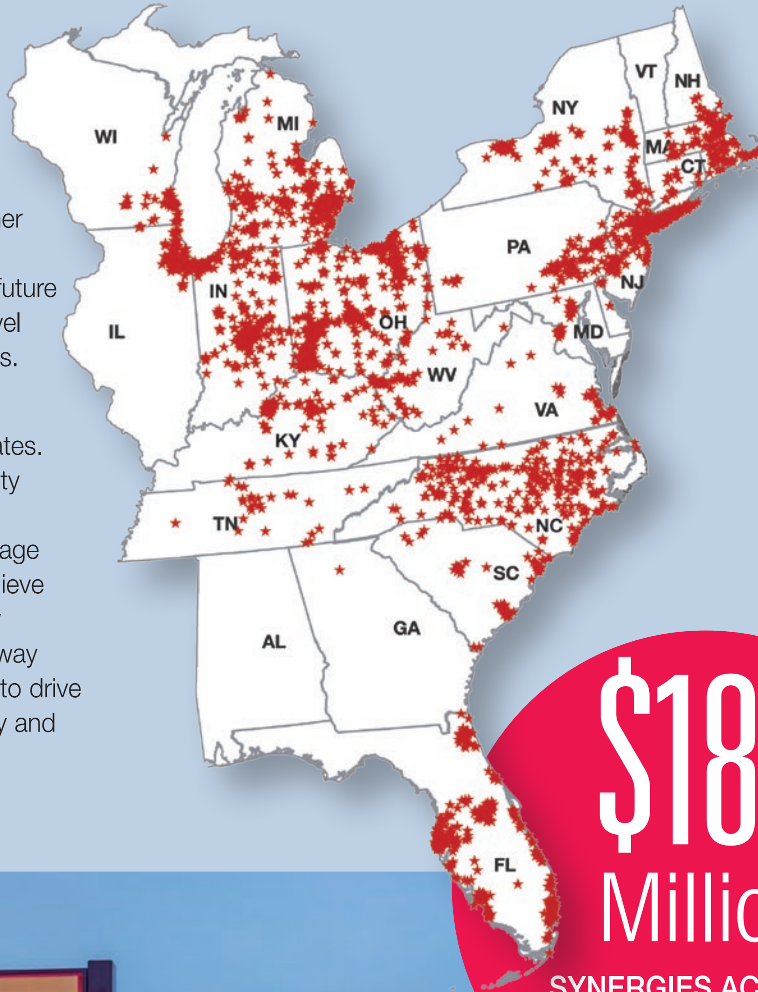
An MPC fuel transport truck at a Speedway store in Columbia, Tennessee

Top: Inside a Speedway store in Springfield, Ohio

Above: A Speedway store in Findlay, Ohio

contributed 82 locations to the new entity, PFJ Southeast LLC as of Dec. 31, 2016. Pilot Flying J is the operator of the venture with locations branded either Pilot or Flying J. This joint venture creates a strategic partnership for future growth with one of the premier travel plaza operators in the United States.

Speedway finished the year with 2,733 convenience stores in 21 states. Speedway's Speedy Rewards loyalty program grew by approximately 1 million members in 2016, to average 5.7 million active members. We believe Speedy Rewards is among the key reasons customers choose Speedway over competitors, and it continues to drive significant value for both Speedway and our Speedy Rewards members.



$180 Million

SYNERGIES ACHIEVED IN 2016 BY ACQUIRED STORES

A Speedway store in Enon, Ohio

MIDSTREAM

Upon completing a full year of operations following the strategic combination of our master limited partnership, MPLX, with MarkWest, our Midstream segment's value as a long-term value driver remains a top priority.

The addition of MarkWest assets to MPLX transformed the profile of our partnership to one of the largest natural gas processors in the United States and the largest processor and fractionator in the prolific Marcellus and Utica shales in the Northeast United States. Over the course of 2016, the partnership reported year-over-year increases of 11 percent in gathering, 13 percent in natural gas processing and 25 percent in natural gas liquids fractionation volumes. The partnership continues to execute and pursue exceptional growth opportunities, supporting a diverse set of producer customers in some of the nation's most prolific shale plays.

(Continued on Page 10)

MPC IS EXECUTING PLANS TO DROPDOWN* TO MPLX ASSETS WITH ANNUAL EBITDA OF APPROXIMATELY

$1.4 Billion

*expected in 2017, pending requisite approvals and regulatory clearances

Insert top: MarkWest's Cadiz, Ohio, complex

Insert bottom: MarkWest's Bluestone processing plant in Evans City, Pennsylvania

MarkWest's Hidalgo complex in Orla, Texas

MPLX expanded its presence in the Southwest with the completion of its Hidalgo gas processing complex in the Delaware Basin of Texas, and will evaluate further investments in Gathering and Processing to support the substantial activity our producer customers are pursuing in the region.

MPLX also expanded its logistics and storage network with the commencement of the Cornerstone Pipeline, designed to transport condensate and natural gasoline from the Marcellus and Utica regions to MPC's Canton, Ohio, refinery. The partnership is expanding the capacity of existing pipelines and constructing new pipelines as part of a larger build-out of Utica Shale infrastructure, seizing a unique opportunity to connect natural

Top: Right of way for MPLX's Cornerstone Pipeline in Eastern Ohio
MPC employees at a Cornerstone Pipeline station

gas liquids to downstream markets in the Midwest and Canada through our extensive distribution network.

Additionally, in March, MPC contributed its inland marine business to MPLX in exchange for additional MPLX equity, continuing the diversification of earnings streams and adding further fee-based revenues to the partnership.

MPC is now executing strategic actions to enhance shareholder value, including the planned dropdown to MPLX of assets generating approximately $1.4 billion of EBITDA, expected in 2017, subject to requisite approvals, market and other conditions, including tax and other regulatory clearances.

Top: A marine tow along the Ohio River near Cincinnati, Ohio
MPC's refinery in Catlettsburg, Kentucky

GROWTH AND ENHANCING SHAREHOLDER VALUE

As a company, MPC drew upon its strengths in 2016 in order to deliver solid results despite a challenging year from a commodity price and margin perspective. Among the year's notable performances were record financial results from our Speedway and Midstream segments.

Looking forward, we are enthusiastic about our plans to enhance shareholder value and remain encouraged by the opportunities ahead. We are energized by the growth opportunities at MPLX and our Midstream segment, which will continue to be a source of long-term value for our investors. MPC plans to exchange our economic interests in the general partner, including incentive distribution rights, for LP units, in conjunction with the completion of the accelerated dropdowns. We believe this will provide a clear marker on the substantial value of MPC's midstream interests and optimize the cost of capital for MPLX over the long term.

The proceeds from the dropdowns, along with the LP distributions MPC will receive following the exchange, are expected to fund substantial ongoing returns of capital to MPC shareholders. As always, we intend to do this in a manner consistent with maintaining an investment-grade credit profile at both MPC and MPLX. Additionally, a special committee of the Board has been formed and, with the assistance of an independent financial advisor, will perform a full and thorough review of Speedway, to ensure optimum value is delivered to shareholders over the long term. We expect to provide an update on this review to shareholders by mid-2017.

Our capital investment plans for both MPC and MPLX remain focused on strengthening the sustained earnings power of our business through growth and margin-enhancing projects, as well as expanding our more stable cash-flow businesses.

Since our formation in 2011, we have generated more than $13 billion in net income and increased our base dividend at a 28 percent compound annual growth rate through 2016. We have returned more than $10 billion to shareholders.

While we at MPC continue to work with a near-term intensity to execute strategic actions we expect to enhance shareholder value, we remain committed in the long term to operational excellence, generating compelling capital returns and delivering enduring value for our shareholders.

MarkWest's Hidalgo complex in Orla, Texas

MPC LOGISTICS

8,400 Approximate miles of pipeline that MPC owns, leases or has ownership interest in

CRUDE OIL REFINING CAPACITY

	BPCD	NCI*
Galveston Bay	459,000	13.0
Garyville	543,000	11.2
Detroit	132,000	9.9
Robinson	231,000	9.8
Catlettsburg	273,000	9.3
Canton	93,000	7.8
Texas City	86,000	7.8
TOTAL	**1,817,000**	**10.7****

*Nelson Complexity Index (NCI) calculated per Oil & Gas Journal NCI formula
**Weighted Average NCI
BPCD: barrels per calendar day
Source: MPC Data

MARATHON

Marketing Area
MPC Refineries
Light Product Terminals
MPC Owned and Part-owned
Third Party
Asphalt/Heavy Oil Terminals
MPC Owned
Third Party
Water Supplied Terminals
Coastal
Inland
Pipelines
MPC Owned & Operated
MPC Interest: Operated by MPC
MPC Interest: Operated by Others
Pipelines Used by MPC
Ethanol Facility
Biodiesel Facility

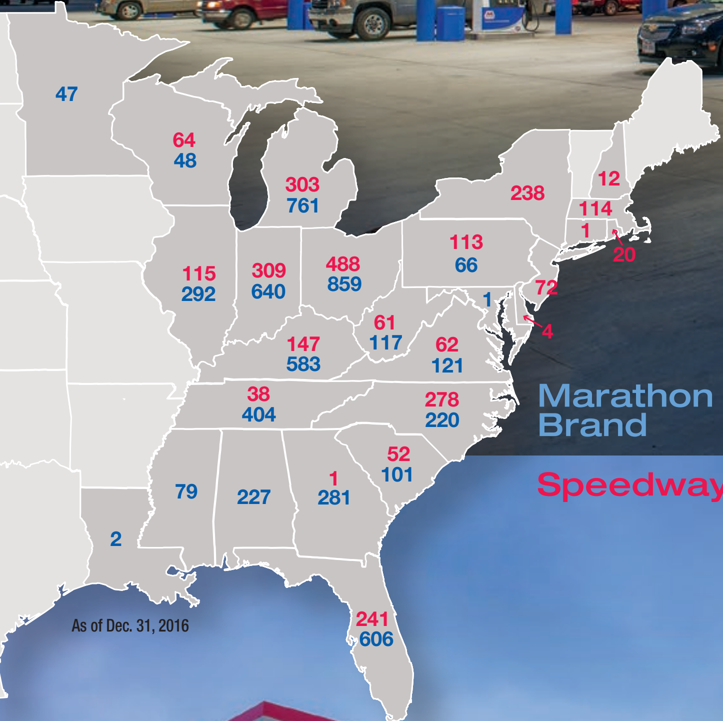
MPLX
Tank Farms
Pipelines
Butane Cavern
Barge Dock
MarkWest Complex
Marine Repair Facility

LOOP LLC

As of Dec. 31, 2016

MARATHON BRAND AND SPEEDWAY LOCATIONS

Extensive Retail Network



MARATHON BRAND

owned and operated by

independent entrepreneurs

~5,500 branded locations

located in

19 states

2016 gasoline and distillate sales of

4.8 billion gallons

MARATHON BRAND GASOLINE AND DISTILLATE SALES

Billion Gallons

SPEEDWAY

2,733 stores

located in

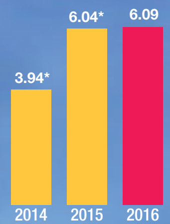
21 states

2016 gasoline and distillate sales of

6.1 billion gallons

SPEEDWAY GASOLINE AND DISTILLATE SALES

Billion Gallons



*Includes impact of Hess acquisition, closed Sept. 30, 2014

FINANCIAL AND OPERATIONAL HIGHLIGHTS

mm = millions
mbpd = thousand barrels per day

	2016	2015	2014
Revenues ($mm)	**63,339**	72,051	97,817
Income from operations ($mm)	**2,378**	4,692	4,051
Net income attributable to MPC ($mm)	**1,174**	2,852	2,524
Per-common-share data[(a)]			
Net income attributable to MPC – basic ($)	**2.22**	5.29	4.42
Net income attributable to MPC – diluted ($)	**2.21**	5.26	4.39
Dividends ($)	**1.36**	1.14	0.92
Weighted average shares outstanding – basic[(b)] (mm)	**528**	538	570
Weighted average shares outstanding – diluted[(b)] (mm)	**530**	542	574
Cash and cash equivalents ($mm)	**887**	1,127	1,494
Total debt[(c)] ($mm)	**10,572**	11,925	6,602
Equity ($mm)	**20,203**	19,675	11,390
Capital expenditures and investments[(d)] ($mm)	**3,069**	16,283	4,738
Refinery throughput (crude oil – mbpd)	**1,699**	1,711	1,622
Refinery throughput (other charge and blendstocks – mbpd)	**151**	177	184
Total refinery throughput (mbpd)	**1,850**	1,888	1,806
Refined product yields (mbpd)			
Gasoline	**900**	913	869
Distillates	**617**	603	580
Propane	**35**	36	35
Feedstocks and special products	**241**	281	276
Heavy fuel oil	**32**	31	25
Asphalt	**58**	55	54
Total refined product yields	**1,883**	1,919	1,839
R&M refined product sales volume[(e)] (mbpd)	**2,259**	2,289	2,125
R&M gross margin[(f)] ($/barrel)	**11.26**	15.25	15.05
Number of outlets (Marathon brand)	**5,455**	5,607	5,455
Number of convenience stores at year-end (Speedway)	**2,733**	2,766	2,746
Speedway gasoline and distillate sales (mm gallons)	**6,094**	6,038	3,942
Speedway gasoline and distillate gross margin[(g)] ($/gallon)	**0.1656**	0.1823	0.1775
Speedway merchandise sales ($mm)	**5,007**	4,879	3,611
Speedway merchandise gross margin ($mm)	**1,435**	1,368	975
Crude oil and refined product pipeline throughput (mbpd)	**2,311**	2,191	2,119
Gathering system throughput (mm cubic feet/day)[(h)]	**3,275**	3,075	
Natural gas processed (mm cubic feet/day)[(h)]	**5,761**	5,468	
C2+ NGLs fractionated (mbpd)[(h)]	**335**	307	
Number of employees	**44,460**	45,440	45,340

(a) Share data has been restated to reflect the stock split effected in 2015. (b) The number of weighted average shares for 2016, 2015 and 2014 reflect the impact of shares received under our share repurchase program. (c) Includes long-term debt due within one year. We adopted the updated FASB debt issuance cost standard as of June 30, 2015, and applied the changes retrospectively to the prior period presented. We reclassified unamortized debt issuance costs from other noncurrent assets to long-term debt. (d) Capital expenditures and investments include acquisitions, changes in capital accruals and capitalized interest. (e) Includes intersegment sales. (f) Sales revenue less cost of refinery inputs and purchased products, divided by total refinery throughputs. Excludes lower of cost or market inventory valuation adjustment. (g) The price paid by consumers less the cost of refined products, including transportation, consumer excise taxes and bankcard processing fees, divided by gasoline and distillate sales volumes. Excludes lower of cost or market inventory valuation adjustment. (h) Includes amounts related to unconsolidated equity method investments. Includes the MarkWest results beginning on the Dec. 4, 2015, merger date.

BOARD OF DIRECTORS

Standing (left to right):

Abdulaziz F. Alkhayyal
Retired Senior Vice President, Industrial Relations, Saudi Aramco. Mr. Alkhayyal joined Saudi Aramco in 1981 and held positions of increasing responsibility before being named senior vice president, refining, marketing and international in 2001, and vice president, industrial relations in 2007.

Steven A. Davis
Former Chairman and CEO, Bob Evans Farms, Inc. Mr. Davis previously served as president of Long John Silver's and A&W All-American Food Restaurants, and held executive and operational positions in Yum! Brands' Pizza Hut division and Kraft General Foods.

John P. Surma
Retired Chairman and CEO, United States Steel Corporation. Prior to USS, Mr. Surma held various leadership positions at Marathon Oil Company, including senior vice president of Finance and Accounting, president of Speedway SuperAmerica LLC, and president of Marathon Ashland Petroleum LLC.

James E. Rohr
Retired Chairman and CEO, The PNC Financial Services Group, Inc. Mr. Rohr joined PNC in 1972, serving in various capacities of increasing responsibility. He was named CEO in 2000 and oversaw record growth for PNC before stepping down as CEO in 2013.

Charles E. Bunch
Retired Chairman and CEO, PPG Industries. Mr. Bunch joined PPG in 1979 and held various positions of increasing responsibility before being appointed president, chief operating officer and board member in 2002, and chairman and CEO in 2005. He retired as CEO in 2015 and as chairman in 2016.

Evan Bayh
Senior Advisor, Apollo Global Management and Partner, McGuireWoods LLP. Sen. Bayh was U.S. senator from, and governor of, Indiana. Sen. Bayh served on numerous Senate committees, holding key leadership roles on several of them.

Seated (left to right):

Frank M. Semple
Retired Chairman, President and CEO, MarkWest Energy Partners, L.P. Mr. Semple joined MarkWest Energy Partners, L.P. in 2003 as president and CEO, and was elected chairman in 2008. He completed a 22-year career with The Williams Companies and WilTel Communications prior to MarkWest.

John W. Snow
Non-Executive Chairman, Cerberus Capital Management, L.P. Prior to Cerberus Capital, Mr. Snow was U.S. secretary of the Treasury during the George W. Bush administration. He also was chairman and CEO of CSX Corporation and held several high-ranking positions in the Department of Transportation during the Ford administration.

Gary R. Heminger
Chairman, President and CEO, Marathon Petroleum Corporation. Mr. Heminger joined Marathon Oil Company in 1975 and held various leadership positions, including head of Marathon's downstream operations beginning in 2001. Mr. Heminger was named president and CEO of Marathon Petroleum Corporation in 2011, and chairman in 2016.

David A. Daberko
Lead Director, Marathon Petroleum Corporation. Mr. Daberko joined National City Bank in 1968 and went on to hold a number of management positions. He was named chairman of the board and chief executive officer of National City Corporation in 1995 and served in those capacities until his retirement in 2007.

Donna A. James
Managing Director, Lardon & Associates, LLC. Before establishing Lardon & Associates, Ms. James was president of Nationwide Strategic Investments. Prior to being president, Ms. James held various executive positions at Nationwide. Ms. James is founder and chair of The Center for Healthy Families and is the former chair of the National Women's Business Council.

CORPORATE OFFICERS

Standing (left to right):

Suzanne Gagle
Vice President and General Counsel

Randy S. Nickerson
Executive Vice President, Corporate Strategy

Molly R. Benson
Vice President, Corporate Secretary and Chief Compliance Officer

John R. Haley
Vice President, Tax

Rodney P. Nichols
Senior Vice President, Human Resources and Administrative Services

John J. Quaid
Vice President and Controller

Thomas Kaczynski
Vice President, Finance and Treasurer

David L. Whikehart
Vice President, Environment, Safety and Corporate Affairs

Donald W. Wehrly
Vice President and Chief Information Officer

Thomas M. Kelley
Senior Vice President, Marketing

Seated (left to right):

John S. Swearingen
Senior Vice President, Transportation and Logistics

Anthony R. Kenney
President, Speedway LLC

Donald C. Templin
Executive Vice President

Gary R. Heminger
Chairman, President and Chief Executive Officer

Timothy T. Griffith
Senior Vice President and Chief Financial Officer

Raymond L. Brooks
Senior Vice President, Refining

C. Michael Palmer
Senior Vice President, Supply, Distribution and Planning

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended December 31, 2016

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 001-35054

Marathon Petroleum Corporation

(Exact name of registrant as specified in its charter)

Delaware	**27-1284632**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

539 South Main Street, Findlay, OH 45840-3229
(Address of principal executive offices)

(419) 422-2121
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value $.01	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☑ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

Indicate by check mark whether the registrant is a large accelerated filer, accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

The aggregate market value of Common Stock held by non-affiliates as of June 30, 2016 was approximately $20.0 billion. This amount is based on the closing price of the registrant's Common Stock on the New York Stock Exchange on June 30, 2016. Shares of Common Stock held by executive officers and directors of the registrant are not included in the computation. The registrant, solely for the purpose of this required presentation, has deemed its directors and executive officers to be affiliates.

There were 527,782,929 shares of Marathon Petroleum Corporation Common Stock outstanding as of February 13, 2017.

Documents Incorporated By Reference

Portions of the registrant's proxy statement relating to its 2017 Annual Meeting of Shareholders, to be filed with the Securities and Exchange Commission pursuant to Regulation 14A under the Securities Exchange Act of 1934, are incorporated by reference to the extent set forth in Part III, Items 10-14 of this Report.

MARATHON PETROLEUM CORPORATION

Unless otherwise stated or the context otherwise indicates, all references in this Annual Report on Form 10-K to "MPC," "us," "our," "we" or "the Company" mean Marathon Petroleum Corporation and its consolidated subsidiaries.

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GLOSSARY OF TERMS

Throughout this report, the following company or industry specific terms and abbreviations are used:

Term	Definition
ASC	Accounting Standards Codification
ASR	Accelerated share repurchase
ATB	Articulated tug barges
barrel	One stock tank barrel, or 42 United States gallons liquid volume, used in reference to crude oil or other liquid hydrocarbons.
DEI	Designated Environmental Incidents
EBITDA (a non-GAAP financial measure)	Earnings Before Interest, Tax, Depreciation and Amortization
EIA	United States Energy Information Administration
EPA	United States Environmental Protection Agency
FASB	Financial Accounting Standards Board
FCC	Fluid Catalytic Cracking
FERC	Federal Energy Regulatory Commission
IDR	Incentive Distribution Rights
LCM	Lower of cost or market
LIBO Rate	London Interbank Offered Rate
LIFO	Last in, first out
LLS	Louisiana Light Sweet crude oil, an oil index benchmark price
mbpd	Thousand barrels per day
mbpcd	Thousand barrels per calender day
Mcf	One thousand cubic feet of natural gas
mmbpcd	Million barrels per calender day
MMcf/d	One million cubic feet of natural gas per day
MMBtu	One million British thermal units per day
NYMEX	New York Mercantile Exchange
NYSE	New York Stock Exchange
NGL	Natural gas liquids, such as ethane, propane, butanes and natural gasoline
PADD	Petroleum Administration for Defense District
OPEC	Organization of Petroleum Exporting Countries
OSHA	United States Occupational Safety and Health Administration
OTC	Over-the-Counter
ppb	Parts per billion
ppm	Parts per million
RFS2	Revised Renewable Fuel Standard program, as required by the Energy Independence and Security Act of 2007
RIN	Renewable Identification Number
ROUX	Residual Oil Upgrader Expansion
SEC	Securities and Exchange Commission
STAR	South Texas Asset Repositioning
ULSD	Ultra-low sulfur diesel
US GAAP	Accounting principles generally accepted in the United States
USGC	U.S. Gulf Coast
UST	Underground storage tank
VIE	Variable interest entity
VPP	Voluntary Protection Program
WTI	West Texas Intermediate crude oil, an oil index benchmark price

Disclosures Regarding Forward-Looking Statements

This Annual Report on Form 10-K, particularly Item 1. Business, Item 1A. Risk Factors, Item 3. Legal Proceedings, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Item 7A. Quantitative and Qualitative Disclosures about Market Risk, includes forward-looking statements. You can identify our forward-looking statements by words such as "anticipate," "believe," "design," "estimate," "objective," "expect," "forecast," "outlook," "goal," "guidance," "imply," "intend," "plan," "predict," "prospective," "project," "opportunity," "potential," "position," "pursue," "strategy," "seek," "target," "could," "may," "should," "would," "will" or other similar expressions that convey the uncertainty of future events or outcomes. In accordance with "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, these statements are accompanied by cautionary language identifying important factors, though not necessarily all such factors, that could cause future outcomes to differ materially from those set forth in the forward-looking statements.

Forward-looking statements include, but are not limited to, statements that relate to, or statements that are subject to risks, contingencies or uncertainties that relate to:

- future levels of revenues, refining and marketing gross margins, operating costs, retail gasoline and distillate gross margins, merchandise margins, income from operations, net income or earnings per share;
- anticipated volumes of feedstock, throughput, sales or shipments of refined products;
- anticipated levels of regional, national and worldwide prices of crude oil, natural gas, NGLs and refined products;
- anticipated levels of crude oil and refined product inventories;
- future levels of capital, environmental or maintenance expenditures, general and administrative and other expenses;
- the success or timing of completion of ongoing or anticipated capital or maintenance projects;
- business strategies, growth opportunities and expected investments, including strategic initiatives and actions, as well as planned equity investments in pipeline projects;
- expectations regarding the acquisition or divestiture of assets as well as the strategic initiatives discussed herein, such as the proposed accelerated dropdown of assets to MPLX LP and plans to exchange our economic interest in the general partner, including IDRs, for newly issued MPLX LP common units;
- our share repurchase authorizations, including the timing and amounts of any common stock repurchases;
- the adequacy of our capital resources and liquidity, including but not limited to, availability of sufficient cash flow to execute our business plan;
- the effect of restructuring or reorganization of business components;
- the potential effects of judicial or other proceedings on our business, financial condition, results of operations and cash flows; and
- the anticipated effects of actions of third parties such as competitors, activist investors or federal, foreign, state or local regulatory authorities or plaintiffs in litigation.

We have based our forward-looking statements on our current expectations, estimates and projections about our industry and our company. We caution that these statements are not guarantees of future performance, and you should not rely unduly on them, as they involve risks, uncertainties and assumptions that we cannot predict. In

addition, we have based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. While our management considers these assumptions to be reasonable, they are inherently subject to significant business, economic, competitive, regulatory and other risks, contingencies and uncertainties, most of which are difficult to predict and many of which are beyond our control. Accordingly, our actual results may differ materially from the future performance that we have expressed or forecast in our forward-looking statements. Differences between actual results and any future performance suggested in our forward-looking statements could result from a variety of factors, including the following:

- volatility or degradation in general economic, market, industry or business conditions;
- availability and pricing of domestic and foreign supplies of natural gas, NGLs and crude oil and other feedstocks;
- the ability of the members of the OPEC to agree on and to influence crude oil price and production controls;
- availability and pricing of domestic and foreign supplies of refined products such as gasoline, diesel fuel, jet fuel, home heating oil and petrochemicals;
- foreign imports and exports of crude oil, refined products, natural gas and NGLs;
- refining industry overcapacity or under capacity;
- changes in producer customers' drilling plans or in volumes of throughput of crude oil, natural gas, NGLs, refined products or other hydrocarbon-based products;
- changes in the cost or availability of third-party vessels, pipelines, railcars and other means of transportation for crude oil, natural gas, NGLs, feedstocks and refined products;
- changes to the expected construction costs and timing of projects;
- the price, availability and acceptance of alternative fuels and alternative-fuel vehicles and laws mandating such fuels or vehicles;
- fluctuations in consumer demand for refined products, natural gas and NGLs, including seasonal fluctuations;
- political and economic conditions in nations that consume refined products, natural gas and NGLs, including the United States, and in crude oil producing regions, including the Middle East, Africa, Canada and South America;
- actions taken by our competitors, including pricing adjustments, expansion of retail activities, the expansion and retirement of refining capacity and the expansion and retirement of pipeline capacity, processing, fractionation and treating facilities in response to market conditions;
- completion of pipeline projects within the United States;
- changes in fuel and utility costs for our facilities;
- failure to realize the benefits projected for capital projects, or cost overruns associated with such projects;
- modifications to MPLX LP earnings and distribution growth objectives;
- the ability to successfully implement growth opportunities, including strategic initiatives and actions;
- the time, costs and ability to obtain regulatory or other approvals, waivers or consents required to consummate strategic actions discussed herein, such as the proposed accelerated dropdown of assets to MPLX LP;
- the risk that the synergies from the MarkWest Merger (defined below) may not be fully realized or may take longer to realize than expected;

- risks and uncertainties associated with intangible assets, including any future goodwill or intangible assets impairment charges;
- the ability to realize the strategic benefits of joint venture opportunities;
- accidents or other unscheduled shutdowns affecting our refineries, machinery, pipelines, processing, fractionation and treating facilities or equipment, or those of our suppliers or customers;
- unusual weather conditions and natural disasters, which can unforeseeably affect the price or availability of crude oil and other feedstocks and refined products;
- acts of war, terrorism or civil unrest that could impair our ability to produce refined products, receive feedstocks or to gather, process, fractionate or transport crude oil, natural gas, NGLs or refined products;
- state and federal environmental, economic, health and safety, energy and other policies and regulations, including the cost of compliance with the renewable fuel standard program;
- adverse changes in laws including with respect to tax and regulatory matters;
- rulings, judgments or settlements and related expenses in litigation or other legal, tax or regulatory matters, including unexpected environmental remediation costs, in excess of any reserves or insurance coverage;
- political pressure and influence of environmental groups upon policies and decisions related to the production, gathering, refining, processing, fractionation, transportation and marketing of crude oil or other feedstocks, refined products, natural gas, NGLs or other hydrocarbon-based products;
- labor and material shortages;
- the maintenance of satisfactory relationships with labor unions and joint venture partners;
- the ability and willingness of parties with whom we have material relationships to perform their obligations to us;
- the market price of our common stock and its impact on our share repurchase authorizations;
- changes in the credit ratings assigned to our debt securities and trade credit, changes in the availability of unsecured credit and changes affecting the credit markets generally;
- capital market conditions and our ability to raise adequate capital to execute our business plan, including our recently announced strategic actions;
- the costs, disruption and diversion of management’s attention associated with campaigns commenced by activist investors; and
- the other factors described in Item 1A. Risk Factors.

We undertake no obligation to update any forward-looking statements except to the extent required by applicable law.

PART I

Item 1. Business

Overview

Marathon Petroleum Corporation ("MPC") has 129 years of experience in the energy business with roots tracing back to the formation of the Ohio Oil Company in 1887. We are one of the largest independent petroleum product refining, marketing, retail and transportation businesses in the United States and the largest east of the Mississippi. With the merger of MPLX LP ("MPLX"), the midstream master limited partnership sponsored by MPC, and MarkWest Energy Partners, L.P. ("MarkWest") effective December 4, 2015 (the "MarkWest Merger"), we are one of the largest natural gas processors in the United States and the largest processor and fractionator in the Marcellus and Utica shale regions.

Our operations consist of three reportable operating segments: Refining & Marketing; Speedway; and Midstream. Each of these segments is organized and managed based upon the nature of the products and services it offers.

- Refining & Marketing – refines crude oil and other feedstocks at our seven refineries in the Gulf Coast and Midwest regions of the United States, purchases refined products and ethanol for resale and distributes refined products through various means, including terminals and trucks that we own or operate. We sell refined products to wholesale marketing customers domestically and internationally, buyers on the spot market, our Speedway® business segment and to independent entrepreneurs who operate Marathon® retail outlets.
- Speedway – sells transportation fuels and convenience products in the retail market in the Midwest, East Coast and Southeast regions of the United States.
- Midstream – includes the operations of MPLX and certain other related operations. The Midstream segment gathers, processes and transports natural gas; gathers, transports, fractionates, stores and markets NGLs and transports and stores crude oil and refined products.

See Item 8. Financial Statements and Supplementary Data – Note 10 for operating segment and geographic financial information, which is incorporated herein by reference.

Corporate History and Structure

MPC was incorporated in Delaware on November 9, 2009 in connection with an internal restructuring of Marathon Oil Corporation ("Marathon Oil"). On May 25, 2011, the Marathon Oil board of directors approved the spinoff of its Refining, Marketing & Transportation Business ("RM&T Business") into an independent, publicly traded company, MPC, through the distribution of MPC common stock to the stockholders of Marathon Oil common stock on June 30, 2011 (the "Spinoff"). Following the Spinoff, Marathon Oil retained no ownership interest in MPC, and each company has separate public ownership, boards of directors and management. All subsidiaries and equity method investments not contributed by Marathon Oil to MPC remained with Marathon Oil and, together with Marathon Oil, are referred to as the "Marathon Oil Companies." On July 1, 2011, our common stock began trading "regular-way" on the NYSE under the ticker symbol "MPC."

Recent Developments

Strategic Actions to Enhance Shareholder Value

On January 3, 2017, we announced plans to significantly accelerate the dropdown of assets with an estimated $1.4 billion of MLP-eligible annual EBITDA to MPLX now expected to be completed in 2017, subject to requisite approvals and regulatory clearances, including tax clearance, and market and other conditions. In

conjunction with the completion of the dropdowns, we also expect to exchange our economic interests in the general partner of MPLX, including incentive distribution rights, for newly issued MPLX common units. Additionally, a special committee of our board of directors, with the assistance of an independent financial advisor, will conduct a full and thorough review of Speedway to ensure optimum value is being delivered to shareholders over the long term. We expect to provide an update on the review by mid-2017. This significant acceleration of dropdowns and other announced strategic actions are designed to further highlight the substantial value embedded in our integrated businesses.

See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations for additional information on our strategic actions to enhance shareholder value.

Acquisitions and Investments

Pipeline Investments

On September 1, 2016, Enbridge Energy Partners L.P. ("Enbridge Energy Partners") announced that its affiliate, North Dakota Pipeline LLC ("North Dakota Pipeline"), would withdraw certain pending regulatory applications for its Sandpiper pipeline project and that the project would be deferred indefinitely. These decisions were considered to indicate an impairment of the costs capitalized to date on the project. As the operator of North Dakota Pipeline and the entity responsible for maintaining its financial records, Enbridge Energy Partners completed a fixed asset impairment analysis as of August 31, 2016, in accordance with ASC Topic 360. Based on the estimated liquidation value of the fixed assets, an impairment charge was recorded by North Dakota Pipeline. Based on our 37.5 percent ownership of North Dakota Pipeline, we recognized approximately $267 million of this charge in the third quarter of 2016 through "Income (loss) from equity method investments" on the accompanying consolidated statements of income which impaired virtually all of our $301 million investment in the project. See Item 8. Financial Statements and Supplementary Data – Note 17 for information regarding the charge.

On February 15, 2017, MPLX closed on the previously announced transaction to acquire a partial, indirect equity interest in the Dakota Access Pipeline ("DAPL") and Energy Transfer Crude Oil Company Pipeline ("ETCOP") projects, collectively referred to as the Bakken Pipeline system, through a joint venture with Enbridge Energy Partners. MPLX contributed $500 million of the $2 billion purchase price paid by the joint venture to acquire a 36.75 percent indirect equity interest in the Bakken Pipeline system from Energy Transfer Partners, L.P. ("ETP") and Sunoco Logistics Partners, L.P. ("SXL"). MPLX holds, through a subsidiary, a 25 percent interest in the joint venture, which equates to an approximate 9.2 percent indirect equity interest in the Bakken Pipeline system. The Bakken Pipeline system is currently expected to deliver in excess of 470 mbpd of crude oil from the Bakken/ Three Forks production area in North Dakota to the Midwest through Patoka, Illinois and ultimately to the Gulf Coast. Furthermore, MPC expects to become a committed shipper on the Bakken Pipeline system under terms of an on-going open season.

In connection with closing the transaction with ETP and SXL, Enbridge Energy Partners canceled MPC's transportation services agreement with respect to the Sandpiper pipeline project and released MPC from paying any termination fee per that agreement.

In July 2014, we exercised our option to acquire a 35 percent ownership interest in Enbridge Inc.'s Southern Access Extension ("SAX") pipeline which runs from Flanagan, Illinois to Patoka, Illinois. This option resulted from our agreement to be the anchor shipper on the SAX pipeline. We have contributed $299 million since project inception. The pipeline became operational in December 2015. Our investment in the pipeline is included in our Midstream segment.

Marine Investments

We currently have indirect ownership interests in two ocean vessel joint ventures with Crowley Maritime Corporation ("Crowley"), which were established to own and operate Jones Act vessels in petroleum product service. We have invested a total of $189 million in these two ventures as described further below.

In September 2015, we acquired a 50 percent ownership interest in a joint venture, Crowley Ocean Partners LLC ("Crowley Ocean Partners"), with Crowley. The joint venture owns and operates four new Jones Act product tankers, three of which are leased to MPC. Two of the vessels were delivered in 2015 and the remaining two were delivered in 2016. We contributed a total of $141 million for the four vessels.

In May 2016, MPC and Crowley formed a new ocean vessel joint venture, Crowley Coastal Partners LLC ("Crowley Coastal Partners"), in which MPC has a 50 percent ownership interest. MPC and Crowley each contributed their 50 percent ownership in Crowley Ocean Partners, discussed above, into Crowley Coastal Partners. In addition, we contributed $48 million in cash and Crowley contributed its 100 percent ownership interest in Crowley Blue Water Partners LLC ("Crowley Blue Water Partners") to Crowley Coastal Partners. Crowley Blue Water Partners is an entity that owns and operates three 750 Series ATB vessels that are leased to MPC. We account for our 50 percent interest in Crowley Coastal Partners as part of our Midstream segment using the equity method of accounting.

See Item 8. Financial Statements and Supplementary Data – Note 6 for additional information on Crowley Coastal Partners as a VIE and Note 25 for information on our conditional guarantee of the indebtedness of Crowley Ocean Partners and Crowley Blue Water Partners.

MarkWest Merger

On December 4, 2015, a wholly-owned subsidiary of MPLX, the midstream master limited partnership sponsored by MPC, merged with MarkWest, whereby MarkWest became a wholly-owned subsidiary of MPLX. Each common unit of MarkWest issued and outstanding immediately prior to the effective time of the MarkWest Merger was converted into a right to receive 1.09 common units of MPLX representing limited partner interests in MPLX, plus a one-time cash payment of $6.20 per unit. Each Class B unit of MarkWest outstanding immediately prior to the merger was converted into the right to receive one Class B unit of MPLX having substantially similar rights, including conversion and registration rights, and obligations that the Class B units of MarkWest had immediately prior to the merger. At closing, we contributed $1.23 billion in cash to MPLX to pay the cash consideration to MarkWest common unitholders. We agreed to contribute an additional total of $50 million in cash to MPLX for the cash consideration to be paid upon the conversion of the MPLX Class B Units to MPLX common units in equal installments, the first $25 million of which was paid in July 2016 and the second $25 million of which will be paid in July 2017. These contributions are with respect to MPC's existing interests in MPLX (including IDRs) and not in consideration of new units or other equity interest in MPLX. We assigned the total consideration transferred of $8.61 billion, including the $7.33 billion fair value of the equity consideration and the $1.28 billion of cash contributions, to the fair value of the assets acquired and liabilities and noncontrolling interest assumed in the MarkWest Merger, with the excess recorded as goodwill. During the first quarter of 2016, the preliminary fair value measurements of assets acquired and liabilities assumed recorded in the 2015 year-end financial statements were revised based on additional analysis. These adjustments to the fair values of property, plant and equipment, intangibles and equity investments, among other items, resulted in an offsetting reduction to goodwill of approximately $241 million. As a result, we recognized total assets acquired of $11.91 billion, including $8.52 billion of property plant and equipment and $2.60 billion of equity investments, and total liabilities assumed and noncontrolling interests of $5.51 billion, including $4.57 billion of assumed debt. Goodwill is not amortized, but rather is tested for impairment annually or more frequently if warranted due to events or changes in circumstances. MPLX recorded an impairment charge of approximately $129 million in the first quarter of 2016 to impair a portion of the $2.21 billion of goodwill, as adjusted, recorded in connection with the MarkWest Merger. In the second quarter of 2016, MPLX completed its purchase price

allocation, which resulted in an additional $1 million of impairment expense that would have been recorded in the first quarter of 2016 had the purchase price allocation been completed as of that date. This adjustment to the impairment expense was the result of completing an evaluation of the deferred tax liabilities associated with the MarkWest Merger and their impact on the resulting goodwill that was recognized. Our financial results and operating statistics reflect the results of MarkWest from the date of the acquisition.

Consistent with our strategy to grow our midstream business, the MarkWest Merger combines one of the nation's largest processors of natural gas and the largest processor and fractionator in the Marcellus and Utica shale regions with a rapidly growing crude oil and refined products logistics partnership sponsored by MPC. The complementary aspects of the highly diverse asset base of MarkWest, MPLX and MPC provide significant additional opportunities across multiple segments of the hydrocarbon value chain. The combined entity furthers MarkWest's leading midstream presence in the Marcellus and Utica shales by allowing it to pursue additional midstream projects, allowing producer customers to achieve superior value for their growing production in these important shale regions.

Hess Retail Acquisition

On September 30, 2014, we acquired from Hess Corporation ("Hess") all of its retail locations, transport operations and shipper history on various pipelines, including approximately 40 mbpd on Colonial Pipeline, for $2.82 billion. We refer to these assets as "Hess' Retail Operations and Related Assets" and substantially all of these assets are part of our Speedway segment. This acquisition significantly expanded our Speedway presence from nine to 22 states throughout the East Coast and Southeast and is aligned with our strategy to grow our retail business. This acquisition also enables us to further leverage our integrated refining and transportation operations, providing an assured outlet for incremental sales from our refining system. The transaction was funded with a combination of debt and available cash. Our financial results and operating statistics reflect the results of Hess' Retail Operations and Related Assets from the date of the acquisition.

See Item 8. Financial Statements and Supplementary Data – Note 5 for additional information on these acquisitions and investments.

MPLX LP

Overview

MPLX is a diversified, growth-oriented publicly traded master limited partnership formed by us to own, operate, develop and acquire midstream energy infrastructure assets. MPLX is engaged in the gathering, processing and transportation of natural gas; the gathering, transportation, fractionation, storage and marketing of NGLs; and the gathering, transportation and storage of crude oil and refined petroleum products. On December 4, 2015, we completed the MarkWest Merger, whereby MarkWest became a wholly-owned subsidiary of MPLX.

As of December 31, 2016, we owned a 25.5 percent interest in MPLX, including a two percent general partner interest. This ownership percentage reflects the conversion of the MPLX Class B Units in July 2017 at 1.09 to 1.00. MPLX is a VIE because the limited partners of MPLX do not have substantive kick-out or substantive participating rights over the general partner. We are the primary beneficiary of MPLX because in addition to significant economic interest, we also have the power, through our 100 percent ownership of the general partner, to control the decisions that most significantly impact MPLX. We therefore consolidate MPLX and record a noncontrolling interest for the 74.5 percent interest owned by the public. The components of our noncontrolling interest consist of equity-based noncontrolling interest and redeemable noncontrolling interest. The redeemable noncontrolling interest relates to MPLX's preferred units, discussed below.

The creditors of MPLX do not have recourse to MPC's general credit through guarantees or other financial arrangements. The assets of MPLX are the property of MPLX and cannot be used to satisfy the obligations of MPC.

Reorganization Transactions

On September 1, 2016, MPC, MPLX and various affiliates initiated a series of reorganization transactions in order to simplify MPLX's ownership structure and its financial and tax reporting. In connection with these transactions, MPC contributed $225 million to MPLX, and all of the issued and outstanding MPLX Class A Units, all of which were held by MarkWest Hydrocarbon L.L.C. ("MarkWest Hydrocarbon"), a wholly-owned subsidiary of MPLX, were exchanged for newly issued common units representing limited partner interests in MPLX. The simple average of the closing prices of MPLX common units for the last 10 trading days prior to September 1, 2016 was used for purposes of these transactions. As a result of these transactions, MPC increased its ownership interest in MPLX by 7 million MPLX common units, or approximately 1 percent.

Private Placement of Preferred Units

On May 13, 2016, MPLX completed the private placement of approximately 30.8 million 6.5 percent Series A Convertible Preferred Units (the "MPLX Preferred Units") at a cash price of $32.50 per unit. The aggregate net proceeds of approximately $984 million from the sale of the MPLX Preferred Units was used for capital expenditures, repayment of debt and general partnership purposes.

The MPLX Preferred Units rank senior to all MPLX common units with respect to distributions and rights upon liquidation. The holders of the MPLX Preferred Units are entitled to receive quarterly distributions equal to $0.528125 per unit commencing for the quarter ended June 30, 2016, with a prorated amount from the date of issuance. Following the second anniversary of the issuance of the MPLX Preferred Units, the holders of the MPLX Preferred Units will receive as a distribution the greater of $0.528125 per unit or the amount of per unit distributions paid to common unitholders. The MPLX Preferred Units are convertible into MPLX common units on a one for one basis after three years, at the purchasers' option, and after four years at MPLX's option, subject to certain conditions.

The MPLX Preferred Units are considered redeemable securities due to the existence of redemption provisions upon a deemed liquidation event which is considered outside MPLX's control. Therefore they are presented as temporary equity in the mezzanine section of the consolidated balance sheets. We have recorded the MPLX Preferred Units at their issuance date fair value, net of issuance costs. Since the MPLX Preferred Units are not currently redeemable and not probable of becoming redeemable in the future, adjustment to the initial carrying amount is not necessary and would only be required if it becomes probable that the security would become redeemable.

Contribution of Inland Marine Business to MPLX

On March 31, 2016, we contributed our inland marine business to MPLX in exchange for 23 million MPLX common units and 460 thousand MPLX general partner units. The number of units we received from MPLX was determined by dividing $600 million by the volume weighted average NYSE price of MPLX common units for the 10 trading days preceding March 14, 2016, pursuant to the Membership Interests Contribution Agreement. We also agreed to waive first-quarter 2016 common unit distributions, IDRs and general partner distributions with respect to the common units issued in this transaction. The contribution of our inland marine business was accounted for as a transaction between entities under common control and therefore, we did not record a gain or loss.

Public Offering

On February 10, 2017, MPLX completed a public offering of $1.25 billion aggregate principal amount of 4.125% unsecured senior notes due March 2027 (the "MPLX 2027 Senior Notes") and $1.0 billion aggregate principal amount of 5.200% unsecured senior notes due March 2047 (the "MPLX 2047 Senior Notes"). MPLX intends to use the net proceeds from this offering for general partnership purposes, which may include, from time to time, acquisitions (including the previously announced planned dropdown of assets from MPC) and capital expenditures.

ATM Program

On August 4, 2016, MPLX entered into a Second Amended and Restated Distribution Agreement (the "Distribution Agreement") providing for the continuous issuance of MPLX common units, in amounts, at prices and on terms to be determined by market conditions and other factors at the time of any offerings (such continuous offering program, or at-the-market program, referred to as the "ATM Program"). MPLX expects to use the net proceeds from sales under the ATM Program for general partnership purposes including repayment of debt and funding for acquisitions, working capital requirements and capital expenditures.

During 2016, MPLX issued an aggregate of 26 million MPLX common units under the ATM Program, generating net proceeds of approximately $776 million. As of December 31, 2016, $717 million of MPLX common units remains available for issuance through the ATM Program under the Distribution Agreement.

See Item 8. Financial Statements and Supplementary Data – Note 4 for additional information on MPLX.

Our Competitive Strengths

Extensive Integrated Platform of Midstream, Retail and Refining Assets

We believe the relative scale of our integrated midstream, retail and refining assets distinguishes us from other refining companies. We currently own, lease or have ownership interests in approximately 8,400 miles of crude oil and products pipelines. Additionally, we have over 5,600 miles of natural gas and NGL pipelines. We also own or have ownerships interests in one of the largest private domestic fleets of inland petroleum product barges and one of the largest terminal operations in the United States, as well as trucking and rail assets. We operate this transportation and distribution system in coordination with our refining and marketing network enabling us to optimize raw material supplies and refined product distribution, and deliver important economies of scale across our platform. Our Speedway segment, one of our largest distribution channels, is also our most ratable.

We believe our distribution system allows us to maximize the sales value of our products and minimize cost. We also believe our integrated platform of assets gives us extensive flexibility and optionality to respond promptly to dynamic market conditions, including weather-related and marketplace disruptions.

Competitively Positioned Marketing Operations Provide Assured Product Sales

We are one of the largest wholesale suppliers of gasoline and distillates to resellers within our market area. We have two strong retail brands: Speedway® and Marathon®. We believe Speedway LLC, a wholly-owned subsidiary, operates the second largest chain of company-owned and operated retail gasoline and convenience stores in the United States, with approximately 2,730 convenience stores in 21 states throughout the Midwest, East Coast and Southeast regions of the United States. In addition, our highly successful Speedy Rewards® customer loyalty program, which averaged more than 5.7 million active members in 2016, provides us with a unique competitive advantage and opportunity to increase our Speedway customer base at existing and new Speedway locations. The Marathon brand is an established motor fuel brand primarily in the Midwest and Southeast regions of the United States, comprised of approximately 5,500 retail outlets operated by independent entrepreneurs in 19 states as of December 31, 2016. The Marathon brand has been a vehicle for sales volume growth in existing and contiguous markets.

We consider assured sales as those sales we make to Marathon brand customers, our Speedway operations and to our wholesale customers with whom we have required minimum volume sales contracts. Our assured sales currently account for approximately 70% of our gasoline production. We believe having assured sales brings ratability to our distribution systems, provides a solid base to enhance our overall supply reliability and allows us to efficiently and effectively optimize our operations between our refineries, pipelines and terminals.

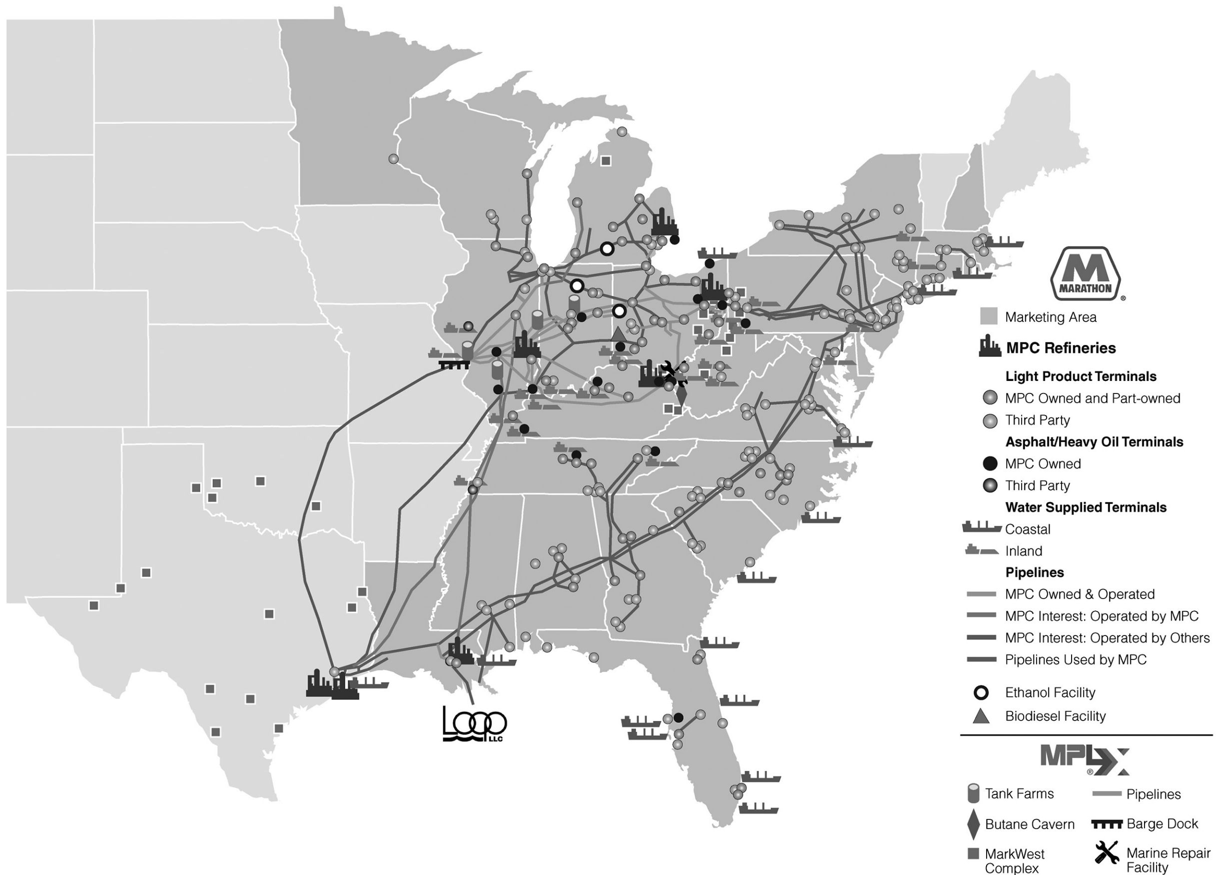
High Quality Network of Strategically Located Assets

We believe we are the largest crude oil refiner in the Midwest and the third largest in the United States based on crude oil refining capacity. We own a seven-plant refinery network, with approximately 1.8 mmbpcd of crude oil throughput capacity. Our refineries process a wide range of crude oils, feedstocks and condensate, including heavy and sour crude oils, which can generally be purchased at a discount to sweet crude oil, and produce transportation fuels such as gasoline and distillates, specialty chemicals and other refined products. While we have historically processed significant quantities of heavy and sour crude oils, our refineries have the ability to process approximately 65 percent to 70 percent light sweet crude oils.

The geographic locations of our refineries provide us with strategic advantages. Located in PADD II and PADD III, which consist of states in the Midwest and the Gulf Coast regions of the United States, our refineries have the ability to procure crude oil from a variety of supply sources, including domestic, Canadian and other foreign sources, which provides us with flexibility to optimize crude supply costs. For example, geographic proximity to various United States shale oil regions and Canadian crude oil supply sources allows our refineries access to price-advantaged crude oils and lower transportation costs than certain of our competitors. Our refinery locations and midstream distribution system also allow us to access refined product export markets and to serve a broad range of key end-user markets across the United States quickly and cost-effectively.

Our Midstream segment assets are similarly located in the Midwest and Gulf Coast regions of the United States, which collectively comprised approximately 81 percent of total United States crude distillation capacity and approximately 81 percent of total United States finished products demand for the year ended December 31, 2016, according to the EIA. MPLX, through MarkWest, its wholly-owned subsidiary, is the largest processor and fractionator in the Marcellus and Utica shale regions. This significantly complements and creates strategic opportunities for our Refining & Marketing segment and MPLX's logistic assets in the same geographic footprint. Our integrated midstream energy asset network links producers of natural gas, NGLs and crude oil from some of the largest supply basins in the United States to domestic and international markets. Our midstream gathering and processing operations include approximately 7,500 MMcf/d of natural gas processing capacity, 500 mbpd of fractionation capacity and more than 5,600 miles of gas gathering and NGL pipelines as of December 31, 2016.

Our Speedway segment, which operates in the Midwest, East Coast and Southeast, complements our refining and midstream assets providing a significant and ratable outlet for our refinery production. Our Speedway operations have also enabled us to further leverage our integrated refining and transportation operations with its expansion from nine to 21 states throughout the East Coast and Southeast. Speedway is a top tier performer in the convenience store industry with the highest EBITDA per store per month of its public peers and leading positions with respect to other comparisons based on light product volume, merchandise sales and total gross margin on a per store per month basis.



* As of December 31, 2016

General Partner and Sponsor of MPLX

Our investment in MPLX provides us an efficient vehicle to invest in organic projects and pursue acquisitions of midstream assets; all with the focus of enhancing our share price through our limited partner and general partner interests in MPLX which tend to receive higher market multiples. MPLX's liquidity, size, scale and access to the capital markets should provide us a strong foundation to execute our strategy for growing our midstream business.

We have an extensive portfolio of MLP-qualifying midstream assets. We plan to offer assets from this portfolio, which are estimated to generate annual EBITDA of approximately $1.4 billion, to MPLX as soon as practicable in 2017, subject to regulatory clearances, including tax clearance, and market and other conditions. In conjunction with the completion of the dropdowns, we expect to pursue an exchange of our economic interests in the general partner, including incentive distribution rights, for newly issued MPLX common units. Following the exchange, we would continue to retain control of the general partner so that we can continue to optimize our refinery feedstock and distribution networks.

See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations for additional information on these midstream assets, including the timing of these strategic actions.

Established Track Record of Profitability and Growing our Midstream and Retail Businesses

We have demonstrated an ability to achieve positive financial results throughout all stages of the refining cycle. We believe our business mix and strategies position us well to continue to achieve competitive financial results. Income generated by our Speedway segment is less sensitive to business cycles. Similarly, income from our Midstream segment, which was significantly expanded through the MarkWest Merger, is more stable over business cycles due to its long-term fee based contracts, while our Refining & Marketing segment enables us to generate significant income and cash flow when market conditions are more favorable.

Strong Financial Position

As of December 31, 2016, we had $653 million in cash and cash equivalents and $4.18 billion in unused committed borrowing facilities, excluding MPLX's cash and cash equivalents of $234 million and its credit facilities. We had $10.57 billion of debt at year-end, which represented 33 percent of our total capitalization. This combination of strong liquidity and manageable leverage provides financial flexibility to fund our growth projects and to pursue our business strategies.

Our Business Strategies

Maintain Top-Tier Safety and Environmental Performance

We remain committed to operating our assets in a safe and reliable manner and targeting continual improvement in our safety record across all of our operations. We have a history of safe and reliable operations, which was demonstrated again in 2016 with a strong process safety performance compared to the industry average. In addition, our corporate headquarters, four of our refineries and eight additional facilities have earned designations as an OSHA VPP Star site. We also remain committed to environmental stewardship by continuing to improve the efficiency and reliability of our operations. We have earned 75 percent of the EPA's Energy Star recognitions awarded to refineries despite owning and operating just 10 percent of total U.S. refining capacity. We proactively address our regulatory requirements and encourage our operations to improve their environmental performance through our DEI program, which establishes goals and measures environmental performance. In 2016, we achieved our best performance since the current program began in 2010 with a third straight year of improving performance. MarkWest will be incorporated into our DEI program in 2017.

Grow Higher Valued, Stable Cash Flow Businesses

We intend to continue to allocate significant portions of our capital to investments intended to grow our midstream and retail businesses. These businesses typically have more predictable and stable income and cash flows compared to our refining operations and we believe investors assign a higher value to such businesses.

MPLX is an important part of this strategy and the MarkWest Merger significantly expanded its midstream activities. MPLX will consider organic growth projects that provide attractive returns and cash flows both within its geographic footprint as well as in new regions. MPLX may pursue these opportunities as standalone projects, with MPC or with other parties. MPLX has identified a number of potential projects over the next several years. These primarily include projects to expand gathering, processing and fractionation infrastructure in the Marcellus region.

Our Speedway segment is also an important part of this strategy. We significantly expanded Speedway's presence along the East Coast and Southeast through the acquisition of Hess' Retail Operations and Related Assets in September 2014. We intend to continue growing Speedway's sales and profitability by focusing on organic growth through filling in voids in our existing markets by building new locations and by rebuilding or remodeling existing stores. We will also look to expand our presence by opportunistically acquiring high quality stores in new and existing markets. We have identified numerous opportunities for new convenience stores or store rebuilds in our existing market, with a continued focus in Pennsylvania and Tennessee, as well as

opportunities for growth in new markets including Georgia, South Carolina and the Florida panhandle. We also plan to capitalize on diesel demand growth by building out our network of commercial fueling lane locations within our core market which cater to local and regional transport fleets.

In keeping with our practice of evaluating shareholder value creation, a special committee of our board of directors, with the assistance of an independent financial advisor, will conduct a full and thorough review of strategic and financial alternatives for Speedway. We expect to provide an update on the review by mid-2017.

Maintain Long-Term Integrated Relationships with Our Producer Customers

MPLX's MarkWest subsidiary has developed long-term integrated relationships with its producer customers. These relationships are characterized by an intense focus on customer service and a deep understanding of producer customers' requirements coupled with the ability to increase the level of our midstream services in response to their midstream requirements. Through collaborative planning with these producer customers, MPLX's MarkWest subsidiary continues to construct high-quality midstream infrastructure and provide unique solutions that are critical to the ongoing success of producer customers' development plans. As a result of these efforts, MarkWest has been a top-rated midstream service provider in customer satisfaction since 2006, as determined by an independent research provider.

Pursue Margin Enhancing Investments in Refining to Deliver Top Quartile Refining Performance

Our refineries are well positioned to benefit from the growing crude oil and condensate production in North America, including the Bakken, Eagle Ford and Utica shale regions, along with the Canadian oil sands. We are also well positioned to export distillates, gasoline and other products.

We intend to enhance margins in our Refining & Marketing segment by realizing benefits from continuous process improvements and targeted investments in our refining operations. Over the next five years, we intend to create a world-class refining complex by investing approximately $1.5 billion in our Galveston Bay refinery through the STAR project. This investment will fully integrate our Galveston Bay and Texas City refineries and enable us to upgrade low value residual oil into higher value refined products and lower the refinery complex's cost of production. The project scope increases crude processing capacity, increases distillate and gas oil recovery and improves the refinery's overall reliability. We are also planning to expand the Galveston Bay refinery's product export capacity to reach high value markets. In addition, we are investing at our Garyville refinery to increase ULSD production due to strong long-term distillate demand expectations.

Sustain Focus on Disciplined Capital Allocation and Shareholder Returns

We intend to maintain our focus on a disciplined and balanced approach to capital allocation, including return of capital to shareholders, in a manner consistent with maintaining an investment-grade credit profile. Since becoming a stand-alone company in June 2011, our dividend has increased by a 28 percent compound annual growth rate and our board of directors has authorized share repurchases totaling $10 billion. Through open market purchases and two ASR programs, we repurchased 202 million shares of our common stock for approximately $7.44 billion, representing approximately 28 percent of our outstanding common shares when we became a stand-alone company in June 2011. After the effects of these repurchases, $2.56 billion of the $10 billion total authorization was available for future repurchases as of December 31, 2016. We achieved these shareholder returns while also investing in the business and maintaining an investment-grade credit profile.

Cash proceeds from the planned dropdowns and ongoing MPLX common unit distributions resulting from the dropdowns and other strategic actions are expected to fund the substantial ongoing return of capital to our shareholders in a manner consistent with maintaining an investment-grade credit profile.

Utilize and Enhance our High Quality Employee Workforce

We utilize our high quality employee workforce by continuing to leverage our commercial skills. In addition, we continue to enhance our workforce through selective hiring practices and effective training programs on safety, environmental stewardship and other professional and technical skills.

The above discussion contains forward-looking statements with respect to the business and operations of MPC, including our proposed strategic actions to enhance shareholder value, the ATM Program, our competitive strengths and business strategies, including our expected investments and the adequacy of our capital resources and liquidity. Factors that could impact our proposed strategic actions include, but are not limited to, the time, costs and ability to obtain regulatory or other approvals and consents and otherwise consummate the strategic actions discussed herein; the satisfaction or waiver of conditions in the agreements governing the strategic actions discussed herein; our ability to achieve the strategic and other objectives related to the strategic actions discussed herein; the impact of adverse market conditions affecting MPC's and MPLX's midstream businesses; adverse changes in laws including with respect to tax and regulatory matters and our inability to agree with the MPLX conflicts committee with respect to the timing of and value attributed to assets identified for dropdown. Factors that could affect the ATM Program and the timing of any issuances under the ATM Program include, but are not limited to, market conditions, availability of liquidity and the market price of MPLX's common units. Factors that could impact our competitive strengths and business strategies, including the adequacy of our capital resources and liquidity include, but are not limited to, changes to the expected construction costs and timing of projects; continued/further volatility in and/or degradation of market and industry conditions; the availability and pricing of crude oil and other feedstocks; slower growth in domestic and Canadian crude supply; completion of pipeline capacity to areas outside the U.S. Midwest; consumer demand for refined products; transportation logistics; the reliability of processing units and other equipment; MPC's ability to successfully implement growth opportunities; modifications to MPLX earnings and distribution growth objectives; compliance with federal and state environmental, economic, health and safety, energy and other policies and regulations, including the cost of compliance with the Renewable Fuel Standard, and/or enforcement actions initiated thereunder; changes to MPC's capital budget; other risk factors inherent to MPC's industry. These factors, among others, could cause actual results to differ materially from those set forth in the forward-looking statements. For additional information on forward-looking statements and risks that can affect our business, see "Disclosures Regarding Forward-Looking Statements" and Item 1A. Risk Factors in this Annual Report on Form 10-K.

Refining & Marketing

Refineries

We currently own and operate seven refineries in the Gulf Coast and Midwest regions of the United States with an aggregate crude oil refining capacity of 1,817 mbpcd. During 2016, our refineries processed 1,699 mbpd of crude oil and 151 mbpd of other charge and blendstocks. During 2015, our refineries processed 1,711 mbpd of crude oil and 177 mbpd of other charge and blendstocks. The table below sets forth the location, crude oil refining capacity, tank storage capacity and number of tanks for each of our refineries as of December 31, 2016.

Refinery	Crude Oil Refining Capacity (*mbpcd*)[(a)]	Tank Storage Capacity (*million barrels*)	Number of Tanks
Garyville, Louisiana	543	16.9	83
Galveston Bay, Texas City, Texas	459	16.2	157
Catlettsburg, Kentucky	273	5.2	120
Robinson, Illinois	231	6.0	92
Detroit, Michigan	132	6.7	87
Canton, Ohio	93	2.9	75
Texas City, Texas	86	3.9	56
Total	1,817	57.8	670

(a) Refining throughput can exceed crude oil capacity due to the processing of other charge and blendstocks in addition to crude oil and the timing of planned turnaround and major maintenance activity.

Our refineries include crude oil atmospheric and vacuum distillation, fluid catalytic cracking, hydrocracking, catalytic reforming, coking, desulfurization and sulfur recovery units. The refineries process a wide variety of condensate, light and heavy crude oils purchased from various domestic and foreign suppliers. We produce numerous refined products, ranging from transportation fuels, such as reformulated gasolines, blend-grade gasolines intended for blending with ethanol and ULSD fuel, to heavy fuel oil and asphalt. Additionally, we manufacture aromatics, propane, propylene and sulfur. See the Refined Product Marketing section for further information about the products we produce.

Our refineries are integrated with each other via pipelines, terminals and barges to maximize operating efficiency. The transportation links that connect our refineries allow the movement of intermediate products between refineries to optimize operations, produce higher margin products and efficiently utilize our processing capacity. For example, naphtha may be moved from Texas City to Robinson where excess reforming capacity is available. Also, shipping intermediate products between facilities during partial refinery shutdowns allows us to utilize processing capacity that is not directly affected by the shutdown work.

Garyville, Louisiana Refinery. Our Garyville, Louisiana refinery is located along the Mississippi River in southeastern Louisiana between New Orleans, Louisiana and Baton Rouge, Louisiana. The Garyville refinery is configured to process a wide variety of crude oils into gasoline, distillates, fuel-grade coke, asphalt, propane, polymer-grade propylene, heavy fuel oil, dry gas, slurry and sulfur. The refinery has access to the export market and multiple options to sell refined products. A major expansion project was completed in 2009 that increased Garyville's crude oil refining capacity, making it one of the largest refineries in the U.S. Our Garyville refinery has earned designation as an OSHA VPP Star site.

Galveston Bay, Texas City, Texas Refinery. Our Galveston Bay refinery, which we acquired on February 1, 2013, is located on the Texas Gulf Coast approximately 30 miles southeast of Houston, Texas. The refinery can process a wide variety of crude oils into gasoline, distillates, aromatics, heavy fuel oil, refinery-grade propylene, fuel-grade coke, dry gas and sulfur. The refinery has access to the export market and multiple options to sell refined products. Our cogeneration facility, which supplies the Galveston Bay refinery, currently has 1,055 megawatts of electrical production capacity and can produce 4.3 million pounds of steam per hour. Approximately 46 percent of the power generated in 2016 was used at the refinery, with the remaining electricity being sold into the electricity grid.

Catlettsburg, Kentucky Refinery. Our Catlettsburg, Kentucky refinery is located in northeastern Kentucky on the western bank of the Big Sandy River, near the confluence with the Ohio River. The Catlettsburg refinery processes sweet and sour crude oils into gasoline, distillates, asphalt, aromatics, refinery-grade propylene and propane. In the second quarter of 2015, we completed construction of a condensate splitter at our Catlettsburg refinery, which increased our capacity to process condensate from the Utica shale region.

Robinson, Illinois Refinery. Our Robinson, Illinois refinery is located in southeastern Illinois. The Robinson refinery processes sweet and sour crude oils into gasoline, distillates, propane, anode-grade coke, aromatics, fuel-grade coke and slurry. The Robinson refinery has earned designation as an OSHA VPP Star site.

Detroit, Michigan Refinery. Our Detroit, Michigan refinery is located in southwest Detroit. It is the only petroleum refinery currently operating in Michigan. The Detroit refinery processes sweet and heavy sour crude oils into gasoline, distillates, asphalt, fuel-grade coke, chemical-grade propylene, propane, slurry and sulfur. Our Detroit refinery earned designation as a OSHA VPP Star site in 2010. In the fourth quarter of 2012, we completed a heavy oil upgrading and expansion project that enabled the refinery to process up to an additional 80 mbpd of heavy sour crude oils, including Canadian crude oils.

Canton, Ohio Refinery. Our Canton, Ohio refinery is located approximately 60 miles south of Cleveland, Ohio. The Canton refinery processes sweet and sour crude oils, including production from the nearby Utica Shale, into gasoline, distillates, asphalt, roofing flux, propane, refinery-grade propylene and slurry. In December 2014, we completed construction of a condensate splitter at our Canton refinery, which increased our capacity to process condensate from the Utica shale region.

Texas City, Texas Refinery. Our Texas City, Texas refinery is located on the Texas Gulf Coast adjacent to our Galveston Bay refinery, approximately 30 miles southeast of Houston, Texas. The refinery processes light sweet crude oils into gasoline, chemical-grade propylene, propane, aromatics, dry gas and slurry. Our Texas City refinery earned designation as an OSHA VPP Star site in 2012.

As of December 31, 2016, our refineries had 22 rail loading racks and 28 truck loading racks and four of our refineries had a total of seven owned and 11 non-owned docks. Total throughput in 2016 was 91 mbpd for the refinery loading racks and 928 mbpd for the refinery docks.

Planned maintenance activities, or turnarounds, requiring temporary shutdown of certain refinery operating units, are periodically performed at each refinery. See Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations for additional detail.

Refined Product Yields

The following table sets forth our refinery production by product group for each of the last three years.

Refined Product Yields (*mbpd*)	2016	2015	2014
Gasoline	900	913	869
Distillates	617	603	580
Propane	35	36	35
Feedstocks and special products	241	281	276
Heavy fuel oil	32	31	25
Asphalt	58	55	54
Total	1,883	1,919	1,839

Crude Oil Supply

We obtain the crude oil we refine through negotiated term contracts and purchases or exchanges on the spot market. Our term contracts generally have market-related pricing provisions. The following table provides information on our sources of crude oil for each of the last three years. The crude oil sourced outside of North America was acquired from various foreign national oil companies, production companies and trading companies.

Sources of Crude Oil Refined (*mbpd*)	2016	2015	2014
United States	986	1,138	1,120
Canada	326	244	223
Middle East and other international	387	329	279
Total	1,699	1,711	1,622

Our refineries receive crude oil and other feedstocks and distribute our refined products through a variety of channels, including pipelines, trucks, railcars, ships and barges.

Renewable Fuels

We currently own a biofuel production facility in Cincinnati, Ohio that produces biodiesel, glycerin and other by-products. The capacity of the plant is approximately 60 million gallons per year.

We hold interests in ethanol production facilities in Albion, Michigan; Clymers, Indiana and Greenville, Ohio. These plants have a combined ethanol production capacity of 275 million gallons per year (18 mbpd) and are managed by a co-owner.

Refined Product Marketing

We believe we are one of the largest wholesale suppliers of gasoline and distillates to resellers and consumers within our 26-state market area. Independent retailers, wholesale customers, our Marathon brand jobbers and Speedway brand convenience stores, airlines, transportation companies and utilities comprise the core of our customer base. In addition, we sell gasoline, distillates and asphalt for export, primarily out of our Garyville and Galveston Bay refineries. The following table sets forth our refined product sales destined for export by product group for the past three years.

Refined Product Sales Destined for Export (*mbpd*)	2016	2015	2014
Gasoline	91	101	79
Distillates	199	214	191
Asphalt	6	4	5
Total	296	319	275

The following table sets forth, as a percentage of total refined product sales volume, the sales of refined products to our different customer types for the past three years.

Refined Product Sales by Customer Type	2016	2015	2014
Private-brand marketers, commercial and industrial customers, including spot market	69%	69%	73%
Marathon-branded independent entrepreneurs	14%	14%	15%
Speedway® convenience stores	17%	17%	12%

The following table sets forth the approximate number of retail outlets by state where independent entrepreneurs maintain Marathon-branded retail outlets, as of December 31, 2016.

State	Approximate Number of Marathon® Retail Outlets
Alabama	227
Florida	606
Georgia	281
Illinois	292
Indiana	640
Kentucky	583
Louisiana	2
Maryland	1
Michigan	761
Minnesota	47
Mississippi	79
North Carolina	220
Ohio	859
Pennsylvania	66
South Carolina	101
Tennessee	404
Virginia	121
West Virginia	117
Wisconsin	48
Total	5,455

The following table sets forth our refined product sales volumes by product group for each of the last three years.

Refined Product Sales by Product Group (*mbpd*)	2016	2015	2014
Gasoline	1,219	1,241	1,116
Distillates	676	667	623
Propane	35	36	34
Feedstocks and special products	231	258	268
Heavy fuel oil	35	30	28
Asphalt	63	57	56
Total	2,259	2,289	2,125

Gasoline and Distillates. We sell gasoline, gasoline blendstocks and distillates (including No. 1 and No. 2 fuel oils, jet fuel, kerosene and diesel fuel) to wholesale customers, Marathon-branded independent entrepreneurs and our Speedway® convenience stores and on the spot market. In addition, we sell diesel fuel and gasoline for export to international customers. We sold 50 percent of our gasoline sales volumes and 87 percent of our distillates sales volumes on a wholesale or spot market basis in 2016. The demand for gasoline and distillates is seasonal in many of our markets, with demand typically at its highest levels during the summer months.

We have blended ethanol into gasoline for more than 25 years and began expanding our blending program in 2007, in part due to federal regulations that require us to use specified volumes of renewable fuels. Ethanol volumes sold in blended gasoline were 84 mbpd in 2016, 85 mbpd in 2015 and 78 mbpd in 2014. We sell reformulated gasoline, which is also blended with ethanol, in 12 states in our marketing area. We also sell biodiesel-blended diesel fuel in 18 states in our marketing area. The future expansion or contraction of our ethanol and biodiesel blending programs will be driven by market economics and government regulations.

Propane. We produce propane at most of our refineries. Propane is primarily used for home heating and cooking, as a feedstock within the petrochemical industry, for grain drying and as a fuel for trucks and other vehicles. Our propane sales are typically split evenly between the home heating market and petrochemical consumers.

Feedstocks and Petrochemicals. We are a producer and marketer of feedstocks and petrochemicals. Product availability varies by refinery and includes platformate, alkylate, FCC unit gas, naptha, dry gas, propylene, raffinate, butane, benzene, xylene, molten sulfur, cumene and toluene. We market these products domestically to customers in the chemical, agricultural and fuel-blending industries. In addition, we produce fuel-grade coke at our Garyville, Detroit and Galveston Bay refineries, which is used for power generation and in miscellaneous industrial applications, and anode-grade coke at our Robinson refinery, which is used to make carbon anodes for the aluminum smelting industry. Our feedstocks and petrochemical sales decreased to 231 mbpd in 2016 from 258 mbpd in 2015 and decreased in 2015 from 268 mbpd in 2014. The decrease in 2016 was primarily due to more feedstocks used in production versus selling them on the spot market. The decrease in 2015 was primarily due to higher turnaround activity in 2014 resulting in more available feedstocks, more feedstocks used in production versus selling them on the spot market and market conditions in 2015.

Heavy Fuel Oil. We produce and market heavy residual fuel oil or related components, including slurry, at all of our refineries. Heavy residual fuel oil is primarily used in the utility and ship bunkering (fuel) industries, though there are other more specialized uses of the product.

Asphalt. We have refinery-based asphalt production capacity of up to 102 mbpcd, which includes asphalt cements, polymer-modified asphalt, emulsified asphalt, industrial asphalts and roofing flux. We have a broad customer base, including asphalt-paving contractors, government entities (states, counties, cities and townships) and asphalt roofing shingle manufacturers. We sell asphalt in the domestic and export wholesale markets via rail, barge and vessel.

Terminals

As of December 31, 2016, we owned and operated 61 light product and 18 asphalt terminals. Our light product and asphalt terminals averaged 1,429 mbpd and 31 mbpd of throughput in 2016, respectively. In addition, we distribute refined products through one leased light product terminal, two light product terminals in which we have partial ownership interests but do not operate and approximately 121 third-party light product and two third-party asphalt terminals in our market area. We have offered 62 of these light product terminals, which include virtually all of our owned and operated light product terminals as well as the one leased terminal and the two partially-owned terminals, to MPLX and expect this dropdown transaction to be completed in the first quarter of 2017. The following table sets forth additional details about our owned and operated terminals at December 31, 2016.

Owned and Operated Terminals	Number of Terminals	Tank Storage Capacity *(million barrels)*	Number of Tanks	Number of Loading Lanes
Light Product Terminals:				
Alabama	2	0.4	19	4
Florida	4	3.0	85	22
Georgia	4	0.9	39	9
Illinois	4	1.2	44	14
Indiana	6	2.9	76	17
Kentucky	6	2.3	69	25
Louisiana	1	0.1	9	2
Michigan	8	2.2	93	26
North Carolina	4	1.3	54	13
Ohio	13	3.8	148	32
Pennsylvania	1	0.3	13	2
South Carolina	1	0.3	9	3
Tennessee	4	1.0	43	12
West Virginia	2	0.1	9	2
Wisconsin	1	0.2	9	4
Subtotal light product terminals	61	20.0	719	187
Asphalt Terminals:				
Florida	1	0.2	4	3
Illinois	2	0.1	34	6
Indiana	2	0.4	23	6
Kentucky	4	0.5	57	14
Louisiana	1	0.1	11	2
Michigan	1	-	2	8
Ohio	4	2.0	69	13
Pennsylvania	1	0.5	16	8
Tennessee	2	0.5	44	8
Subtotal asphalt terminals	18	4.3	260	68
Total owned and operated terminals	79	24.3	979	255

Transportation – Truck and Rail

As of December 31, 2016, we owned 163 transport trucks and 180 trailers with an aggregate capacity of 1.6 million gallons for the movement of refined products and crude oil. In addition, we had 2,059 leased and 15 owned railcars of various sizes and capacities for movement and storage of refined products. The following table sets forth additional details about our railcars.

	Number of Railcars			
Class of Equipment	Owned	Leased	Total	Capacity per Railcar
General service tank cars	-	781	781	20,000-30,000 gallons
High pressure tank cars	-	984	984	33,500 gallons
Open-top hoppers	15	294	309	4,000 cubic feet
	15	2,059	2,074	

Speedway

Our Speedway segment sells gasoline, diesel and merchandise through convenience stores that it owns and operates under the Speedway brand. Speedway convenience stores offer a wide variety of merchandise, including prepared foods, beverages and non-food items. Speedway's Speedy Rewards® loyalty program has been a highly successful loyalty program since its inception in 2004, with a consistently growing base which averaged more than 5.7 million active members in 2016. Due to Speedway's ability to capture and analyze member-specific transactional data, Speedway is able to offer the Speedy Rewards® members discounts and promotions specific to their buying behavior. We believe Speedy Rewards® is a key reason customers choose Speedway over competitors and it continues to drive significant value for both Speedway and our Speedy Rewards® members.

The demand for gasoline is seasonal, with the highest demand usually occurring during the summer driving season. Margins from the sale of merchandise tend to be less volatile than margins from the retail sale of gasoline and diesel fuel. Merchandise margin as a percent of total gross margin for Speedway increased in 2016, primarily due to lower light product margins during the year. The following table sets forth Speedway merchandise statistics for the past three years.

Speedway Merchandise Statistics	2016	2015	2014
Merchandise sales (in millions)	$ 5,007	$ 4,879	$ 3,611
Merchandise gross margin (in millions)	1,435	1,368	975
Merchandise as a percent of total gross margin	56%	54%	57%

As of December 31, 2016, Speedway had 2,733 convenience stores in 21 states. The following table sets forth the number of convenience stores by state owned by our Speedway segment as of December 31, 2016.

State	Number of Convenience Stores[a]
Connecticut	1
Delaware	4
Florida	241
Georgia	1
Illinois	115
Indiana	309
Kentucky	147
Massachusetts	114
Michigan	303
New Hampshire	12
New Jersey	72
New York	238
North Carolina	278
Ohio	488
Pennsylvania	113
Rhode Island	20
South Carolina	52
Tennessee	38
Virginia	62
West Virginia	61
Wisconsin	64
Total	2,733

[a] Includes stores with commercial fueling lanes.

Speedway also owns a 29 percent interest in PFJ Southeast LLC ("PFJ Southeast"), which is a joint venture between Speedway and Pilot with 123 travel center locations primarily in the Southeast United States as of December 31, 2016.

As of December 31, 2016, Speedway owned 90 transport trucks and 83 trailers for the movement of gasoline and distillate.

Midstream

Following the MarkWest Merger, we changed the name of our Pipeline Transportation segment to the Midstream segment to reflect its expanded business activities. The Midstream segment includes the operations of MPLX and certain other related operations.

MPLX

MPLX is a diversified, growth-oriented publicly traded master limited partnership formed by us to own, operate, develop and acquire midstream energy infrastructure assets. On December 4, 2015, MPLX merged with MarkWest, whereby MarkWest became a wholly-owned subsidiary of MPLX. As of December 31, 2016, our ownership interest in MPLX was 25.5 percent, including our two percent general partner interest. This ownership percentage reflects the conversion of the MPLX Class B Units in July 2017 at 1.09 to 1.00.

As of December 31, 2016, MPLX assets, through its combination with MarkWest, included approximately 7,500 MMcf/d of natural gas processing capacity and 500 mbpd of NGL fractionation capacity and more than 5,600 miles of gas gathering and NGL pipelines.

MPLX assets as of December 31, 2016 also included 100 percent ownership of common carrier pipeline systems through Marathon Pipe Line LLC ("MPL") and Ohio River Pipe Line LLC ("ORPL"), and a one million barrel butane storage cavern in West Virginia. MPLX, through MPL and ORPL, owned or leased and operated 1,008 miles of common carrier crude oil lines and 1,958 miles of common carrier products lines located in nine states and five tank farms in Illinois and Indiana with available storage capacity of approximately five million barrels that is committed to MPC. In 2016, third parties generated 16 percent of the crude oil and refined product shipments on MPLX's common carrier pipelines, excluding volumes shipped by MPC under joint tariffs with third parties. These common carrier pipelines transported the volumes shown in the MPLX Pipeline Throughput information in the Midstream Operating Statistics table below for each of the last three years.

As of December 31, 2016, MPLX's marine transportation operations included 18 owned towboats, as well as 204 owned and 18 leased barges that transport refined products and crude oil on the Ohio, Mississippi and Illinois rivers and their tributaries and inter-coastal waterways. The following table sets forth additional details about MPLX's barges and towboats.

Class of Equipment	Number in Class	Capacity (thousand barrels)
Inland tank barges:[(a)]		
Less than 25,000 barrels	64	963
25,000 barrels and over	158	4,631
Total	222	5,594
Inland towboats:		
Less than 2,000 horsepower	2	
2,000 horsepower and over	16	
Total	18	

(a) All of our barges are double-hulled.

MPC-Retained Midstream Assets and Investments

We have ownership interests in several crude oil and products pipeline systems and pipeline companies which we retained at the formation of MPLX. We have offered certain of these assets to MPLX in a dropdown transaction we expect to be completed in the first quarter of 2017. MPC consolidated volumes transported through our common carrier pipelines, which include MPLX's pipelines and our undivided joint interests, are shown in the MPC Consolidated Pipeline Throughput information in the following table for each of the last three years.

The following table shows operating statistics for our Midstream segment.

Midstream Operating Statistics	2016	2015	2014
MPC Consolidated Pipeline Throughput (mbpd)			
Crude oil pipelines	1,402	1,277	1,241
Refined products pipelines	909	914	878
Total	2,311	2,191	2,119
MPLX Pipeline Throughput (mbpd) (included in volumes above)[a][b]			
Crude oil pipelines	1,088	1,061	1,041
Refined products pipelines	908	914	878
Total	1,996	1,975	1,919
Gathering system throughput (MMcf/d)[c]	3,275	3,075	-
Natural gas processed (MMcf/d)[c]	5,761	5,468	-
C2 (ethane) + NGLs fractionated (mbpd)[c]	335	307	-

(a) MPLX predecessor volumes reported in MPLX's filings include our undivided joint interest crude oil pipeline systems for periods prior to MPLX's initial public offering, which were not contributed to MPLX. The undivided joint interest volumes are not included above.

(b) Volumes represent 100 percent of the throughput through these pipelines.

(c) Beginning December 4, 2015, which was the effective date of the MarkWest Merger.

As of December 31, 2016, we have indirect ownership interests in two ocean vessel joint ventures with Crowley through our investment in Crowley Coastal Partners. These joint ventures operate and charter four Jones Act product tankers, most of which are leased to MPC, and own and operate three 750 Series ATB vessels that are leased to MPC. The following table sets forth additional details about our product tankers and ATB vessels.

Class of Equipment	Number in Class	Capacity (thousand barrels)
Jones Act product tankers[a]	4	1,320
750 Series ATB vessels[b]	3	990

(a) Represents ownership through our indirect noncontrolling interest in Crowley Ocean Partners.

(b) Represents ownership through our indirect noncontrolling interest in Crowley Blue Water Partners.

The locations and detailed information about our midstream assets are included under Item 2. Properties and are incorporated herein by reference.

Competition, Market Conditions and Seasonality

The downstream petroleum business is highly competitive, particularly with regard to accessing crude oil and other feedstock supply and the marketing of refined products. We compete with a large number of other companies to acquire crude oil for refinery processing and in the distribution and marketing of a full array of petroleum products. Based upon the "The Oil & Gas Journal 2016 Worldwide Refinery Survey," we ranked third among U.S. petroleum companies on the basis of U.S. crude oil refining capacity as of December 31, 2016.

We compete in four distinct markets for the sale of refined products – wholesale, spot, branded and retail distribution. We believe we compete with about 50 companies in the sale of refined products to wholesale marketing customers, including private-brand marketers and large commercial and industrial consumers; about 100 companies in the sale of refined products in the spot market; 12 refiners or marketers in the supply of refined

products to refiner-branded independent entrepreneurs; and approximately 850 retailers in the retail sale of refined products. In addition, we compete with producers and marketers in other industries that supply alternative forms of energy and fuels to satisfy the requirements of our industrial, commercial and retail consumers. We do not produce any of the crude oil we refine.

We also face strong competition for sales of retail gasoline, diesel fuel and merchandise. Our competitors include service stations and convenience stores operated by fully integrated major oil companies and their independent entrepreneurs and other well-recognized national or regional convenience stores and travel centers, often selling gasoline, diesel fuel and merchandise at competitive prices. Non-traditional retailers, such as supermarkets, club stores and mass merchants, have affected the convenience store industry with their entrance into sales of retail gasoline and diesel fuel. Energy Analysts International, Inc. estimated such retailers had approximately 15 percent of the U.S. gasoline market in mid-2016.

Our Midstream operations face competition for natural gas gathering, crude oil transportation and in obtaining natural gas supplies for our processing and related services; in obtaining unprocessed NGLs for gathering and fractionation; and in marketing our products and services. Competition for natural gas supplies is based primarily on the location of gas gathering facilities and gas processing plants, operating efficiency and reliability and the ability to obtain a satisfactory price for products recovered. Competitive factors affecting our fractionation services include availability of capacity, proximity to supply and industry marketing centers and cost efficiency and reliability of service. Competition for customers to purchase our natural gas and NGLs is based primarily on price, delivery capabilities, flexibility and maintenance of high-quality customer relationships. In addition, certain of our Midstream operations are highly regulated, which affects the rates that our common carrier pipelines can charge for transportation services and the return we obtain from such pipelines.

Market conditions in the oil and gas industry are cyclical and subject to global economic and political events and new and changing governmental regulations. Our operating results are affected by price changes in crude oil, natural gas and refined products, as well as changes in competitive conditions in the markets we serve. Price differentials between sweet and sour crude oils, WTI and LLS crude oils and other market structure differentials also affect our operating results.

Demand for gasoline, diesel fuel and asphalt is higher during the spring and summer months than during the winter months in most of our markets, primarily due to seasonal increases in highway traffic and construction. As a result, the operating results for each of our segments for the first and fourth quarters may be lower than for those in the second and third quarters of each calendar year.

Our Midstream segment can be affected by seasonal fluctuations in the demand for natural gas and NGLs and the related fluctuations in commodity prices caused by various factors such as changes in transportation and travel patterns and variations in weather patterns from year to year. In the northeast region, we could be particularly impacted by seasonality as the majority of its revenues are generated by NGL sales. However, we manage the seasonality impact through the execution of our marketing strategy. We have access to up to 50 million gallons of propane storage capacity in the northeast region provided by an arrangement with a third-party which provides us with flexibility to manage the seasonality impact. Overall, our exposure to the seasonal fluctuations in the commodity markets is declining due to our growth in fee-based business.

Environmental Matters

Our management is responsible for ensuring that our operating organizations maintain environmental compliance systems that support and foster our compliance with applicable laws and regulations, and for reviewing our overall environmental performance. We also have a Corporate Emergency Response Team that oversees our response to any major environmental or other emergency incident involving us or any of our facilities.

We believe it is likely that the scientific and political attention to issues concerning the extent and causes of climate change will continue, with the potential for further regulations that could affect our operations. Currently,

legislative and regulatory measures to address greenhouse gases are in various phases of review, discussion or implementation. The cost to comply with these laws and regulations cannot be estimated at this time, but could be significant. For additional information, see Item 1A. Risk Factors. We estimate and publicly report greenhouse gas emissions from our operations and products. Additionally, we continuously strive to improve operational and energy efficiencies through resource and energy conservation where practicable.

Our operations are subject to numerous other laws and regulations relating to the protection of the environment. Such laws and regulations include, among others, the Clean Air Act ("CAA") with respect to air emissions, the Clean Water Act ("CWA") with respect to water discharges, the Resource Conservation and Recovery Act ("RCRA") with respect to solid and hazardous waste treatment, storage and disposal, the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") with respect to releases and remediation of hazardous substances and the Oil Pollution Act of 1990 ("OPA-90") with respect to oil pollution and response. In addition, many states where we operate have similar laws. New laws are being enacted and regulations are being adopted on a continuing basis, and the costs of compliance with such new laws and regulations are very difficult to estimate until finalized.

For a discussion of environmental capital expenditures and costs of compliance for air, water, solid waste and remediation, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations-Environmental Matters and Compliance Costs.

Air

We are subject to many requirements in connection with air emissions from our operations. Internationally and domestically, emphasis has been placed on reducing greenhouse gas emissions. The U.S. pledge in 2009, as part of the Copenhagen Accord, to reduce greenhouse gas emissions 17 percent below 2005 levels by 2020 remains in effect and was reaffirmed in President Obama's 2013 Climate Action Plan. Although the United States signed the 2015 Paris Agreement on Climate Change, it does not legally require parties to the Agreement to reduce greenhouse gas emissions, and the United States' future activities in response to the Paris Agreement are unknown. In November 2016, the Obama administration released its strategy for "deep de-carbonization," which aims to reduce greenhouse gas emissions to 80 percent below 2005 levels by 2050. The U.S. climate change strategy and implementation of that strategy through legislation and regulation may change under President Trump's administration; therefore, the impact to our industry and operations due to greenhouse gas regulation is unknown at this time.

In 2009, the EPA issued an "endangerment finding" that greenhouse gas emissions contribute to air pollution that endangers public health and welfare. Related to the endangerment finding, in April 2010, the EPA finalized a greenhouse gas emission standard for mobile sources (cars and other light duty vehicles). The endangerment finding, the mobile source standard and the EPA's determination that greenhouse gases are subject to regulation under the Clean Air Act resulted in permitting of greenhouse gas emissions at stationary sources, but as a result of the EPA's "tailoring rule," permit applicability was limited to larger sources such as refineries. Legal challenges were filed against these EPA actions. In June 2014, the United States Supreme Court ruled that the Clean Air Act Prevention of Significant Deterioration program for new and modified major stationary sources is not triggered by greenhouse gas emissions alone. The United States Supreme Court did, however, uphold the requirement for new or modified stationary sources that will also emit a criteria pollutant to control greenhouse gas emissions through Best Available Control Technology. Implementing Best Available Control Technology may result in increased costs to our operations. A few MPC projects may trigger greenhouse gas permitting requirements but any additional capital spending will likely not be significant.

The EPA has finalized Source Performance Standards for greenhouse gas emissions for new and existing electric utility generating units. These standards could impact electric and natural gas rates for all our operations. Legal challenges have been filed by several states and by industry groups seeking to overturn the final rules. In February 2016, the United States Supreme Court stayed implementation of the standards for existing utility

generating units (also known as the Clean Power Plan) until complete disposition of the litigation. Congress may again also consider legislation on greenhouse gas emissions or a carbon tax. In the absence of federal legislation or regulation of greenhouse gas emissions, states may become more active in regulating greenhouse gas emissions. These measures include state actions to develop statewide or regional programs to impose emission reductions. These measures may also include low carbon fuel standards, such as the California program. In addition, private parties have sued utilities and other emitters of greenhouse gas emissions, but such suits have been largely unsuccessful. We have not been named in any of those lawsuits. Private parties have also sued federal and certain state governmental entities seeking additional greenhouse gas emission reductions beyond those currently being undertaken. In sum, requiring reductions in greenhouse gas emissions could result in increased costs to (i) operate and maintain our facilities, (ii) install new emission controls at our facilities and (iii) administer and manage any greenhouse gas emissions programs, including acquiring emission credits or allotments. These requirements may also significantly affect MPC's refinery operations and may have an indirect effect on our business, financial condition and results of operations. The extent and magnitude of the impact from greenhouse gas regulation or legislation cannot be reasonably estimated due to the uncertainty regarding the additional measures and how they will be implemented.

In 2013, the Obama administration made changes to the social cost of carbon ("SCC") estimate. The SCC was first issued in 2010. The SCC is to be used by the EPA and other federal agencies in regulatory cost-benefit analyses to take into account alleged broad economic consequences associated with changes to emissions of greenhouse gases. In 2013, the Obama administration significantly increased the estimate to $36 per ton. In response to the regulated community and Congress' critiques of how the SCC was developed, the Office of Management and Budget provided an opportunity to comment on the SCC, but ultimately did not make any significant revisions. In August 2016, the White House Council on Environmental Quality issued its final guidance to federal agencies on assessing a project's impact to climate change under the National Environmental Policy Act, by requiring an estimation of the greenhouse gas emissions from the project, including using the SCC when analyzing costs and benefits of a project. While the impact of a higher SCC in future regulations is not known at this time, it may result in increased costs to our operations. The EPA has also used an estimate of the social cost of methane in its regulatory impact analysis to justify regulating methane as a pollutant for new and modified sources in the oil and natural gas sector.

In 2015, the EPA finalized a revision to the National Ambient Air Quality Standards ("NAAQS") for ozone. The EPA lowered the primary ozone NAAQS from 75 ppb to 70 ppb. This revision initiates a multi-year process in which nonattainment designations will be made based on more recent ozone measurements that includes data from 2016. States will then propose and adopt, as necessary, new rules reducing emissions to meet the new standard. Currently, the EPA is in the process of implementing the 75 ppb ozone standard that the EPA had promulgated in March 2008. The impact of a stricter standard cannot be accurately estimated due to the present uncertainty regarding area nonattainment designations and the additional requirements that states may impose. Additionally, legal petitions challenging the revised ozone standard have been filed, adding uncertainty to the revised standard.

On September 29, 2015, the EPA signed the final regulations revising existing refinery air emissions standards. The revised regulations were published in the Federal Register on December 1, 2015. The revised rule requires additional controls, lower emission standards and ambient air monitoring. We do not anticipate that MPC's costs to comply with the revised regulations will be material to our results of operations or cash flows.

Water

We maintain numerous discharge permits as required under the National Pollutant Discharge Elimination System program of the CWA and have implemented systems to oversee our compliance with these permits. In addition, we are regulated under OPA-90, which among other things, requires the owner or operator of a tank vessel or a facility to maintain an emergency plan to respond to releases of oil or hazardous substances. OPA-90 also requires the responsible company to pay resulting removal costs and damages and provides for civil penalties and

criminal sanctions for violations of its provisions. We operate tank vessels and facilities from which spills of oil and hazardous substances could occur. We have implemented emergency oil response plans for all of our components and facilities covered by OPA-90 and we have established Spill Prevention, Control and Countermeasures plans for all facilities subject to such requirements.

Additionally, OPA-90 requires that new tank vessels entering or operating in U.S. waters be double-hulled and that existing tank vessels that are not double-hulled be retrofitted or removed from U.S. service. All barges used for river transport of our raw materials and refined products meet the double-hulled requirements of OPA-90. Some coastal states in which we operate have passed state laws similar to OPA-90, but with expanded liability provisions, that include provisions for cargo owner responsibility as well as ship owner and operator responsibility.

In June 2015, the EPA and the United States Army Corps of Engineers finalized significant changes to the definition of the term “waters of the United States” (“WOTUS”) used in numerous programs under the CWA. This final rulemaking is referred to as the Clean Water Rule. The Clean Water Rule has been challenged in multiple federal courts by many states, trade groups, and other interested parties, and in October 2015, a United States Court of Appeals issued a nationwide stay of the Clean Water Rule. The Clean Water Rule, as written, expands permitting, planning and reporting obligations and may extend the timing to secure permits for pipeline and fixed asset construction and maintenance activities. The Clean Water Rule does contain new language intended to address concerns that the proposed rule included storm water conveyances and storage structures as WOTUS, and we continue to review how that new language will apply under specific circumstances. Court challenges of the Clean Water Rule will continue through 2017.

In 2015, the EPA issued its intent to review the CWA categorical effluent limitation guidelines (“ELG”) for the petroleum refining sector. During 2016, the EPA prepared a draft information request (“ICR”) requesting significant wastewater and treatment process details and may perform sampling of effluent at one or more of our refineries. The ICR is expected to issue in 2017. The EPA has indicated they believe there have been significant changes in the characteristics of wastewaters generated within refining operations that warrant the review. Specific targets for the review are the impacts of processing heavier crude oils and the transfer of air pollutants to wastewater when air pollution abatement devices are in use. A similar project, initiated in 2007 for steam power generation with similar attributes, resulted in a significant change in the treatment requirements for coal-fired power plants. The refining sector ELG review has the potential to result in a similar impact. We are actively engaged in the planning process for the 2017 information request and effluent sampling campaign and engaged with The American Petroleum Institute and the American Fuel & Petrochemical Manufacturers associations on this matter. The typical life-cycle for an ELG review from the intent to review to issuance of a final rule that would require upgrades is seven years. The impact of an ELG review cannot be accurately estimated at this time.

Solid Waste

We continue to seek methods to minimize the generation of hazardous wastes in our operations. RCRA establishes standards for the management of solid and hazardous wastes. Besides affecting waste disposal practices, RCRA also addresses the environmental effects of certain past waste disposal operations, the recycling of wastes and the regulation of USTs containing regulated substances. We have ongoing RCRA treatment and disposal operations at two of our facilities and primarily utilize offsite third-party treatment and disposal facilities. Ongoing RCRA-related costs, however, are not expected to be material to our results of operations or cash flows.

Remediation

We own or operate, or have owned or operated, certain convenience stores and other locations where, during the normal course of operations, releases of refined products from USTs have occurred. Federal and state laws require that contamination caused by such releases at these sites be assessed and remediated to meet applicable

standards. The enforcement of the UST regulations under RCRA has been delegated to the states, which administer their own UST programs. Our obligation to remediate such contamination varies, depending on the extent of the releases and the stringency of the applicable state laws and regulations. A portion of these remediation costs may be recoverable from the appropriate state UST reimbursement funds once the applicable deductibles have been satisfied. We also have ongoing remediation projects at a number of our current and former refinery, terminal and pipeline locations. Penalties or other sanctions may be imposed for noncompliance.

Claims under CERCLA and similar state acts have been raised with respect to the clean-up of various waste disposal and other sites. CERCLA is intended to facilitate the clean-up of hazardous substances without regard to fault. Potentially responsible parties for each site include present and former owners and operators of, transporters to and generators of the hazardous substances at the site. Liability is strict and can be joint and several. Because of various factors including the difficulty of identifying the responsible parties for any particular site, the complexity of determining the relative liability among them, the uncertainty as to the most desirable remediation techniques and the amount of damages and clean-up costs and the time period during which such costs may be incurred, we are unable to reasonably estimate our ultimate cost of compliance with CERCLA; however, we do not believe such costs will be material to our business, financial condition, results of operations or cash flows.

Mileage Standards, Renewable Fuels and Other Fuels Requirements

In 2007, the U.S. Congress passed the Energy Independence and Security Act ("EISA"), which, among other things, set a target of 35 miles per gallon for the combined fleet of cars and light trucks in the United States by model year 2020, and contains the RFS2. In August 2012, the EPA and the National Highway Traffic Safety Administration ("NHTSA") jointly adopted regulations that establish average industry fleet fuel economy standards for passenger cars and light trucks of up to 41 miles per gallon by model year 2021 and average fleet fuel economy standards of up to 49.7 miles per gallon by model year 2025. The standards from 2022 to 2025 are the government's current estimate but will require further rulemaking by the NHTSA. The EPA in the fourth quarter of 2016 determined that its proposed targets for GHG reduction are achievable and did not adjust its 2022 to 2025 estimated standards. New or alternative transportation fuels such as compressed natural gas could also pose a competitive threat to our operations.

The RFS2 required the total volume of renewable transportation fuels sold or introduced annually in the U.S. to reach 22.25 billion gallons in 2016, 24.0 billion gallons in 2017 and increase to 36.0 billion gallons by 2022. Within the total volume of renewable fuel, EISA established an advanced biofuel volume of 7.25 billion gallons in 2016, 9.0 billion gallons in 2017 and increasing to 21.0 billion gallons in 2022. Subsets within the advanced biofuel volume include biomass-based diesel, which was set as at least 1.0 billion gallons in 2014 through 2022 (to be determined by the EPA through rulemaking), and cellulosic biofuel, which was set at 4.25 billion gallons in 2016, 5.5 billion gallons in 2017 and increasing to 16.0 billion gallons in 2022.

On November 30, 2015, the EPA finalized the renewable fuel standards for the years of 2014, 2015 and 2016 as well as the biomass-based diesel standard for 2017. Because the EPA missed the statutory deadlines for establishing the standards for 2014 and 2015, the EPA used its waiver authority under EISA to set the standards using actual consumption data obtained from EPA's tracking system, EMTS. The EPA's use of its general waiver authority to reduce the statutory volumes has been challenged in court. A court decision vacating the 2014-2016 renewable fuel standards on the basis that the EPA unreasonably exercised its general waiver authority could increase our cost of compliance with the Renewable Fuels Standards and be detrimental to the RIN market.

On November 23, 2016, the EPA finalized the renewable fuel standards for the year 2017 and the biomass based diesel standard for 2018. The EPA used its cellulosic waiver authority to reduce the standards from the statutory amounts to the following: 19.28 billion gallons total renewable fuel; 4.28 billion gallons advanced biofuel; and 311 million gallons cellulosic ethanol. The EPA increased the biomass based diesel standard for 2018 to

2.0 billion gallons. In the near term, the RFS2 will be satisfied primarily with ethanol blended into gasoline. Vehicle, regulatory and infrastructure constraints limit the blending of significantly more than 10 percent ethanol into gasoline ("E10"). The volumes for 2016 and 2017 result in the ethanol content of gasoline exceeding the E10 blendwall, which will require obligated parties to either sell E15 or FlexFuel at levels that exceed historical levels or retire carryover RINs that had been generated in prior years. On October 13, 2016, the EPA issued a partial waver decision under the CAA to allow for an increase in the amount of ethanol permitted to be blended into gasoline from E10 to E15 for 2007 and newer light-duty motor vehicles. On January 21, 2011, the EPA issued a second waver for the use of E15 in vehicles model year 2001-2006. There are numerous issues, including state and federal regulatory issues, which need to be addressed before E15 can be marketed for use in traditional gasoline engines. Additionally, there are infrastructure compatibility issues and vehicle manufacturer warranty concerns related to E15 usage. Neither E15 nor FlexFuel has been readily accepted by the consumer.

With potentially uncertain supplies, the advanced biofuels programs may present specific challenges in that we may have to enter into arrangements with other parties or purchase credits from the EPA to meet our obligations to use advanced biofuels, including biomass-based diesel and cellulosic biofuel.

We made investments in infrastructure capable of expanding biodiesel blending capability to help comply with the biodiesel RFS2 requirement by buying and blending biodiesel into our refined diesel product, and by buying needed biodiesel RINs in the EPA-created biodiesel RINs market. On April 1, 2014, we purchased a facility in Cincinnati, Ohio, which currently produces biodiesel, glycerin and other by-products. The capacity of the plant is approximately 60 million gallons per year. As a producer of biodiesel, we now generate RINs, thereby reducing our reliance on the external RIN market.

On November 10, 2016, the EPA proposed to deny petitions requesting that the point of obligation for the RFS be moved to the terminal rack. The EPA is accepting comments on its proposed denial. Should the EPA decide that its proposal was incorrect and move the point of obligation, we could be subject to increased costs and compliance uncertainties

The RFS2 has required, and may in the future continue to require, additional capital expenditures or expenses by us to accommodate increased renewable fuels use. We may experience a decrease in demand for refined petroleum products due to an increase in combined fleet mileage or due to refined petroleum products being replaced by renewable fuels.

On March 3, 2014, the EPA signed the final Tier 3 fuel standards. The final Tier 3 fuel standards require, among other things, a lower annual average sulfur level in gasoline to no more than 10 ppm beginning in calendar year 2017. In addition, gasoline refiners and importers may not exceed a maximum per-gallon sulfur standard of 80 ppm while retailers may not exceed a maximum per-gallon sulfur standard of 95 ppm. We anticipate that we will spend approximately $650 million between 2014 and 2019 to comply with these standards, which includes estimated capital expenditures of approximately $200 million in 2017.

Trademarks, Patents and Licenses

Our Marathon trademark is material to the conduct of our refining and marketing operations, and our Speedway trademark is material to the conduct of our retail marketing operations. We currently hold a number of U.S. and foreign patents and have various pending patent applications. Although in the aggregate our patents and licenses are important to us, we do not regard any single patent or license or group of related patents or licenses as critical or essential to our business as a whole. In general, we depend on our technological capabilities and the application of know-how rather than patents and licenses in the conduct of our operations.

Employees

We had approximately 44,460 regular full-time and part-time employees as of December 31, 2016, which includes approximately 32,880 employees of Speedway.

Certain hourly employees at our Canton, Catlettsburg, Galveston Bay and Texas City refineries are represented by the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers Union under labor agreements that are due to expire in 2019. The International Brotherhood of Teamsters represents certain hourly employees at our Detroit refinery under a labor agreement that is also scheduled to expire in 2019. In addition, they represent certain hourly employees at Speedway under agreements that cover certain outlets in New York and New Jersey that expire on March 14, 2019 and June 30, 2019, respectively.

Executive and Corporate Officers of the Registrant

The executive and corporate officers of MPC are as follows:

Name	Age as of January 31, 2017	Position with MPC
Gary R. Heminger	63	Chairman, President and Chief Executive Officer
Molly R. Benson[(a)]	50	Vice President, Corporate Secretary and Chief Compliance Officer
Raymond L. Brooks	56	Senior Vice President, Refining
Suzanne Gagle	51	Vice President, General Counsel
Timothy T. Griffith	47	Senior Vice President and Chief Financial Officer
John R. Haley[(a)]	60	Vice President, Tax
Thomas Kaczynski	55	Vice President, Finance and Treasurer
Thomas M. Kelley	57	Senior Vice President, Marketing
Anthony R. Kenney	63	President, Speedway LLC
Rodney P. Nichols	64	Senior Vice President, Human Resources and Administrative Services
Randy S. Nickerson	55	Executive Vice President, Corporate Strategy
C. Michael Palmer	63	Senior Vice President, Supply, Distribution and Planning
John J. Quaid	45	Vice President and Controller
David R. Sauber[(a)]	53	Vice President, Human Resources and Labor Relations
John S. Swearingen	57	Senior Vice President, Transportation and Logistics
Donald C. Templin	53	Executive Vice President
Donald W. Wehrly[(a)]	57	Vice President and Chief Information Officer
David L. Whikehart[(a)]	57	Vice President, Environment, Safety and Corporate Affairs

(a) Corporate officer.

Mr. Heminger was appointed president and chief executive officer effective June 30, 2011, and to his current position in 2016. Prior to this appointment, Mr. Heminger was president of Marathon Petroleum Company LP (formerly known as Marathon Ashland Petroleum LLC and Marathon Petroleum Company LLC), currently a wholly-owned subsidiary of MPC and prior to the Spinoff, a wholly-owned subsidiary of Marathon Oil. He assumed responsibility as president of Marathon Petroleum Company LP in September 2001.

Ms. Benson was appointed vice president, corporate secretary and chief compliance officer effective March 1, 2016. Prior to this appointment, Ms. Benson was assistant general counsel, corporate and finance beginning in April 2012, group counsel, corporate and finance beginning in 2011, group counsel, North American production for Marathon Oil Company beginning in 2010 and senior attorney, downstream business beginning in 2006.

Mr. Brooks was appointed senior vice president, Refining effective March 1, 2016. Prior to this appointment, Mr. Brooks was general manager, Galveston Bay refinery beginning in February 2013, general manager, Robinson refinery beginning in 2010 and general manager, St. Paul Park, Minnesota refinery (no longer owned by MPC) beginning in 2006.

Ms. Gagle was appointed vice president and general counsel effective March 1, 2016. Prior to this appointment, Ms. Gagle was assistant general counsel, litigation and Human Resources beginning in April 2011, senior group counsel, downstream operations beginning in 2010 and group counsel, litigation, beginning in 2003.

Mr. Griffith was appointed senior vice president and chief financial officer effective March 3, 2015. Prior to this appointment, Mr. Griffith served as vice president, Finance and Investor Relations, and treasurer beginning in January 2014. He was vice president of Finance and treasurer beginning in August 2011. Previously, Mr. Griffith was vice president Investor Relations and treasurer of Smurfit-Stone Container Corporation, a packaging manufacturer, in St. Louis, Missouri, from 2008 to 2011.

Mr. Haley was appointed vice president, Tax effective June 1, 2013. Prior to this appointment, Mr. Haley served as director of Tax beginning in July 2011 and as a tax manager for Marathon Oil Company beginning in 1996.

Mr. Kaczynski was appointed vice president, Finance and treasurer effective August 31, 2015. Prior to this appointment, Mr. Kaczynski was vice president and treasurer of Goodyear Tire and Rubber Company beginning in 2014. Previously, he served as vice president, Investor Relations, of Goodyear Tire and Rubber Company beginning in 2013, vice president and corporate treasurer of Affinia Group Inc. beginning in 2005, and director of affiliate finance and of capital markets and bank relations of Visteon Corporation beginning in 2000.

Mr. Kelley was appointed senior vice president, Marketing effective June 30, 2011. Prior to this appointment, Mr. Kelley served in the same capacity for Marathon Petroleum Company LP beginning in January 2010. Previously, he served as director of Crude Supply and Logistics for Marathon Petroleum Company LP beginning in January 2008, and as a Brand Marketing manager for eight years prior to that.

Mr. Kenney has served as president of Speedway LLC since August 2005. Prior to this appointment, Mr. Kenney served as vice president, Business Development of Marathon Ashland Petroleum LLC beginning in 2001.

Mr. Nichols was appointed senior vice president, Human Resources and Administrative Services effective March 1, 2012. Prior to this appointment, Mr. Nichols served as vice president, Human Resources and Administrative Services beginning on June 30, 2011 and served in the same capacity for Marathon Petroleum Company LP beginning in April 1998.

Mr. Nickerson was appointed executive vice president, Corporate Strategy effective December 4, 2015 at the time of the MarkWest Merger. Prior to this appointment, Mr. Nickerson served as chief commercial officer of MarkWest beginning in 2006 and senior vice president, Corporate Development beginning in 2003.

Mr. Palmer was appointed senior vice president, Supply, Distribution and Planning effective June 30, 2011. Prior to this appointment, Mr. Palmer served as vice president, Supply, Distribution and Planning for Marathon Petroleum Company LP beginning in June 2010. He served as Crude Supply and Logistics director for Marathon Petroleum Company LP beginning in February 2010, and as senior vice president, Oil Sands Operations and Commercial Activities for Marathon Oil Canada Corporation beginning in 2007.

Mr. Quaid was appointed vice president and controller effective June 23, 2014. Prior to this appointment, Mr. Quaid was vice president of Iron Ore at United States Steel Corporation ("U. S. Steel"), an integrated steel producer, beginning in January 2014. Previously, Mr. Quaid served in various leadership positions at U. S. Steel since February 2002, including vice president and treasurer beginning in August 2011, controller, North American Flat-Rolled Operations beginning in July 2010 and assistant corporate controller beginning in 2008.

Mr. Sauber was appointed vice president, Human Resources and Labor Relations effective February 1, 2017. Prior to this appointment, Mr. Sauber served as vice president, Human Resources Policy, Benefits and Services of Shell Oil Company beginning in 2013. Previously, Mr. Sauber served in various leadership positions at Shell Oil Company since 2000 including regional Human Resources manager for U.S. manufacturing in 2009.

Mr. Swearingen was appointed senior vice president, Transportation and Logistics effective March 3, 2015. Prior to this appointment, Mr. Swearingen served as vice president of Health, Environmental, Safety & Security beginning June 30, 2011. Previously, he was president of Marathon Pipe Line LLC beginning in 2009 and the Illinois Refining Division manager beginning in November 2001.

Mr. Templin was appointed executive vice president effective January 1, 2016. Prior to this appointment, Mr. Templin served as executive vice president, Supply, Transportation and Marketing beginning March 3, 2015 and senior vice president and chief financial officer beginning on June 30, 2011. Previously, he was a partner at PricewaterhouseCoopers LLP, an audit, tax and advisory services provider, with various audit and management responsibilities beginning in 1996.

Mr. Wehrly was appointed vice president and chief information officer effective June 30, 2011. Prior to this appointment, Mr. Wehrly was the manager of Information Technology Services for Marathon Petroleum Company LP beginning in 2003.

Mr. Whikehart was appointed vice president, Environmental, Safety and Corporate Affairs effective February 29, 2016. Prior to this appointment, Mr. Whikehart served as vice president, Corporate Planning, Government & Public Affairs effective January 1, 2016 and director, Product Supply and Optimization beginning in March 2011. Previously, Mr. Whikehart served as director, Climate Change and Carbon Management beginning in 2010 and director, Business Development beginning in 2008.

Available Information

General information about MPC, including Corporate Governance Principles and Charters for the Audit Committee, Compensation Committee and Corporate Governance and Nominating Committee, can be found at http://ir.marathonpetroleum.com. In addition, our Code of Business Conduct and Code of Ethics for Senior Financial Officers are also available in this same location.

MPC uses its website, www.marathonpetroleum.com, as a channel for routine distribution of important information, including news releases, analyst presentations, financial information and market data. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as any amendments and exhibits to those reports, are available free of charge through our website as soon as reasonably practicable after the reports are filed or furnished with the SEC. These documents are also available in hard copy, free of charge, by contacting our Investor Relations office. In addition, our website allows investors and other interested persons to sign up to automatically receive email alerts when we post news releases and financial information on our website. Information contained on our website is not incorporated into this Annual Report on Form 10-K or other securities filings.

Item 1A. Risk Factors

You should carefully consider each of the following risks and all of the other information contained in this Annual Report on Form 10-K in evaluating us and our common stock. Some of these risks relate principally to our business and the industry in which we operate, while others relate to the ownership of our common stock.

Our business, financial condition, results of operations or cash flows could be materially and adversely affected by any of these risks, and, as a result, the trading price of our common stock could decline.

Risks Relating to our Business

A substantial or extended decline in refining and marketing gross margins would reduce our operating results and cash flows and could materially and adversely impact our future rate of growth, the carrying value of our assets and our ability to execute share repurchases and continue the payment of our base dividend.

Our operating results, cash flows, future rate of growth, the carrying value of our assets and our ability to execute share repurchases and continue the payment of our base dividend are highly dependent on the margins we realize on our refined products. The measure of the difference between market prices for refined products and crude oil, or crack spread, is commonly used by the industry as a proxy for refining and marketing gross margins. Historically, refining and marketing gross margins have been volatile, and we believe they will continue to be volatile. Our margins from the sale of gasoline and other refined products are influenced by a number of conditions, including the price of crude oil. We do not produce crude oil and must purchase all of the crude oil we refine. The price of crude oil and the price at which we can sell our refined products may fluctuate independently due to a variety of regional and global market conditions. Any overall change in crack spreads will impact our refining and marketing gross margins. Many of the factors influencing a change in crack spreads and refining and marketing gross margins are beyond our control. These factors include:

- worldwide and domestic supplies of and demand for crude oil and refined products;
- the cost of crude oil and other feedstocks to be manufactured into refined products;
- the prices realized for refined products;
- utilization rates of refineries;
- natural gas and electricity supply costs incurred by refineries;
- the ability of the members of OPEC to agree to and maintain production controls;
- political instability or armed conflict in oil and natural gas producing regions;
- local weather conditions;
- seasonality of demand in our marketing area due to increased highway traffic in the spring and summer months;
- natural disasters such as hurricanes and tornadoes;
- the price and availability of alternative and competing forms of energy;
- domestic and foreign governmental regulations and taxes; and
- local, regional, national and worldwide economic conditions.

Some of these factors can vary by region and may change quickly, adding to market volatility, while others may have longer-term effects. The longer-term effects of these and other factors on refining and marketing gross margins are uncertain. We purchase our crude oil and other refinery feedstocks weeks before we refine them and

sell the refined products. Price level changes during the period between purchasing feedstocks and selling the refined products from these feedstocks could have a significant effect on our financial results. We also purchase refined products manufactured by others for resale to our customers. Price changes during the periods between purchasing and reselling those refined products also could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Lower refining and marketing gross margins may reduce the amount of refined products we produce, which may reduce our revenues, income from operations and cash flows. Significant reductions in refining and marketing gross margins could require us to reduce our capital expenditures, impair the carrying value of our assets (such as property, plant and equipment, inventory or goodwill), decrease or eliminate our share repurchase activity and our base dividend.

Our operations are subject to business interruptions and casualty losses. Failure to manage risks associated with business interruptions could adversely impact our operations, financial condition, results of operations and cash flows.

Our operations are subject to business interruptions due to scheduled refinery turnarounds, unplanned maintenance or unplanned events such as explosions, fires, refinery or pipeline releases or other incidents, power outages, severe weather, labor disputes, or other natural or man-made disasters, such as acts of terrorism. For example, pipelines provide a nearly-exclusive form of transportation of crude oil to, or refined products from, some of our refineries. In such instances, a prolonged interruption in service of such a pipeline could materially and adversely affect the operations, profitability and cash flows of the impacted refinery.

Explosions, fires, refinery or pipeline releases or other incidents involving our assets or operations could result in serious personal injury or loss of human life, significant damage to property and equipment, environmental pollution, impairment of operations and substantial losses to us. Damages resulting from an incident involving any of our assets or operations may result in our being named as a defendant in one or more lawsuits asserting potentially substantial claims or in our being assessed potentially substantial fines by governmental authorities.

We do not insure against all potential losses, and, therefore, our business, financial condition, results of operations and cash flows could be adversely affected by unexpected liabilities and increased costs.

We maintain insurance coverage in amounts we believe to be prudent against many, but not all, potential liabilities arising from operating hazards. Uninsured liabilities arising from operating hazards, including but not limited to, explosions, fires, refinery or pipeline releases or other incidents involving our assets or operations, could reduce the funds available to us for capital and investment spending and could have a material adverse effect on our business, financial condition, results of operations and cash flows. Historically, we also have maintained insurance coverage for physical damage and resulting business interruption to our major facilities, with significant self-insured retentions. In the future, we may not be able to maintain insurance of the types and amounts we desire at reasonable rates.

We rely on the performance of our information technology systems, the failure of which could have an adverse effect on our business, financial condition, results of operations and cash flows.

We are heavily dependent on our information technology systems and network infrastructure and maintain and rely upon certain critical information systems for the effective operation of our business. These information systems involve data network and telecommunications, Internet access and website functionality, and various computer hardware equipment and software applications, including those that are critical to the safe operation of our business. These systems and infrastructure are subject to damage or interruption from a number of potential sources including natural disasters, software viruses or other malware, power failures, cyber-attacks and other events. We also face various other cyber-security threats, including threats to gain unauthorized access to sensitive information or to render data or systems unusable. To protect against such attempts of unauthorized

access or attack, we have implemented infrastructure protection technologies and disaster recovery plans. There can be no guarantee such plans, to the extent they are in place, will be effective.

The retail market is diverse and highly competitive, and very aggressive competition could adversely impact our business.

We face strong competition in the market for the sale of retail gasoline, diesel fuel and merchandise. Our competitors include outlets owned or operated by fully integrated major oil companies or their dealers or jobbers, and other well-recognized national or regional retail outlets, often selling gasoline or merchandise at very competitive prices. Several non-traditional retailers such as supermarkets, club stores and mass merchants are in the retail business. These non-traditional gasoline retailers have obtained a significant share of the transportation fuels market and we expect their market share to grow. Because of their diversity, integration of operations, experienced management and greater financial resources, these companies may be better able to withstand volatile market conditions or levels of low or no profitability in the retail segment of the market. In addition, these retailers may use promotional pricing or discounts, both at the pump and in the store, to encourage in-store merchandise sales. These activities by our competitors could pressure us to offer similar discounts, adversely affecting our profit margins. Additionally, the loss of market share by our convenience stores to these and other retailers relating to either gasoline or merchandise could have a material adverse effect on our business, financial condition, results of operations and cash flows.

The development, availability and marketing of alternative and competing fuels in the retail market could adversely impact our business. We compete with other industries that provide alternative means to satisfy the energy and fuel needs of our consumers. Increased competition from these alternatives as a result of governmental regulations, technological advances and consumer demand could have an impact on pricing and demand for our products and our profitability.

We are subject to interruptions of supply and increased costs as a result of our reliance on third-party transportation of crude oil and refined products.

We utilize the services of third parties to transport crude oil and refined products to and from our refineries. In addition to our own operational risks discussed above, we could experience interruptions of supply or increases in costs to deliver refined products to market if the ability of the pipelines, railways or vessels to transport crude oil or refined products is disrupted because of weather events, accidents, governmental regulations or third-party actions. A prolonged disruption of the ability of the pipelines, railways or vessels to transport crude oil or refined products to or from one or more of our refineries could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may incur losses to our business as a result of our forward-contract activities and derivative transactions.

We currently use commodity derivative instruments, and we expect to enter into these types of transactions in the future. A failure of a futures commission merchant or counterparty to perform would affect these transactions. To the extent the instruments we utilize to manage these exposures are not effective, we may incur losses related to the ineffective portion of the derivative transaction or costs related to moving the derivative positions to another futures commission merchant or counterparty once a failure has occurred.

We have significant debt obligations; therefore, our business, financial condition, results of operations and cash flows could be harmed by a deterioration of our credit profile, a decrease in debt capacity or unsecured commercial credit available to us, or by factors adversely affecting credit markets generally.

At December 31, 2016, our total debt obligations for borrowed money and capital lease obligations were $11.1 billion, including $4.9 billion of obligations of MPLX. We may incur substantial additional debt obligations in the future.

Our indebtedness may impose various restrictions and covenants on us that could have material adverse consequences, including:

- increasing our vulnerability to changing economic, regulatory and industry conditions;
- limiting our ability to compete and our flexibility in planning for, or reacting to, changes in our business and the industry;
- limiting our ability to pay dividends to our shareholders;
- limiting our ability to borrow additional funds; and
- requiring us to dedicate a substantial portion of our cash flow from operations to payments on our debt, thereby reducing funds available for working capital, capital expenditures, acquisitions, share repurchases, dividends and other purposes.

A decrease in our debt or commercial credit capacity, including unsecured credit extended by third-party suppliers, or a deterioration in our credit profile could increase our costs of borrowing money and/or limit our access to the capital markets and commercial credit, which could materially and adversely affect our business, financial condition, results of operations and cash flows.

We have a trade receivables securitization facility that provides liquidity of up to $750 million depending on the amount of eligible domestic trade accounts receivables. In periods of lower prices, we may not have sufficient eligible accounts receivables to support full availability of this facility.

Historic or current operations could subject us to significant legal liability or restrict our ability to operate.

We currently are defending litigation and anticipate we will be required to defend new litigation in the future. Our operations, including those of MPLX, and those of our predecessors could expose us to litigation and civil claims by private plaintiffs for alleged damages related to contamination of the environment or personal injuries caused by releases of hazardous substances from our facilities, products liability, consumer credit or privacy laws, product pricing or antitrust laws or any other laws or regulations that apply to our operations. While an adverse outcome in most litigation matters would not be expected to be material to us, in class-action litigation, large classes of plaintiffs may allege damages relating to extended periods of time or other alleged facts and circumstances that could increase the amount of potential damages. Attorneys general and other government officials may pursue litigation in which they seek to recover civil damages from companies on behalf of a state or its citizens for a variety of claims, including violation of consumer protection and product pricing laws or natural resources damages. We are defending litigation of that type and anticipate that we will be required to defend new litigation of that type in the future. If we are not able to successfully defend such litigation, it may result in liability to our company that could materially and adversely affect our business, financial condition, results of operations and cash flows. We do not have insurance covering all of these potential liabilities. In addition to substantial liability, plaintiffs in litigation may also seek injunctive relief which, if imposed, could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

A portion of our workforce is unionized, and we may face labor disruptions that could materially and adversely affect our business, financial condition, results of operations and cash flows.

Approximately 36 percent of our refining employees are covered by collective bargaining agreements. Certain hourly employees at our Canton, Catlettsburg, Galveston Bay and Texas City refineries are represented by the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers Union under labor agreements that are due to expire in 2019. The International Brotherhood of Teamsters represents certain hourly employees at our Detroit refinery under a labor agreement that is also scheduled to expire in 2019. In addition, they represent certain hourly employees at Speedway under agreements that cover certain outlets in

New York and New Jersey that expire on March 14, 2019 and June 30, 2019, respectively. These contracts may be renewed at an increased cost to us. In addition, we have experienced, or may experience, work stoppages as a result of labor disagreements. Any prolonged work stoppages disrupting operations could have a material adverse effect on our business, financial condition, results of operations and cash flows.

One of our subsidiaries acts as the general partner of a publicly traded master limited partnership, MPLX, which may involve a greater exposure to certain legal liabilities than existed under our historic business operations.

One of our subsidiaries acts as the general partner of MPLX, a publicly traded master limited partnership. Our control of the general partner of MPLX may increase the possibility of claims of breach of fiduciary duties including claims of conflicts of interest related to MPLX. Any liability resulting from such claims could have a material adverse effect on our future business, financial condition, results of operations and cash flows.

If foreign investment in us or MPLX exceeds certain levels, MPLX could be prohibited from operating inland river vessels, which could materially and adversely affect our business, financial condition, results of operations and cash flows.

The Shipping Act of 1916 and Merchant Marine Act of 1920, which we refer to collectively as the Maritime Laws, generally require that vessels engaged in U.S. coastwise trade be owned by U.S. citizens. Among other requirements to establish citizenship, entities that own such vessels must be owned at least 75 percent by U.S. citizens. If we fail to maintain compliance with the Maritime Laws, MPLX would be prohibited from operating vessels in the U.S. inland waters. Such a prohibition could materially and adversely affect our business, financial condition, results of operations and cash flows.

We are subject to certain continuing contingent liabilities of Marathon Oil relating to taxes and other matters and to potential liabilities pursuant to the tax sharing agreement and separation and distribution agreement we entered into with Marathon Oil that could materially and adversely affect our business, financial condition, results of operations and cash flows.

Although the Spinoff occurred in mid-2011, certain liabilities of Marathon Oil could become our obligations. For example, under the Internal Revenue Code of 1986 (the "Code") and related rules and regulations, each corporation that was a member of the Marathon Oil consolidated tax reporting group during any taxable period or portion of any taxable period ending on or before the effective time of the Spinoff is jointly and severally liable for the federal income tax liability of the entire Marathon Oil consolidated tax reporting group for that taxable period. In connection with the Spinoff, we entered into a tax sharing agreement with Marathon Oil that allocates the responsibility for prior period taxes of the Marathon Oil consolidated tax reporting group between us and Marathon Oil. However, if Marathon Oil is unable to pay any prior period taxes for which it is responsible, we could be required to pay the entire amount of such taxes. Other provisions of federal law establish similar liability for other matters, including laws governing tax-qualified pension plans as well as other contingent liabilities.

Also pursuant to the tax sharing agreement, following the Spinoff we are responsible generally for all taxes attributable to us or any of our subsidiaries, whether accruing before, on or after the Spinoff. We also agreed to be responsible for, and indemnify Marathon Oil with respect to, all taxes arising as a result of the Spinoff (or certain internal restructuring transactions) failing to qualify as transactions under Sections 368(a) and 355 of the Code for U.S. federal income tax purposes to the extent such tax liability arises as a result of any breach of any representation, warranty, covenant or other obligation by us or certain affiliates made in connection with the issuance of the private letter ruling relating to the Spinoff or in the tax sharing agreement. In addition, we agreed to indemnify Marathon Oil for specified tax-related liabilities associated with our 2005 acquisition of the minority interest in our refining joint venture from Ashland Inc. Our indemnification obligations to Marathon Oil and its subsidiaries, officers and directors are not limited or subject to any cap. If we are required to indemnify

Marathon Oil and its subsidiaries and their respective officers and directors under the tax sharing agreement, we may be subject to substantial liabilities. At this time, we cannot precisely quantify the amount of these liabilities that have been assumed pursuant to the tax sharing agreement, and there can be no assurances as to their final amounts.

Also, in connection with the Spinoff, we entered into a separation and distribution agreement with Marathon Oil that provides for, among other things, the principal corporate transactions that were required to affect the Spinoff, certain conditions to the Spinoff and provisions governing the relationship between our company and Marathon Oil with respect to and resulting from the Spinoff. Among other things, the separation and distribution agreement provides for indemnification obligations designed to make us financially responsible for substantially all liabilities that may exist relating to our downstream business activities, whether incurred prior to or after the Spinoff, as well as certain obligations of Marathon Oil assumed by us. Our obligations to indemnify Marathon Oil under the circumstances set forth in the separation and distribution agreement could subject us to substantial liabilities. Marathon Oil also agreed to indemnify us for certain liabilities. However, third parties could seek to hold us responsible for any of the liabilities retained by Marathon Oil, and there can be no assurance that the indemnity from Marathon Oil will be sufficient to protect us against the full amount of such liabilities, that Marathon Oil will be able to fully satisfy its indemnification obligations or that Marathon Oil's insurers will cover us for liabilities associated with occurrences prior to the Spinoff. Moreover, even if we ultimately succeed in recovering from Marathon Oil or its insurers any amounts for which we are held liable, we may be temporarily required to bear these losses ourselves. The tax liabilities and underlying liabilities in the event Marathon Oil is unable to satisfy its indemnification obligations described in this paragraph could have a material adverse effect on our business, financial condition, results of operation and cash flows.

We may not realize the growth opportunities and commercial synergies that are anticipated from the MarkWest Merger.

The benefits that are expected to result from the MarkWest Merger will depend, in part, on MPLX's ability to realize the anticipated growth opportunities and commercial synergies as a result of the MarkWest Merger. MPLX's success in realizing these growth opportunities and commercial synergies, and the timing of this realization, depends on the successful integration of MPLX and MarkWest. There is a significant degree of difficulty and management distraction inherent in the process of integrating an acquisition as sizable as MarkWest. The process of integrating operations could cause an interruption of, or loss of momentum in, the activities of MPLX and MarkWest. Members of our senior management may be required to devote considerable amounts of time to this integration process, which will decrease the time they will have to manage our company, maintain relationships with employees, customers or suppliers, attract new customers and develop new strategies. If senior management is not able to effectively manage the integration process, or if any significant business activities are interrupted as a result of the integration process, our business could suffer. There can be no assurance that MPLX will successfully or cost-effectively integrate MarkWest. The failure to do so could have a material adverse effect on our business, financial condition, and results of operations.

Even if MPLX is able to integrate MarkWest successfully, this integration may not result in the realization of the full benefits of the growth opportunities and commercial synergies that we currently expect from this integration, and we cannot guarantee that these benefits will be achieved within anticipated time frames or at all. For example, MPLX may not be able to eliminate duplicative costs. Moreover, MPLX may incur substantial expenses in connection with the integration of MarkWest. While it is anticipated that certain expenses will be incurred to achieve commercial synergies, such expenses are difficult to estimate accurately, and may exceed current estimates. Accordingly, the benefits from the MarkWest Merger may be offset by costs incurred to, or delays in, integrating the businesses.

Significant acquisitions in the future will involve the integration of new assets or businesses and present substantial risks that could adversely affect our business, financial conditions, results of operations and cash flows.

Significant future transactions involving the addition of new assets or businesses will present potential risks, which may include, among others:

- Inaccurate assumptions about future synergies, revenues, capital expenditures and operating costs;
- An inability to successfully integrate assets or businesses we acquire;
- A decrease in our liquidity resulting from using a portion of our available cash or borrowing capacity under our revolving credit agreement to finance transactions;
- A significant increase in our interest expense or financial leverage if we incur additional debt to finance transactions;
- The assumption of unknown environmental and other liabilities, losses or costs for which we are not indemnified or for which our indemnity is inadequate;
- The diversion of management's attention from other business concerns; and
- The incurrence of other significant charges, such as impairment of goodwill or other intangible assets, asset devaluation or restructuring charges.

A significant decrease or delay in oil and natural gas production in MPLX's areas of operation, whether due to sustained declines in oil, natural gas and NGL prices, natural declines in well production, or otherwise, may adversely affect MPLX's business, results of operations and financial condition, and could reduce MPLX's ability to make distributions to us.

A significant portion of MPLX's operations are dependent upon production from oil and natural gas reserves and wells, which will naturally decline over time, which means that MPLX's cash flows associated with these wells will also decline over time. To maintain or increase throughput levels and the utilization rate of MPLX's facilities, MPLX must continually obtain new oil, natural gas, NGL and refined product supplies, which depends in part on the level of successful drilling activity near its facilities.

We have no control over the level of drilling activity in the areas of MPLX's operations, the amount of reserves associated with the wells or the rate at which production from a well will decline. In addition, we have no control over producers or their production decisions, which are affected by, among other things, prevailing and projected energy prices, drilling costs per Mcf or barrel, demand for hydrocarbons, operational challenges, access to downstream markets, the level of reserves, geological considerations, governmental regulations and the availability and cost of capital. Because of these factors, even if new oil or natural gas reserves are discovered in areas served by MPLX assets, producers may choose not to develop those reserves. If MPLX is not able to obtain new supplies of oil or natural gas to replace the natural decline in volumes from existing wells, throughput on MPLX pipelines and the utilization rates of MPLX facilities would decline, which could have a material adverse effect on MPLX's business, results of operations and financial condition and could reduce MPLX's ability to make distributions to us.

Decreases in energy prices can decrease drilling activity, production rates and investments by third parties in the development of new oil and natural gas reserves. The prices for oil, natural gas and NGLs depend upon factors beyond our control, including global and local demand, production levels, changes in interstate pipeline gas quality specifications, imports and exports, seasonality and weather conditions, economic and political conditions domestically and internationally and governmental regulations. Sustained periods of low prices could result in producers also significantly curtailing or limiting their oil and gas drilling operations which could substantially delay the production and delivery of volumes of oil, gas and NGLs to MPLX's facilities and adversely affect MPLX's revenues and cash available for distribution to us. This impact may also be exacerbated due to the extent

of MPLX's commodity-based contracts, which are more directly impacted by changes in gas and NGL prices than its fee-based contracts due to frac spread exposure and may result in operating losses when natural gas becomes more expensive on a Btu equivalent basis than NGL products. In addition, MPLX's purchase and resale of gas and NGLs in the ordinary course exposes MPLX to significant risk of volatility in gas or NGL prices due to the potential difference in the time of the purchases and sales and the potential difference in the price associated with each transaction, and direct exposure may also occur naturally as a result of MPLX's production processes. The significant fluctuation and decline in natural gas, NGL and oil prices currently occurring has adversely impacted MPLX's unit price, thereby increasing its distribution yield and cost of capital. Such impacts could adversely impact MPLX's ability to execute its long-term organic growth projects, satisfy obligations to its customers and make distributions to unitholders at intended levels, and may also result in non-cash impairments of long-lived assets or goodwill or other-than-temporary non-cash impairments of our equity method investments.

Our recently announced strategic actions designed to enhance shareholder value may not deliver the anticipated benefits.

In January 2017, we announced updates to our previously announced strategic actions designed to enhance shareholder value, including the significant acceleration of dropdowns of midstream assets into MPLX and the expected exchange of our economic interests in the general partner, including incentive distribution rights, for newly issued MPLX common units in conjunction with the completion of such dropdowns. We may not be able to achieve the anticipated benefits of these actions as we may not be able to implement the announced strategic actions due to: the inability to agree with the MPLX conflicts committee with respect to the value attributed to assets identified for dropdown; the adequacy of MPLX's capital and liquidity, including, but not limited to, MPLX's access to debt to fund the anticipated dropdowns on commercially reasonable terms; and the time, cost and ability to obtain requisite approvals and regulatory clearances, including tax clearance. In addition, the market price of our common stock could decline if securities or industry analysts or our investors disagree with these strategic actions or the way we implement such actions. Accordingly, even if we are able to implement some or all of the strategic actions successfully, there is no assurance that these actions will be reflected in the market price of our stock to the extent currently anticipated by management.

Significant stockholders may attempt to effect changes at our company or acquire control over our company, which could impact the pursuit of business strategies and adversely affect our results of operations and financial condition.

Our stockholders may from time to time engage in proxy solicitations, advance stockholder proposals or otherwise attempt to affect changes or acquire control over our company. Campaigns by stockholders to effect changes at publicly traded companies are sometimes led by investors seeking to increase short-term stockholder value through actions such as financial restructuring, increased debt, special dividends, stock repurchases or sales of assets or the entire company. Responding to proxy contests and other actions by activist stockholders can be costly and time-consuming and could divert the attention of our board of directors and senior management from the management of our operations and the pursuit of our business strategies. As a result, stockholder campaigns could adversely affect our results of operations and financial condition.

Risks Relating to Our Industry

Changes in environmental or other laws or regulations may reduce our refining and marketing gross margin and may result in substantial capital expenditures and operating costs that could materially and adversely affect our business, financial condition, results of operations and cash flows.

Various laws and regulations are expected to impose increasingly stringent and costly requirements on our operations, which may reduce our refining and marketing gross margin. Laws and regulations expected to become more stringent relate to the following:

- the emission or discharge of materials into the environment,

- solid and hazardous waste management,
- pollution prevention,
- greenhouse gas emissions,
- characteristics and composition of gasoline and diesel fuels,
- public and employee safety and health, and
- facility security.

The specific impact of laws and regulations on us and our competitors may vary depending on a number of factors, including the age and location of operating facilities, marketing areas, crude oil and feedstock sources and production processes. We may be required to make expenditures to modify operations, install pollution control equipment, perform site cleanups or curtail operations that could materially and adversely affect our business, financial condition, results of operations and cash flows.

Because the issue of climate change continues to receive scientific and political attention, there is the potential for further laws and regulations that could affect our operations. The U.S. pledge in 2009, as part of the Copenhagen Accord, to reduce greenhouse gas emissions 17 percent below 2005 levels by 2020 remains in effect and was reaffirmed in the President's 2013 Climate Action Plan. The 2015 Paris UN Climate Change Conference Agreement aims to hold the increase in the global average temperature to well below two degrees Celsius above pre-industrial levels. In November 2016, the Obama administration released its strategy for "deep de-carbonization," which aims to reduce greenhouse gas emissions to 80 percent below 2005 levels by 2050. The U.S. climate change strategy and implementation of that strategy through legislation and regulation may change under the new administration; therefore, the impact to our industry and operations due to greenhouse gas regulation is unknown at this time.

In October 2015, the EPA finalized regulations to reduce carbon emissions from new, modified, and reconstructed power plants (new source performance standards) and from existing power plants (existing source performance standards; also known as the Clean Power Plan). Through the regulations, the EPA is requiring a reduction in nationwide carbon emissions from the power generation sector by 32 percent below 2005 levels. These standards could increase our electricity costs and potentially reduce the reliability of our electricity supply. In February 2016, the U.S. Supreme Court stayed implementation of the Clean Power Plan until the legal challenge filed by several states and industry could be heard by the courts.

The Obama administration developed the social cost of carbon ("SCC"), which is to be used by the EPA and other federal agencies in regulatory cost-benefit analyses to take into account alleged broad economic consequences associated with changes to emissions of greenhouse gases. The SCC was first issued in 2010. In 2013, the Obama administration significantly increased the estimate to $36 per ton. In response to the regulated community and Congress' critiques of how the SCC was developed, the Office of Management and Budget ("OMB") provided an opportunity to comment on the SCC. In July 2015, the OMB issued a response to comments and a revised technical support document explaining adjustments to the SCC calculations. Additionally, in August 2016, the White House Council on Environmental Quality issued its final guidance to federal agencies on assessing a project's impact to climate change under the National Environmental Policy Act by estimating the greenhouse gas emissions from the project, including using the SCC when analyzing costs and benefits of a project. While the impact of a higher SCC in future regulations is not known at this time, it may result in increased costs to our operations.

An article on the social cost of methane has also been published and was used by the EPA in its regulatory impact analysis of the proposed emission standards for new and modified sources in the oil and natural gas sector. These regulations were proposed pursuant to President Obama's Strategy to Reduce Methane Emissions as part of the Administration's efforts to reduce methane emissions from the oil and gas sector by up to

45 percent from 2012 levels by 2025. The finalization of these regulations could directly impact MPLX by creating delays in the construction and installation of new facilities due to more stringent permitting requirements, increasing costs to reduce GHG emissions or requiring aggregation of emissions from separate facilities for permitting purposes. These regulations may also impact us by increasing the costs of domestic crude supplies.

In the absence of federal legislation or regulation of greenhouse gas emissions, states may become more active in regulating greenhouse gas emissions. These measures include state actions to develop statewide or regional programs to impose emission reductions. These measures may also include low carbon fuel standards, such as the California program. In addition, private party litigation is pending against federal and certain state governmental entities seeking additional greenhouse gas emission reductions beyond those currently being undertaken. These actions could result in increased costs to operate and maintain our facilities, capital expenditures to install new emission controls and costs to administer any carbon trading or tax programs implemented. Although uncertain, these developments could increase our costs, reduce the demand for the products we sell and create delays in our obtaining air pollution permits for new or modified facilities.

In October 2015, the EPA reduced the primary (health) ozone National Ambient Air Quality Standards ("NAAQS") to 70 ppb from the prior ozone level of 75 ppb. The EPA is expected to finalize new ozone attainment and nonattainment designations by late 2017, using 2014-2016 air quality monitor data. The lower primary ozone standard may not by attainable in some areas and could result in the cancellation or delay of capital projects at our facilities or increased costs related to an increase in the production of low Reid vapor pressure (RVP) gasoline.

The EISA establishes increases in fuel mileage standards and contains a second Renewable Fuel Standard commonly referred to as RFS2. Increases in fuel mileage standards and the increased use of renewable fuels (including ethanol and advanced biofuels) may reduce demand for refined products. Governmental regulations encouraging the use of new or alternative fuels could also pose a competitive threat to our operations. Specifically, the RFS2 required the total volume of renewable transportation fuels sold or introduced annually in the U.S. to reach 36.0 billion gallons by 2022. The RFS2 presents production and logistics challenges for both the renewable fuels and petroleum refining industries, and may continue to require additional capital expenditures or expenses by us to accommodate increased renewable fuels use. Gasoline consumption has been lower than forecasted by the EPA, which has led to concerns that the renewable fuel volumes may not be met. The 2017 renewable fuel standards were finalized and published on November 23, 2016. The final standards are lower than the statutory requirements but nevertheless result in volumes that breach the ethanol "blendwall." The advanced biofuels program, a subset of the RFS2 requirements, creates uncertainties and presents challenges of supply, and may require that we and other refiners and other obligated parties purchase credits from the EPA to meet our obligations.

Tax incentives and other subsidies have also made renewable fuels more competitive with refined products than they otherwise would have been, which may further reduce refined product margins. The tax incentives and subsidies are causing uncertainties because they have expired and been reinstituted retroactively. The biodiesel credit, for example, expired at the end of 2016 and there is uncertainty if it will be reinstituted.

On March 3, 2014, the EPA signed the final Tier 3 fuel standards. The final Tier 3 fuel standards require, among other things, a lower annual average sulfur level in gasoline to no more than 10 parts ppm beginning in calendar year 2017. In addition, gasoline refiners and importers may not exceed a maximum per-gallon sulfur standard of 80 ppm, while retailers may not exceed a maximum per-gallon sulfur standard of 95 ppm. We anticipate that we will spend an estimated $650 million between 2014 and 2019 for capital expenditures necessary to comply with these standards, which includes estimated capital expenditures of approximately $200 million in 2017.

Federal, state and local legislation and regulatory initiatives relating to hydraulic fracturing could delay or impede producer's gas production or result in reduced volumes available for MPLX to gather, process and

fractionate. MPLX does not conduct hydraulic fracturing operations, but it does provide gathering, processing and fractionation services with respect to natural gas and natural gas liquids produced by its customers as a result of such operations. If federal, state or local laws or regulations that significantly restrict hydraulic fracturing are adopted, such legal requirements could make it more difficult to complete natural gas wells in shale formations and increase producers' costs of compliance.

Severe weather events may adversely affect our facilities and ongoing operations.

For a variety of reasons, natural and/or anthropogenic, some members of the scientific community believe that climate changes could occur that could have significant physical effects, such as increased frequency and severity of storms, droughts and floods and other climatic events; if any such effects were to occur, they could have an adverse effect on our assets and operations.

Plans we may have to expand existing assets or construct new assets are subject to risks associated with societal and political pressures and other forms of opposition to the future development, transportation and use of carbon-based fuels. Such risks could adversely impact our business and ability to realize certain growth strategies.

Our anticipated growth and planned expenditures are based upon the assumption that societal sentiment will continue to enable and existing regulations will remain intact to allow for the future development, transportation and use of carbon-based fuels. A portion of our growth strategy is dependent on our ability to expand existing assets and to construct additional assets. However, policy decisions relating to the production, refining, transportation and marketing of carbon-based fuels are subject to political pressures and the influence of environmental and other special interest groups. The construction of new refinery processing units or crude oil or refined products pipelines, or the extension or expansion of existing assets, involve numerous political and legal uncertainties, many of which may cause significant delays or cost increases and most of which are beyond our control. Delays or cost increases related to capital spending programs involving engineering, procurement and construction of facilities (including improvements and repairs to our existing facilities) could adversely affect our ability to achieve forecasted internal rates of return and operating results, thereby limiting our ability to grow and generate cash flows.

Large capital projects can take many years to complete, and market conditions could deteriorate significantly between the project approval date and the project startup date, negatively impacting project returns. If we are unable to complete capital projects at their expected costs and in a timely manner, or if the market conditions assumed in our project economics deteriorate, our business, financial condition, results of operations and cash flows could be materially and adversely affected.

Delays or cost increases related to capital spending programs involving engineering, procurement and construction of facilities could materially adversely affect our ability to achieve forecasted internal rates of return and operating results. Delays in making required changes or upgrades to our facilities could subject us to fines or penalties as well as affect our ability to supply certain products we produce. Such delays or cost increases may arise as a result of unpredictable factors, many of which are beyond our control, including:

- denial of or delay in receiving requisite regulatory approvals and/or permits;
- unplanned increases in the cost of construction materials or labor;
- disruptions in transportation of components or construction materials;
- adverse weather conditions, natural disasters or other events (such as equipment malfunctions, explosions, fires or spills) affecting our facilities, or those of vendors or suppliers;
- shortages of sufficiently skilled labor, or labor disagreements resulting in unplanned work stoppages;
- market-related increases in a project's debt or equity financing costs; and
- nonperformance by, or disputes with, vendors, suppliers, contractors or subcontractors.

Any one or more of these factors could have a significant impact on our ongoing capital projects. If we were unable to make up the delays associated with such factors or to recover the related costs, or if market conditions change, it could materially and adversely affect our business, financial condition, results of operations and cash flows.

The availability of crude oil and increases in crude oil prices may reduce profitability and refining and marketing gross margins.

The profitability of our operations depends largely on the difference between the cost of crude oil and other feedstocks we refine and the selling prices we obtain for refined products. A portion of our crude oil is purchased from various foreign national oil companies, producing companies and trading companies, including suppliers from Canada, the Middle East and various other international locations. The market for crude oil and other feedstocks is largely a world market. We are, therefore, subject to the attendant political, geographic and economic risks of such a market. If one or more major supply sources were temporarily or permanently eliminated, we believe adequate alternative supplies of crude oil would be available, but it is possible we would be unable to find alternative sources of supply. If we are unable to obtain adequate crude oil volumes or are able to obtain such volumes only at unfavorable prices, our operations, sales of refined products and refining and marketing gross margins could be adversely affected, materially and adversely impacting our business, financial condition, results of operations and cash flows.

Worldwide political and economic developments could materially and adversely impact our business, financial condition, results of operations and cash flows.

In addition to impacting crude oil and other feedstock supplies, political and economic factors in global markets could have a material adverse effect on us in other ways. Hostilities in the Middle East or the occurrence or threat of future terrorist attacks could adversely affect the economies of the U.S. and other developed countries. A lower level of economic activity could result in a decline in energy consumption, which could cause our revenues and margins to decline and limit our future growth prospects. These risks could lead to increased volatility in prices for refined products, NGLs and natural gas. Additionally, these risks could increase instability in the financial and insurance markets and make it more difficult and/or costly for us to access capital and to obtain the insurance coverage that we consider adequate. Additionally, tax policy, legislative or regulatory action and commercial restrictions could reduce our operating profitability. For example, the U.S. government could prevent or restrict exports of refined products, NGLs, natural gas or the conduct of business with certain foreign countries.

Compliance with and changes in tax laws could materially and adversely impact our financial condition, results of operations and cash flows.

We are subject to extensive tax liabilities, including federal and state income taxes and transactional taxes such as excise, sales and use, payroll, franchise, withholding and property taxes. New tax laws and regulations and changes in existing tax laws and regulations could result in increased expenditures by us for tax liabilities in the future and could materially and adversely impact our financial condition, results of operations and cash flows. For example, the U.S. House of Representatives Republican leadership released a tax reform Blueprint proposing the replacement of the current corporate income tax with a destination-based cash flow tax. Because the value of our crude oil imports exceed the value of our refined product exports, this proposal could have a material adverse effect on our U.S. income tax liabilities. Additionally, many tax liabilities are subject to periodic audits by taxing authorities, and such audits could subject us to interest and penalties.

Terrorist attacks aimed at our facilities or that impact our customers or the markets we serve could adversely affect our business.

The U.S. government has issued warnings that energy assets in general, including the nation's refining, pipeline and terminal infrastructure, may be future targets of terrorist organizations. The threat of terrorist attacks has

subjected our operations to increased risks. Any future terrorist attacks on our facilities, those of our customers and, in some cases, those of other pipelines, could have a material adverse effect on our business. Similarly, any future terrorist attacks that severely disrupt the markets we serve could materially and adversely affect our results of operations, financial position and cash flows.

Risks Relating to Ownership of Our Common Stock

Provisions in our corporate governance documents could operate to delay or prevent a change in control of our company, dilute the voting power or reduce the value of our capital stock or affect its liquidity.

The existence of some provisions within our restated certificate of incorporation and amended and restated bylaws could discourage, delay or prevent a change in control of us that a stockholder may consider favorable. These include provisions:

- providing that our board of directors fixes the number of members of the board;
- providing for the division of our board of directors into three classes with staggered terms;
- providing that only our board of directors may fill board vacancies;
- limiting who may call special meetings of stockholders;
- prohibiting stockholder action by written consent, thereby requiring stockholder action to be taken at a meeting of the stockholders;
- establishing advance notice requirements for nominations of candidates for election to our board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings;
- establishing supermajority vote requirements for certain amendments to our restated certificate of incorporation and stockholder proposals for amendments to our amended and restated bylaws;
- providing that our directors may only be removed for cause;
- authorizing a large number of shares of common stock that are not yet issued, which would allow our board of directors to issue shares to persons friendly to current management, thereby protecting the continuity of our management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us; and
- authorizing the issuance of "blank check" preferred stock, which could be issued by our board of directors to increase the number of outstanding shares and thwart a takeover attempt.

We believe these provisions protect our stockholders from coercive or otherwise unfair takeover tactics by requiring potential acquirers to negotiate with our board of directors and by providing our board of directors time to assess any acquisition proposal, and are not intended to make us immune from takeovers. However, these provisions apply even if the offer may be considered beneficial by some stockholders and could delay or prevent an acquisition.

Our restated certificate of incorporation also authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designation, powers, preferences and relative, participating, optional and other special rights, including preferences over our common stock respecting dividends and distributions, as our board of directors generally may determine. The terms of one or more classes or series of preferred stock could dilute the voting power or reduce the value of our common stock. For example, we could grant holders of preferred stock the right to elect some number of our board of directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we could assign to holders of preferred stock could affect the residual value of our common stock.

Finally, to facilitate compliance with the Maritime Laws, our restated certificate of incorporation limits the aggregate percentage ownership by non-U.S. citizens of our common stock or any other class of our capital stock to 23 percent of the outstanding shares. We may prohibit transfers that would cause ownership of our common stock or any other class of our capital stock by non-U.S. citizens to exceed 23 percent. Our restated certificate of incorporation also authorizes us to effect any and all measures necessary or desirable to monitor and limit foreign ownership of our common stock or any other class of our capital stock. These limitations could have an adverse impact on the liquidity of the market for our common stock if holders are unable to transfer shares to non-U.S. citizens due to the limitations on ownership by non-U.S. citizens. Any such limitation on the liquidity of the market for our common stock could adversely impact the market price of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

The location and general character of our refineries, convenience stores and other important physical properties have been described by segment under Item 1. Business and are incorporated herein by reference. The plants and facilities have been constructed or acquired over a period of years and vary in age and operating efficiency. In addition, we believe that our properties and facilities are adequate for our operations and that our facilities are adequately maintained. As of December 31, 2016, we were the lessee under a number of cancellable and noncancellable leases for certain properties, including land and building space, office equipment, storage facilities and transportation equipment. See Item 8. Financial Statements and Supplementary Data – Note 24 for additional information regarding our leases.

MPLX

The following tables set forth certain information relating to our crude and products pipeline systems, storage assets, gas processing facilities, fractionation facilities, natural gas gathering systems and NGL pipelines as of December 31, 2016.

Pipeline System or Storage Asset	Origin	Destination	Diameter *(inches)*	Length *(miles)*	Capacity[a]	Associated MPC refinery
Crude oil pipeline systems (mbpd):						
Patoka, IL to Lima, OH crude system	Patoka, IL	Lima, OH	20"-22"	304	267	Detroit, Canton
Catlettsburg, KY and Robinson, IL crude system	Patoka, IL	Catlettsburg, KY & Robinson, IL	20"-24"	484	515	Catlettsburg, Robinson
Detroit, MI crude system[b]	Samaria & Romulus, MI	Detroit, MI	16"	61	197	Detroit
Wood River, IL to Patoka, IL crude system[b]	Wood River & Roxana, IL	Patoka, IL	12"-22"	115	314	All Midwest refineries
Inactive pipelines				44	N/A	
Total				1,008	1,293	
Products pipeline systems (mbpd):						
Cornerstone products system	Cornerstone	Canton, OH	8"-16"	58	238	Canton
Garyville, LA products system	Garyville, LA	Zachary, LA	20"-36"	72	389	Garyville
Texas City, TX products system	Texas City, TX	Pasadena, TX	16"-36"	42	215	Texas City, Galveston Bay
ORPL products system	Various	Various	6"-14"	518	244	Catlettsburg, Canton
Robinson, IL products system[b]	Various	Various	10"-16"	1,131	513	Robinson
Louisville, KY Airport products system	Louisville, KY	Louisville, KY	6"-8"	14	29	Robinson
Inactive pipelines[b]				123	N/A	
Total				1,958	1,628	
Wood River, IL barge dock (mbpd)					78	Garyville
Storage assets (thousand barrels):						
Neal, WV butane cavern[c]					1,000	Catlettsburg
Patoka, IL tank farm					2,626	All Midwest refineries
Wood River, IL tank farm					419	All Midwest refineries
Martinsville, IL tank farm					738	Detroit, Canton
Lebanon, IN tank farm					750	Detroit, Canton
Hartford, IL tank farm[d]					430	All Midwest refineries
Total					5,963	

(a) All capacities reflect 100 percent of the pipeline systems' and barge dock's average capacity in thousands of barrels per day and 100 percent of the available storage capacity of our butane cavern and tank farms in thousands of barrels.

(b) Includes pipelines leased from third parties.

(c) The Neal, WV butane cavern is 100 percent owned by MPLX.

(d) MPLX leases the Hartford tank farm from Wood River Pipe Lines LLC and Buckeye Terminals, LLC.

The throughputs in the following tables are based on days in operation since the MarkWest Merger.

Gas Processing Complexes	Location	Design Throughput Capacity (MMcf/d)[(a)]	Natural Gas Throughput (MMcf/d)[(b)]	Utilization of Design Capacity[(b)]
Keystone Complex	Butler County, PA	410	265	65%
Houston Complex[(e)]	Washington County, PA	555	446	80%
Majorsville Complex	Marshall County, WV	1,070	789	74%
Mobley Complex	Wetzel County, WV	920	690	80%
Sherwood Complex	Doddridge County, WV	1,200	1,020	85%
Cadiz Complex	Harrison County, OH	525	477	91%
Seneca Complex	Noble County, OH	800	595	74%
Kenova Complex[(c)]	Wayne County, WV	160	102	64%
Boldman Complex[(c)]	Pike County, KY	70	30	43%
Cobb Complex	Kanawha County, WV	65	22	34%
Kermit Complex[(c)(d)]	Mingo County, WV	32	N/A	N/A
Langley Complex	Langley, KY	325	99	30%
Carthage Complex	Panola County, TX	600	493	82%
Western Oklahoma Complex	Custer and Beckham Counties, OK	425	333	78%
Hidalgo System	Culberson County, TX	200	105	81%
Javelina Complex	Corpus Christi, TX	142	99	70%
Total		7,467	5,565	76%

(a) Centrahoma processing capacity of 300 MMcf/d is not included in this table as MPLX owns a non-operating interest.

(b) Natural gas throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

(c) A portion of the gas processed at the Boldman plant, and all of the gas processed at the Kermit plant, is further processed at the Kenova plant to recover additional NGLs.

(d) The Kermit processing plant is operated by a third party solely to prevent liquids from condensing in the gathering and transmission pipelines upstream of our Kenova plant. MPLX does not receive Kermit gas volume information but does receive all of the liquids produced at the Kermit Complex. As such, the design capacity has been excluded from the subtotal.

(e) Approximately 35 MMcf/d of processing capacity at the Houston Complex will be decommissioned during the first quarter of 2017 and replaced with 200 MMcf/d of processing capacity.

Fractionation Complexes	Location	Design Throughput Capacity (mbpd)	NGL Throughput (mbpd)[a]	Utilization of Design Capacity[a]
Keystone Complex[b][c]	Butler County, PA	47	14	30%
Houston Complex[b]	Washington County, PA	60	60	100%
Hopedale Complex[b][d]	Harrison County, OH	120	110	92%
Ohio Condensate Complex[e]	Harrison County, OH	23	14	61%
Siloam Complex[f]	South Shore, KY	24	15	63%
Javelina Complex	Corpus Christi, TX	11	7	64%
Total		285	220	77%

(a) NGL throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

(b) The MPLX Houston, Hopedale and Keystone Complexes have above-ground NGL storage with a usable capacity of 28 million gallons, large-scale truck and rail loading. In addition, the Houston Complex has large-scale truck unloading. MPLX also has access to up to an additional 50 million gallons of propane storage capacity that can be utilized in the Marcellus Shale, Utica Shale and Appalachia region under an agreement with a third party that expires in 2018. Lastly, MPLX has up to nine million gallons of butane storage and eight million gallons of propane storage with third parties that can be utilized in the Marcellus Shale and Utica Shale.

(c) Includes 33 mpbd of de-propanization only capacity.

(d) The MPLX Hopedale Complex is jointly owned by Ohio Fractionation Company, L.L.C. ("Ohio Fractionation") and MarkWest Utica EMG, L.L.C. ("MarkWest Utica EMG"). Ohio Fractionation is a subsidiary of MarkWest Liberty Midstream & Resources, L.L.C. ("MarkWest Liberty Midstream"). MarkWest Liberty Midstream and MarkWest Utica EMG are entities that operate in the Marcellus and Utica regions, respectively. MPLX accounts for MarkWest Utica EMG as an equity method investment.

(e) The Ohio Condensate Complex is owned by MarkWest Utica EMG Condensate, L.L.C. MPLX accounts for Ohio Condensate as an equity method investment.

(f) The MPLX Siloam Complex has both above-ground, pressurized NGL storage facilities, with usable capacity of two million gallons, and underground storage facilities, with usable capacity of 10 million gallons. Product can be received by truck, pipeline or rail and can be transported from the facility by truck, rail or barge. This facility has large-scale truck and rail loading and unloading capabilities, and a river barge facility capable of loading barges up to 860,000 gallons.

De-ethanization Complexes	Location	Design Throughput Capacity (mbpd)	Natural Gas Throughput (mbpd)[a]	Utilization of Design Capacity[a]
Keystone Complex	Butler County, PA	14	11	79%
Houston Complex	Washington County, PA	40	37	93%
Majorsville Complex	Marshall County, WV	40	42	105%
Mobley Complex	Wetzel County, WV	10	6	82%
Sherwood Complex	Doddridge County, WV	40	18	45%
Cadiz Complex	Harrison County, OH	40	4	10%
Javelina Complex	Corpus Christi, TX	18	11	61%
Total		202	129	64%

(a) NGL throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

Natural Gas Gathering Systems	Location	Design Throughput Capacity (MMcf/d)	Natural Gas Throughput (MMcf/d)[(a)]	Utilization of Design Capacity[(a)]
Keystone System	Butler County, PA	227	194	85%
Houston System	Washington County, PA	984	716	74%
Ohio Gathering System[(b)]	Harrison, Monroe, Belmont, Guernsey and Noble Counties, OH	1,393	867	63%
Jefferson Gas System[(c)]	Jefferson County, OH	250	65	26%
East Texas System	Harrison and Panola Counties, TX	680	578	85%
Western Oklahoma System	Wheeler County, TX and Roger Mills, Ellis, Custer, Beckham and Washita Counties, OK	585	364	62%
Southeast Oklahoma System	Hughes, Pittsburg and Coal Counties, OK	1,205	449	37%
Eagle Ford System	Dimmit County, TX	45	31	69%
Other Systems[(d)]	Various	70	11	16%
Total		5,439	3,275	61%

(a) Natural gas throughput is a weighted average for days in operation. The utilization of design capacity has been calculated using the weighted average design throughput capacity.

(b) The Ohio Gathering System is owned by Ohio Gathering Company, L.L.C., which MPLX accounts for as an equity method investment.

(c) The Jefferson Gas System is owned by Jefferson Dry Gas, which is a joint venture between MarkWest Liberty Midstream and EMG MWE Dry Gas Holdings, LLC. MPLX accounts for Jefferson Dry Gas as an equity method investment.

(d) Excludes lateral pipelines where revenue is not based on throughput.

NGL Pipeline	Location	Design Throughput Capacity (mbpd)	NGL Throughput (mbpd)	Utilization of Design Capacity
Sherwood to Mobley propane and heavier liquids pipeline	Doddridge County, WV to Wetzel County, WV	45	40	89%
Mobley to Majorsville propane and heavier liquids pipeline	Wetzel County, WV to Marshall County, WV	80	64	80%
Majorsville to Houston propane and heavier liquids pipeline	Marshall County, WV to Washington County, PA	47	34	72%
Majorsville to Hopedale propane and heavier liquids pipeline	Marshall County, WV to Harrison County, OH	90	72	80%
Third party processing plant to Keystone ethane and heavier liquids pipeline	Butler County, PA	32	7	22%
Keystone to Mariner West ethane pipeline[(a)]	Butler County, PA to Beaver County, PA	35	12	34%
Houston to Ohio River ethane pipeline[(b)]	Washington County, PA to Beaver County, PA	57	16	28%
Majorsville to Houston ethane pipeline[(a)]	Marshall County, WV to Washington County, PA	60	66	110%
Sherwood to Mobley ethane pipeline	Doddridge County, WV to Wetzel County, WV	27	18	67%
Mobley to Fort Beeler ethane pipeline	Wetzel County, WV to Marshall County, WV	64	24	38%
Fort Beeler to Majorsville ethane pipeline	Marshall County, WV	45	24	53%
Seneca to Cadiz liquids pipeline	Noble County, OH to Harrison County, OH	90	20	22%
Cadiz to Hopedale liquids pipeline	Harrison County, OH	90	38	42%
Langley to Siloam liquids pipeline[(c)]	Langley, KY to South Shore, KY	17	12	71%
East Texas liquids pipeline	Panola County, TX	39	27	69%

(a) This pipeline is FERC-regulated.

(b) This is the section of the Mariner West pipeline, which is FERC-regulated, leased to and operated by Sunoco Logistics Partners LP.

(c) NGLs transported through the Langley to Ranger and Ranger to Kenova pipelines are combined with NGLs recovered at the Kenova facility. The design capacity and volume reported for the Langley to Siloam pipeline represent the combined NGL stream.

Crude Oil Pipeline	Location	Design Throughput Capacity (mbpd)	NGL Throughput (mbpd)	Utilization of Design Capacity
Michigan crude pipeline	Manistee County, MI to Crawford County, MI	60	9	15%

MPC-Retained Midstream Assets and Investments

The following tables set forth certain information related to our crude and products pipeline systems not owned by MPLX.

As of December 31, 2016, we owned undivided joint interests in the following common carrier crude oil pipeline systems.

Pipeline System	Origin	Destination	Diameter *(inches)*	Length *(miles)*	Ownership Interest	Operated by MPL
Capline	St. James, LA	Patoka, IL	40”	644	33%	Yes
Maumee	Lima, OH	Samaria, MI	22”	95	26%	No
Total				739		

As of December 31, 2016, we had partial ownership interests in the following pipeline companies.

Pipeline Company	Origin	Destination	Diameter *(inches)*	Length *(miles)*	Ownership Interest	Operated by MPL
Crude oil pipeline companies:						
Illinois Extension Pipeline Company LLC	Flanagan, IL	Patoka, IL	24”	168	35%	No
LOCAP LLC	Clovelly, LA	St. James, LA	48”	57	59%	No
LOOP LLC (LOOP)	Offshore Gulf of Mexico	Clovelly, LA	48”	48	51%	No
Total				273		
Products pipeline companies:						
Ascension Pipeline Company LLC[(a)]	Riverside, LA	Garyville	TBD	TBD	50%	No
Centennial Pipeline LLC[(b)]	Beaumont, TX	Bourbon, IL	24”-26”	796	50%	Yes
Explorer Pipeline Company	Port Arthur, TX	Hammond, IN	12”-28”	1,883	25%	No
Muskegon Pipeline LLC	Griffith, IN	Muskegon, MI	10”	170	60%	Yes
Wolverine Pipe Line Company	Chicago, IL	Bay City & Ferrysburg, MI	6”-18”	743	6%	No
Total				3,592		

(a) The pipeline diameter and length for these companies will be determined when these pipeline projects are placed into service.

(b) All system pipeline miles are inactive.

We also own 183 miles of private crude oil pipelines and 658 miles of private refined products pipelines that are operated by MPL for the benefit of our Refining & Marketing segment on a cost recovery basis. The following table provides additional information on these assets.

Private Pipeline Systems	Diameter *(inches)*	Length *(miles)*	Capacity (mbpd)
Crude oil pipeline systems:			
Lima, OH to Canton, OH	12”-16”	153	85
St. James, LA to Garyville, LA	30”	20	620
Other	6”-14”	2	15
Inactive pipelines		8	N/A
Total		183	720
Products pipeline systems:			
Louisville, KY to Lexington, KY[a]	8”	87	37
Woodhaven, MI to Detroit, MI	4”	26	12
Illinois pipeline systems	4”-12”	118	39
Texas pipeline systems	8”	103	45
Ohio pipeline systems	4”-12”	57	32
Inactive pipelines		267	N/A
Total		658	165

(a) We own a 65 percent undivided joint interest in the Louisville, KY to Lexington, KY system.

As of December 31, 2016, we owned or leased 63 private tanks with storage capacity of approximately 7.1 million barrels, which are located along MPL and ORPL pipelines.

Item 3. Legal Proceedings

We are the subject of, or a party to, a number of pending or threatened legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment. Some of these matters are discussed below.

Litigation

We are a party to a number of lawsuits and other proceedings and cannot predict the outcome of every such matter with certainty. While it is possible that an adverse result in one or more of the lawsuits or proceedings in which we are a defendant could be material to us, based upon current information and our experience as a defendant in other matters, we believe that these lawsuits and proceedings, individually or in the aggregate, will not have a material adverse effect on our consolidated results of operations, financial position or cash flows.

In May 2015, the Kentucky attorney general filed a lawsuit against our wholly-owned subsidiary, Marathon Petroleum Company LP (“MPC LP”), in the United States District Court for the Western District of Kentucky asserting claims under federal and state antitrust statutes, the Kentucky Consumer Protection Act, and state common law. The complaint, as amended in July 2015, alleges that MPC LP used deed restrictions, supply agreements with customers and exchange agreements with competitors to unreasonably restrain trade in areas within Kentucky and seeks declaratory relief, unspecified damages, civil penalties, restitution and disgorgement

of profits. At this early stage, the ultimate outcome of this litigation remains uncertain, and neither the likelihood of an unfavorable outcome nor the ultimate liability, if any, can be determined, and we are unable to estimate a reasonably possible loss (or range of loss) for this matter. We intend to vigorously defend ourselves in this matter.

In May 2007, the Kentucky attorney general filed a lawsuit against us and Marathon Oil in state court in Franklin County, Kentucky for alleged violations of Kentucky's emergency pricing and consumer protection laws following Hurricanes Katrina and Rita in 2005. The lawsuit alleges that we overcharged customers by $89 million during September and October 2005. The complaint seeks disgorgement of these sums, as well as penalties, under Kentucky's emergency pricing and consumer protection laws. We are vigorously defending this litigation. We believe that this is the first lawsuit for damages and injunctive relief under the Kentucky emergency pricing laws to progress this far and it contains many novel issues. In May 2011, the Kentucky attorney general amended his complaint to include a request for immediate injunctive relief as well as unspecified damages and penalties related to our wholesale gasoline pricing in April and May 2011 under statewide price controls that were activated by the Kentucky governor on April 26, 2011 and which have since expired. The court denied the attorney general's request for immediate injunctive relief, and the remainder of the 2011 claims likely will be resolved along with those dating from 2005. If the lawsuit is resolved unfavorably in its entirety, it could materially impact our consolidated results of operations, financial position or cash flows. However, management does not believe the ultimate resolution of this litigation will have a material adverse effect.

Environmental Proceedings

The Illinois Environmental Protection Agency ("IEPA") initiated an enforcement action against Marathon Pipe Line LLC, a wholly-owned subsidiary of MPLX ("MPL"), in connection with an April 17, 2016 pipeline release to the Wabash River near Crawleyville, Indiana. MPL responded to a Clean Water Act request for information from the EPA in furtherance of its investigation of possible violations arising from the April 17, 2016 pipeline release. The IEPA and the EPA may each seek penalties in excess of $100,000 in connection with this matter.

On February 17, 2016, MarkWest Liberty Bluestone, L.L.C., a wholly-owned subsidiary of MPLX ("MarkWest Liberty Bluestone"), received an initial Consent Agreement and Final Order ("Initial CAFO") from the EPA alleging violations of the Clean Air Act resulting from an EPA compliance inspection conducted in July 2012 at our Sarsen Facility, a gas processing facility at our Keystone Complex located in Pennsylvania. The alleged violations included the failure to comply with monitoring, tagging, recordkeeping and repair requirements with respect to certain pumps and/or valves at the facility and with certain emissions reduction and permit application requirements. The Initial CAFO set forth a proposed penalty of $285,000. After subsequent negotiations, MarkWest Liberty Bluestone has agreed in principle to a Consent Agreement and Final Order resolving these issues, pursuant to which MarkWest Liberty Bluestone would pay a penalty of $95,000 and implement certain enhancements in connection with its existing leak monitoring program.

MarkWest Liberty Midstream, MarkWest Ohio Fractionation Company, L.L.C. ("Ohio Fractionation") and MarkWest Utica EMG are in settlement discussions with the EPA relating to certain notices of violation alleging claims regarding fugitive emissions and violations of the Clean Air Act at the MarkWest Hopedale Complex, a fractionation facility located in Ohio (issued October 7, 2015 and June 27, 2016), the MarkWest Houston Complex, a gas processing facility located in Pennsylvania (issued April 5, 2016) and the MarkWest Seneca Complex, a gas processing facility located in Ohio (issued September 9, 2016). In connection with a proposed global settlement which would cover nineteen gas processing and fractionation sites, MarkWest Liberty Midstream, Ohio Fractionation and MarkWest Utica EMG, together with other MarkWest affiliates, have agreed in principle to pay a penalty of approximately $0.9 million, undertake certain monitoring and emission reduction projects at certain facilities with an estimated cost of approximately $3.3 million, and implement certain process enhancements for its and its affiliates' leak detection and repair programs at the nineteen gas processing and fractionation sites.

In July 2015, representatives from the EPA and the United States Department of Justice conducted a raid on a MarkWest Liberty Midstream pipeline launcher/receiver site utilized for pipeline maintenance operations in Washington County, Pennsylvania pursuant to a search warrant issued by a magistrate of the United States District Court for the Western District of Pennsylvania. As part of this initiative, the U.S. Attorney's Office for the Western District of Pennsylvania, proceeded with an investigation of MarkWest Liberty Midstream's launcher/receiver, pipeline and compressor station operations. In response to the investigation, MarkWest initiated independent studies which demonstrated that there was no risk to worker safety and no threat of public harm associated with MarkWest Liberty Midstream's launcher/receiver operations. These findings were supported by a subsequent inspection and review by the Occupational Safety and Health Administration. After providing these studies, and other substantial documentation related to MarkWest Liberty Midstream's pipeline and compressor stations, and arranging site visits and conducting several meetings with the government's representatives, on September 13, 2016, the U.S. Attorney's Office for the Western District of Pennsylvania rendered a declination decision, dropping its criminal investigation and declining to pursue charges in this matter.

MarkWest Liberty Midstream continues to discuss with the EPA and the State of Pennsylvania civil enforcement allegations associated with permitting or other related regulatory obligations for its launcher/receiver and compressor station facilities in the region. In connection with these discussions, MarkWest Liberty Midstream received an initial proposal from the EPA to settle all civil claims associated with this matter for the combination of a proposed cash penalty of approximately $2.4 million and proposed supplemental environmental projects with an estimated cost of approximately $3.6 million. MarkWest Liberty Midstream will be submitting a response asserting that this action involves novel issues surrounding primarily minor source emissions from facilities that the agencies themselves considered de minimis were not subject to regulation and consequently that the settlement proposal is excessive. MarkWest will continue to negotiate with the EPA regarding the amount and scope of the proposed settlement.

During 2001, we entered into a New Source Review consent decree and settlement of alleged Clean Air Act and other violations with the EPA covering our refineries. The settlement committed us to specific control technologies and implementation schedules for environmental expenditures and improvements to our refineries, which are now complete. Based on our satisfaction of obligations under the consent decree, on October 31, 2016, MPC and the United States Department of Justice jointly requested termination of the consent decree, and on November 29, 2016, the U.S. District Court for the Eastern District of Michigan entered an order terminating the consent decree.

We are involved in a number of other environmental proceedings arising in the ordinary course of business. While the ultimate outcome and impact on us cannot be predicted with certainty, we believe the resolution of these environmental proceedings will not have a material adverse effect on our consolidated results of operations, financial position or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock is listed on the NYSE and traded under the symbol "MPC." As of February 13, 2017, there were 34,310 registered holders of our common stock.

On April 29, 2015, our board of directors approved a two-for-one stock split in the form of a stock dividend, which was distributed on June 10, 2015, to shareholders of record at the close of business on May 20, 2015. All historical share and per share data included in this report have been retroactively restated on a post-split basis.

The following table reflects intraday high and low sales prices of and dividends declared on our common stock by quarter:

	2016			2015		
Dollars per share	High Price	Low Price	Dividends	High Price	Low Price	Dividends
Quarter 1	$ 52.83	$ 29.24	$ 0.32	$ 54.16	$ 37.62	$ 0.25
Quarter 2	43.26	32.02	0.32	53.07	48.41	0.25
Quarter 3	44.56	35.16	0.36	60.38	43.42	0.32
Quarter 4	51.15	40.01	0.36	59.99	46.03	0.32
Year	52.83	29.24	1.36	60.38	37.62	1.14

Dividends

Our board of directors intends to declare and pay dividends on our common stock based on our financial condition and consolidated results of operations. On January 27, 2017, our board of directors approved a 36 cent per share dividend, payable March 10, 2017 to shareholders of record at the close of business on February 16, 2017.

Dividends on our common stock are limited to our legally available funds.

Issuer Purchases of Equity Securities

The following table sets forth a summary of our purchases during the quarter ended December 31, 2016, of equity securities that are registered by MPC pursuant to Section 12 of the Securities Exchange Act of 1934, as amended:

Period	Total Number of Shares Purchased[(a)]	Average Price Paid per Share[(b)]	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[(c)]
10/01/16-10/31/16	3,496	$ 40.65	-	$ 2,584,139,110
11/01/16-11/30/16	348	43.33	-	2,584,139,110
12/01/16-12/31/16	407,070	49.16	406,820	2,564,140,333
Total	410,914	49.08	406,820	

(a) The amounts in this column include 3,496, 348 and 250 shares of our common stock delivered by employees to MPC, upon vesting of restricted stock, to satisfy tax withholding requirements in October, November and December, respectively.

(b) Amounts in this column reflect the weighted average price paid for shares purchased under our share repurchase authorizations and for shares tendered to us in satisfaction of employee tax withholding obligations upon the vesting of restricted stock granted under our stock plans. The weighted average price includes commissions paid to brokers on shares purchased under our share repurchase authorizations.

(c) On July 30, 2015, we announced that our board of directors had approved a $2.0 billion share repurchase authorization in addition to the $2.0 billion share repurchase authorization announced on July 30, 2014, with such outstanding authorizations to expire on July 31, 2017. These authorizations, together with prior authorizations, result in a total of $10.0 billion of share repurchase authorizations since January 1, 2012.

Item 6. Selected Financial Data

The following table should be read in conjunction with Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and Item 8. Financial Statements and Supplementary Data.

	Year Ended December 31,				
(In millions, except per share data)	2016	2015[(a)]	2014[(a)]	2013[(a)]	2012
Statements of Income Data					
Revenues	$ 63,339	$ 72,051	$ 97,817	$ 100,160	$ 82,243
Income from operations	2,378	4,692	4,051	3,425	5,347
Net income	1,213	2,868	2,555	2,133	3,393
Net income attributable to MPC	1,174	2,852	2,524	2,112	3,389
Per Share Data[(b)]					
Net income attributable to MPC per share:					
Basic	$ 2.22	$ 5.29	$ 4.42	$ 3.34	$ 4.97
Diluted	$ 2.21	$ 5.26	$ 4.39	$ 3.32	$ 4.95
Dividends per share	$ 1.36	$ 1.14	$ 0.92	$ 0.77	$ 0.60
Statements of Cash Flows Data					
Net cash provided by operating activities	$ 3,986	$ 4,061	$ 3,110	$ 3,405	$ 4,492
Additions to property, plant and equipment	2,892	1,998	1,480	1,206	1,369
Acquisitions, net of cash acquired[(a)]	-	1,218	2,821	1,515	190
Common stock repurchased	197	965	2,131	2,793	1,350
Dividends paid	719	613	524	484	407

	December 31,				
(In millions)	2016	2015[(a)]	2014[(a)]	2013[(a)]	2012
Balance Sheets Data					
Total assets	$ 44,413	$ 43,115	$ 30,425	$ 28,367	$ 27,203
Long-term debt, including capitalized leases[(c)]	10,572	11,925	6,602	3,378	3,341
Noncontrolling interests	6,646	6,438	639	412	411
Total equity	20,203	19,675	11,390	11,332	12,105

(a) On December 4, 2015, MPLX, our consolidated subsidiary, merged with MarkWest. On September 30, 2014, we acquired Hess' Retail Operations and Related Assets. On February 1, 2013, we acquired the Galveston Bay Refinery and Related Assets. The financial results for these operations are included in our consolidated results from the date of acquisition.

(b) The number of weighted average shares reflect the impacts of shares of common stock repurchased under our share repurchase plans.

(c) Includes amounts due within one year. During 2015, in connection with the MarkWest Merger, MPLX assumed MarkWest Senior Notes with an aggregate principal amount of $4.1 billion and used its credit facility to repay $850 million of the $943 million of borrowings under MarkWest's credit facility. During 2014, we issued $1.95 billion aggregate principal amount of senior notes and entered into a $700 million term loan agreement to fund a portion of the Hess' Retail Operations and Related Assets acquisition.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Management’s Discussion and Analysis of Financial Condition and Results of Operations should be read in conjunction with the information included under Item 1. Business, Item 1A. Risk Factors, Item 6. Selected Financial Data and Item 8. Financial Statements and Supplementary Data.

Management’s Discussion and Analysis of Financial Condition and Results of Operations includes various forward-looking statements concerning trends or events potentially affecting our business. You can identify our forward-looking statements by words such as “anticipate,” “believe,” “design,” “estimate,” “objective,” “expect,” “forecast,” “outlook,” “goal,” “guidance,” “imply,” “intend,” “plan,” “predict,” “prospective,” “project,” “opportunity,” “potential,” “position,” “pursue,” “strategy,” “seek,” “target,” “could,” “may,” “should,” “would,” “will” or other similar expressions that convey the uncertainty of future events or outcomes. In accordance with “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, these statements are accompanied by cautionary language identifying important factors, though not necessarily all such factors, which could cause future outcomes to differ materially from those set forth in forward-looking statements.

Corporate Overview

We are an independent petroleum refining and marketing, retail and midstream company. Overall, we are one of the largest independent petroleum product refining, marketing, retail and transportation businesses in the United States and the largest east of the Mississippi.

We currently own and operate seven refineries, all located in the United States, with an aggregate crude oil refining capacity of approximately 1.8 mmbpcd. Our refineries supply refined products to resellers and consumers within our market areas, including the Midwest, Northeast, East Coast, Southeast and Gulf Coast regions of the United States. We distribute refined products to our customers through one of the largest terminal operations in the United States and a combination of MPC-owned and third-party-owned trucking and rail assets. We are one of the largest wholesale suppliers of gasoline and distillates to resellers within our market area.

We have two strong retail brands: Speedway® and Marathon®. We believe that Speedway LLC, a wholly-owned subsidiary, operates the second largest chain of company-owned and operated retail gasoline and convenience stores in the United States, with approximately 2,730 convenience stores in 21 states throughout the Midwest, East Coast and Southeast. The Marathon brand is an established motor fuel brand in the Midwest and Southeast regions of the United States, and is available through approximately 5,500 retail outlets operated by independent entrepreneurs in 19 states.

Through our ownership interests in MPLX and its wholly-owned subsidiary, MarkWest, we are one of the largest processors of natural gas in the United States, the largest processor and fractionator in the Marcellus and Utica shale regions and we distribute refined products through one of the largest private domestic fleets of inland petroleum product barges. Our integrated midstream energy asset network links producers of natural gas and NGLs from some of the largest supply basins in the United States to domestic and international markets. Our midstream gathering and processing operations include: natural gas gathering, processing and transportation; and NGL gathering, transportation, fractionation, storage and marketing. Our assets include approximately 7,500 MMcf/d of natural gas processing capacity and 500 mbpd of fractionation capacity as of December 31, 2016. We also own 5,600 miles of gas gathering and NGL pipelines and have ownership interests in more than 50 gas processing plants, more than 10 NGL fractionation facilities and two condensate stabilization facilities. As of December 31, 2016, we owned, leased or had ownership interests in approximately 8,400 miles of crude oil and refined product pipelines to deliver crude oil to our refineries and other locations and refined products to wholesale and retail market areas.

We revised our operating segment presentation in the first quarter of 2016 in connection with the contribution of our inland marine business to MPLX. In previous periods, our inland marine business and our investment in an

ocean vessel joint venture, Crowley Ocean Partners, were presented within our Refining & Marketing segment. They are now presented in our Midstream segment. Comparable prior period information has been recast to reflect our revised segment presentation. We plan additional dropdowns of MLP-qualifying assets to MPLX in 2017 and would expect changes to our segment reporting in connection with these transactions.

Our operations consist of three reportable operating segments: Refining & Marketing; Speedway; and Midstream. Each of these segments is organized and managed based upon the nature of the products and services they offer. See Item 1. Business for additional information on our segments.

- Refining & Marketing – refines crude oil and other feedstocks at our seven refineries in the Gulf Coast and Midwest regions of the United States, purchases refined products and ethanol for resale and distributes refined products through various means, including terminals and trucks that we own or operate. We sell refined products to wholesale marketing customers domestically and internationally, buyers on the spot market, our Speedway business segment and to independent entrepreneurs who operate Marathon® retail outlets.
- Speedway – sells transportation fuels and convenience products in the retail market in the Midwest, East Coast and Southeast.
- Midstream – includes the operations of MPLX and certain other related operations. The Midstream segment gathers, processes and transports natural gas; gathers, transports, fractionates, stores and markets NGLs and transports and stores crude oil and refined products.

Strategic Actions to Enhance Shareholder Value

On January 3, 2017, we announced plans to significantly accelerate the dropdown of assets with an estimated $1.4 billion of MLP-eligible annual EBITDA to MPLX now expected to be completed in 2017, subject to requisite approvals and regulatory clearances, including tax clearance, and market and other conditions. We expect these dropdowns to be valued consistent with recent industry precedent valuation multiples ranging between 7.0x and 9.0x EBITDA, subject to the MPLX conflicts committee review process and receipt of customary fairness opinions. We also expect MPLX to finance the dropdown transactions with debt and equity in approximately equal proportions in the aggregate for all planned dropdowns of assets. The equity financing is expected to be funded through MPLX common units issued to us. In conjunction with the completion of the dropdowns, we also expect to exchange our economic interests in the general partner of MPLX, including incentive distribution rights, for newly issued MPLX common units. Additionally, a special committee of our board of directors, with the assistance of an independent financial advisor, will conduct a full and thorough review of Speedway to ensure optimum value is being delivered to shareholders over the long term. We expect to provide an update on the review by mid-2017. This significant acceleration of dropdowns and other announced strategic actions are designed to further highlight the substantial value embedded in our integrated businesses.

Executive Summary

Results

Select results for 2016 and 2015 are reflected in the following table.

(In millions, except per share data)	2016	2015
Income from Operations by segment		
Refining & Marketing	$ 1,543	$ 4,086
Speedway	734	673
Midstream	871	380
Items not allocated to segments	(770)	(447)
Total	$ 2,378	$ 4,692
Net income attributable to MPC	$ 1,174	$ 2,852
Net income attributable to MPC per diluted share	$ 2.21	$ 5.26

Net income attributable to MPC decreased $1.68 billion, or $3.05 per diluted share, in 2016 compared to 2015, primarily due to reduced results from our Refining & Marketing segment.

Refining & Marketing segment income from operations decreased in 2016 compared to 2015. Segment income in 2015 includes a $345 million non-cash charge related to the Company's LCM inventory reserve. Due to increased refined product prices in 2016, this inventory reserve was completely reversed resulting in a non-cash benefit to segment income of $345 million. The favorable LCM inventory adjustment variance was more than offset by the unfavorable effects of lower crack spreads and higher direct operating costs due to refinery turnarounds.

Speedway segment income from operations increased in 2016 compared to 2015. Segment income in 2015 includes a $25 million non-cash charge related to the Company's LCM inventory reserve. Due to increased refined product prices in 2016, this inventory reserve was completely reversed resulting in a non-cash benefit to segment income of $25 million. In addition to the favorable LCM inventory adjustment variance, the remaining increase during the year was primarily due to higher merchandise gross margin and gains from asset sales, partially offset by lower gasoline and distillate gross margins.

Midstream segment income from operations increased in 2016 compared to 2015, primarily due to the inclusion of MarkWest's operating results following the merger with MPLX on December 4, 2015 (as discussed below), as well as earnings from new and existing pipeline and marine equity investments.

Items not allocated to segments in 2016 includes non-cash impairment charges totaling $486 million, which included $267 million related to our equity method investment in the Sandpiper pipeline project resulting from the indefinite deferral of this project, $130 million related to the goodwill recognized in connection with the MarkWest Merger and $89 million related to an MPLX equity method investment. Items not allocated to segments in 2015 includes an impairment charge of $144 million related to the cancellation of the ROUX project.

MPLX LP

MPLX is a diversified, growth-oriented publicly traded master limited partnership originally formed by us to own, operate, develop and acquire midstream energy infrastructure assets. MPLX is engaged in the gathering, processing and transportation of natural gas; the gathering, transportation, fractionation, storage and marketing of NGLs; and the gathering, transportation and storage of crude oil and refined petroleum products. On December 4, 2015, MPLX merged with MarkWest, whereby MarkWest became a wholly-owned subsidiary of MPLX. MarkWest is engaged in the gathering, processing and transportation of natural gas and the gathering, transportation, fractionation, storage and marketing of NGLs.

As of December 31, 2016, we owned a 25.5 percent interest in MPLX, including a two percent general partner interest. This ownership percentage reflects the conversion of the MPLX Class B Units in July 2017 at 1.09 to 1.00. MPLX is a VIE because the limited partners of MPLX do not have substantive kick-out or substantive participating rights over the general partner. We are the primary beneficiary of MPLX because in addition to significant economic interest, we also have the power, through our 100 percent ownership of the general partner, to control the decisions that most significantly impact MPLX. We therefore consolidate MPLX and record a noncontrolling interest for the 74.5 percent interest owned by the public. The components of our noncontrolling interest consist of equity-based noncontrolling interest and redeemable noncontrolling interest. The redeemable noncontrolling interest relates to MPLX's preferred units, discussed below.

The creditors of MPLX do not have recourse to MPC's general credit through guarantees or other financial arrangements. The assets of MPLX are the property of MPLX and cannot be used to satisfy the obligations of MPC.

Dropdowns to MPLX

On March 1, 2014, we sold MPLX a 13 percent interest in MPLX Pipe Line Holdings LLC ("Pipe Line Holdings") for $310 million. MPLX financed this transaction with $40 million of cash on-hand and $270 million of borrowings on its bank revolving credit facility.

On December 1, 2014, we sold and contributed interests in Pipe Line Holdings totaling 30.5 percent to MPLX for $600 million in cash and 2.9 million MPLX common units valued at $200 million. MPLX financed the sales portion of this transaction with $600 million of borrowings on its bank revolving credit facility.

On December 4, 2015, we sold our remaining 0.5 percent interest in Pipe Line Holdings to MPLX for $12 million. As a result, MPLX now owns 100 percent of Pipe Line Holdings.

The sales and contribution of our interests in Pipe Line Holdings to MPLX resulted in a change of our ownership in Pipe Line Holdings, but not a change in control. We accounted for these sales as transactions between entities under common control and did not record a gain or loss.

On March 31, 2016, we contributed our inland marine business to MPLX in exchange for 23 million common units and 460 thousand general partner units. The number of units we received from MPLX was determined by dividing $600 million by the volume weighted average NYSE price of MPLX common units for the 10 trading days preceding March 14, 2016, pursuant to the Membership Interests Contribution Agreement. We also agreed to waive first-quarter 2016 common unit distributions, IDRs and general partner distributions with respect to the common units issued in this transaction. The contribution of our inland marine business was accounted for as a transaction between entities under common control and we did not record a gain or loss.

On December 5, 2016, our board of directors authorized us to offer up to 100 percent of MPLX Terminals LLC ("MPLX Terminals"), Hardin Street Transportation LLC ("Hardin Street Transportation") and Woodhaven Cavern LLC ("Woodhaven Cavern") to MPLX. MPLX Terminals owns and operates light products terminals. Hardin Street Transportation owns and operates various private crude oil and refined product pipeline systems and associated storage tanks. Woodhaven Cavern owns and operates butane and propane storage caverns. The transaction is expected to close in the first quarter of 2017, pending requisite approvals.

Reorganization Transactions

On September 1, 2016, MPC, MPLX and various affiliates initiated a series of reorganization transactions in order to simplify MPLX's ownership structure and its financial and tax reporting. In connection with these transactions, MPC contributed $225 million to MPLX, and all of the issued and outstanding MPLX Class A Units, all of which were held by MarkWest Hydrocarbon, a wholly-owned subsidiary of MPLX, were exchanged

for newly issued common units representing limited partner interests in MPLX. The simple average of the closing prices of MPLX common units for the last 10 trading days prior to September 1, 2016 was used for purposes of these transactions. As a result of these transactions, MPC increased its ownership interest in MPLX by 7 million MPLX common units, or approximately 1 percent.

Private Placement of Preferred Units

On May 13, 2016, MPLX completed the private placement of approximately 30.8 million 6.5 percent Series A Convertible Preferred Units (the "MPLX Preferred Units") at a cash price of $32.50 per unit. The aggregate net proceeds of approximately $984 million from the sale of the MPLX Preferred Units was used for capital expenditures, repayment of debt and general partnership purposes.

The MPLX Preferred Units rank senior to all MPLX common units with respect to distributions and rights upon liquidation. The holders of the MPLX Preferred Units are entitled to receive quarterly distributions equal to $0.528125 per unit commencing for the quarter ended June 30, 2016, with a prorated amount from the date of issuance. Following the second anniversary of the issuance of the MPLX Preferred Units, the holders of the MPLX Preferred Units will receive as a distribution the greater of $0.528125 per unit or the amount of per unit distributions paid to common units. The MPLX Preferred Units are convertible into MPLX common units on a one for one basis after three years, at the purchasers' option, and after four years at MPLX's option, subject to certain conditions.

The MPLX Preferred Units are considered redeemable securities due to the existence of redemption provisions upon a deemed liquidation event which is considered outside our control. Therefore they are presented as temporary equity in the mezzanine section of the consolidated balance sheets. We have recorded the MPLX Preferred Units at fair value as of their issuance date, net of issuance costs. Since the MPLX Preferred Units are not currently redeemable and not probable of becoming redeemable in the future, adjustment to the initial carrying amount is not necessary and would only be required if it becomes probable that the security would become redeemable.

Public Offerings

On December 8, 2014, MPLX completed a public offering of 3.5 million common units at a price to the public of $66.68 per MPLX common unit, with net proceeds of $221 million. MPLX used the net proceeds from this offering to repay borrowings under its bank revolving credit facility and for general partnership purposes.

On February 12, 2015, MPLX completed an underwritten public offering of $500 million aggregate principal amount of four percent unsecured senior notes due February 15, 2025 (the "Senior Notes"). The Senior Notes were offered at a price to the public of 99.64 percent of par. The net proceeds of this offering were used to for general corporate purposes, including dropdowns.

On February 10, 2017, MPLX completed a public offering of $1.25 billion aggregate principal amount of 4.125% unsecured senior notes due March 2027 (the "MPLX 2027 Senior Notes") and $1.0 billion aggregate principal amount of 5.200% unsecured senior notes due March 2047 (the "MPLX 2047 Senior Notes"). MPLX intends to use the net proceeds from this offering for general partnership purposes, which may include, from time to time, acquisitions (including the previously announced planned dropdown of assets from MPC) and capital expenditures.

ATM Program

On August 4, 2016, MPLX entered into a Second Amended and Restated Distribution Agreement (the "Distribution Agreement") providing for the continuous issuance of common units, in amounts, at prices and on terms to be determined by market conditions and other factors at the time of any offerings (such continuous

offering program, or at-the-market program, referred to as the "ATM Program"). MPLX expects to use the net proceeds from sales under the ATM Program for general partnership purposes including repayment of debt and funding for acquisitions, working capital requirements and capital expenditures.

During 2016, MPLX issued an aggregate of 26 million common units under the ATM Program, generating net proceeds of approximately $776 million. As of December 31, 2016, $717 million of common units remains available for issuance through the ATM Program under the Distribution Agreement.

Distributions from MPLX

The following table summarizes the cash distributions we received from MPLX during 2016 and 2015.

(In millions)	2016	2015
Cash distributions received from MPLX:		
General partner distributions, including IDRs	$ 190	$ 21
Limited partner distributions	142	97
Total	$ 332	$ 118

The market value of the 86.6 million MPLX common units we owned at December 31, 2016 was $3.0 billion based on the December 31, 2016 closing unit price of $34.62. As mentioned in the Strategic Actions to Enhance Shareholder Value section above, we believe there is substantial value in our economic interests in the general partner of MPLX and expect to exchange these economic interests for newly issued MPLX common units in conjunction with completion of our dropdowns to highlight and capture that value.

On January 25, 2017, MPLX declared a quarterly cash distribution of $0.52 per common unit, which was payable February 14, 2017. As a result, MPLX made distributions totaling $243 million to its limited and general partners. MPC's portion of this distribution was approximately $102 million, $57 million for its general partner interests including IDRs and $45 million for its limited partner units.

See Item 8. Financial Statements and Supplementary Data — Note 4 for additional information on MPLX.

Acquisitions and Investments

On February 13, 2017, MPLX announced that it had entered into an asset purchase agreement with Enbridge Pipelines (Ozark) LLC ("Enbridge Ozark"), under which an affiliate of Pipe Line Holdings has agreed to purchase the Ozark pipeline for approximately $220 million from Enbridge Ozark. The Ozark pipeline is a 433-mile, 22-inch crude oil pipeline originating in Cushing, Oklahoma, and terminating in Wood River, Illinois, capable of transporting approximately 230 mbpd. The purchase transaction is expected to close in the first quarter of 2017, subject to customary closing conditions, including regulatory approvals.

On February 6, 2017, MPLX announced that its wholly-owned subsidiary, MarkWest, and Antero Midstream Partners L.P. ("Antero Midstream") formed a strategic joint venture to support the development of Antero Resources Corporation's extensive Marcellus Shale acreage in the prolific rich-gas corridor of West Virginia. In connection with this transaction, MarkWest contributed approximately $134 million of assets currently under construction at the Sherwood Complex and Antero Midstream made an initial capital contribution of approximately $154 million.

In the fourth quarter of 2016, Speedway and Pilot Flying J finalized the formation of a joint venture consisting of 123 travel plazas, primarily in the Southeast United States. The new entity, PFJ Southeast, consisted of 41 existing locations contributed by Speedway and 82 locations contributed by Pilot Flying J, all of which carry either the Pilot or Flying J brand and are operated by Pilot Flying J. Our non-cash contribution was $272 million based on the book value of the assets we contributed to the joint venture.

On September 1, 2016, Enbridge Energy Partners announced that its affiliate, North Dakota Pipeline, would withdraw certain pending regulatory applications for the Sandpiper pipeline project and that the project would be deferred indefinitely. These decisions were considered to indicate an impairment of the costs capitalized to date on the project. We made contributions of $14 million to North Dakota Pipeline during the year ended December 31, 2016 and have contributed $301 million since project inception to fund our share of the construction costs for the project. As the operator of North Dakota Pipeline, which owns the investments made to date in the Sandpiper pipeline project, and the entity responsible for maintaining its financial records, Enbridge Energy Partners completed a fixed asset impairment analysis as of August 31, 2016, in accordance with ASC Topic 360, to determine the fixed asset impairment charge. Based on the estimated liquidation value of the fixed assets, an impairment charge was recorded by North Dakota Pipeline. Based on our 37.5 percent ownership of North Dakota Pipeline, we recognized approximately $267 million of this charge in the third quarter of 2016 through "Income (loss) from equity method investments" on the accompanying consolidated statements of income. See Item 8. Financial Statements and Supplementary Data — Note 17 to the for information regarding the charge.

On February 15, 2017, MPLX closed on the previously announced transaction to acquire a partial, indirect equity interest in the DAPL and ETCOP projects, collectively referred to as the Bakken Pipeline system, through a joint venture with Enbridge Energy Partners. MPLX contributed $500 million of the $2 billion purchase price paid by the joint venture to acquire a 36.75 percent indirect equity interest in the Bakken Pipeline system from ETP and SXL. MPLX holds, through a subsidiary, a 25 percent interest in the joint venture, which equates to an approximate 9.2 percent indirect equity interest in the Bakken Pipeline system. The Bakken Pipeline system is currently expected to deliver in excess of 470 mbpd of crude oil from the Bakken/Three Forks production area in North Dakota to the Midwest through Patoka, Illinois and ultimately to the Gulf Coast. Furthermore, MPC expects to become a committed shipper on the Bakken Pipeline system under terms of an on-going open season.

In connection with closing the transaction with ETP and SXL, Enbridge Energy Partners canceled MPC's transportation services agreement with respect to the Sandpiper pipeline project and released MPC from paying any termination fee per that agreement.

We currently have indirect ownership interests in two ocean vessel joint ventures with Crowley, which were established to own and operate Jones Act vessels in petroleum product service. We have invested a total of $189 million in these two ventures as described further below.

In September 2015, we acquired a 50 percent ownership interest in a joint venture, Crowley Ocean Partners, with Crowley. The joint venture owns and operates four new Jones Act product tankers, three of which are leased to MPC. Two of the vessels were delivered in 2015 and the remaining two were delivered in 2016. During 2016, we contributed $69 million in connection with the delivery of the third and fourth vessels. We have contributed a total of $141 million for the four vessels.

In May 2016, MPC and Crowley formed a new ocean vessel joint venture, Crowley Coastal Partners, in which MPC has a 50 percent ownership interest. MPC and Crowley each contributed their 50 percent ownership in Crowley Ocean Partners, discussed above, into Crowley Coastal Partners. In addition, we contributed $48 million in cash and Crowley contributed its 100 percent ownership interest in Crowley Blue Water Partners to Crowley Coastal Partners. Crowley Blue Water Partners is an entity that owns and operates three 750 Series ATB vessels that are leased to MPC. We account for our 50 percent interest in Crowley Coastal Partners as part of our Midstream segment using the equity method of accounting.

See Item 8. Financial Statements and Supplementary Data – Note 6 for additional information on Crowley Coastal Partners as a VIE and Note 25 for information regarding our conditional guarantee of the indebtedness of Crowley Ocean Partners and Crowley Blue Water Partners.

On December 4, 2015, MPLX merged with MarkWest, whereby MarkWest became a wholly-owned subsidiary of MPLX. Each common unit of MarkWest issued and outstanding immediately prior to the effective time of the

MarkWest Merger was converted into a right to receive 1.09 common units of MPLX representing limited partner interests in MPLX, plus a one-time cash payment of $6.20 per unit. Each Class B unit of MarkWest outstanding immediately prior to the merger was converted into the right to receive one Class B unit of MPLX having substantially similar rights, including conversion and registration rights, and obligations the Class B units of MarkWest had immediately prior to the merger. At closing, we contributed $1.23 billion in cash to MPLX to pay the cash consideration to MarkWest common unitholders. We will contribute an additional total of $50 million in cash to MPLX for the cash consideration to be paid upon the conversion of the MPLX Class B units to MPLX common units in equal installments, the first $25 million of which was paid in July 2016 and the second $25 million of which will be paid in July 2017. These contributions are with respect to MPC's existing interests in MPLX (including IDRs) and not in consideration of new units or other equity interest in MPLX. We assigned the total consideration transferred of $8.61 billion, including the $7.33 billion fair value of the equity consideration and the $1.28 billion of cash contributions, to the fair value of the assets acquired and liabilities and noncontrolling interest assumed in the MarkWest Merger, with the excess recorded as goodwill. During the first quarter of 2016, the preliminary fair value measurements of assets acquired and liabilities assumed recorded in the 2015 year-end financial statements were revised based on additional analysis. These adjustments to the fair values of property, plant and equipment, intangibles and equity investments, among other items, resulted in an offsetting reduction to goodwill of approximately $241 million. As a result, we recognized total assets acquired of $11.91 billion, including $8.52 billion of property plant and equipment and $2.60 billion of equity investments, and total liabilities and noncontrolling interests assumed of $5.51 billion, including $4.57 billion of assumed debt. Goodwill is not amortized, but rather is tested for impairment annually or more frequently if warranted due to events or changes in circumstances.

MPLX recorded an impairment charge of approximately $129 million in the first quarter of 2016 to impair a portion of the $2.21 billion of goodwill, as adjusted, recorded in connection with the MarkWest Merger. In the second quarter of 2016, MPLX completed its purchase price allocation, which resulted in an additional $1 million of impairment expense that would have been recorded in the first quarter of 2016 had the purchase price allocation been completed as of that date. This adjustment to the impairment expense was the result of completing an evaluation of the deferred tax liabilities associated with the MarkWest Merger and their impact on the resulting goodwill that was recognized. See the Critical Accounting Estimates – Impairment Assessments of Long-Lived Assets, Intangible Assets, Goodwill and Equity Investments section for a discussion of recent circumstances which may impact the assessment of this goodwill. Our financial results and operating statistics reflect the results of MarkWest operations from the date of the acquisition in the Midstream segment.

Consistent with our strategy to grow our midstream business, the MarkWest Merger combines one of the nation's largest processors of natural gas and the largest processor and fractionator in the Marcellus and Utica shale regions with a rapidly growing crude oil and refined products logistics partnership sponsored by MPC. The complementary aspects of the highly diverse asset base of MarkWest, MPLX and MPC provide significant additional opportunities across multiple segments of the hydrocarbon value chain. The combined entity will further MarkWest's leading midstream presence in the Marcellus and Utica shales by allowing it to pursue additional midstream projects, which should allow producer customers to achieve superior value for their growing production in these important shale regions.

On September 30, 2014, we acquired from Hess all of its retail locations, transport operations and shipper history on various pipelines, including approximately 40 mbpd on Colonial Pipeline, for $2.82 billion. We refer to these assets as "Hess' Retail Operations and Related Assets" and substantially all of these assets are part of our Speedway segment. This acquisition significantly expanded our Speedway presence from nine to 22 states throughout the East Coast and Southeast consistent with our strategy to grow higher-valued, more stable cash flow businesses. This acquisition also enables us to further leverage our integrated refining and transportation operations, providing an outlet for assured sales from our refining system. The transaction was funded with a combination of debt and available cash. Our financial results and operating statistics reflect the results for Hess' Retail Operations and Related Assets in our Speedway segment from the date of the acquisition.

In July 2014, we exercised our option to acquire a 35 percent ownership interest in Enbridge Inc.'s SAX pipeline which runs from Flanagan, Illinois to Patoka, Illinois. This option resulted from our agreement to be the anchor shipper on the SAX pipeline. During 2016, we made contributions of $32 million to Illinois Extension Pipeline to fund our portion of the construction costs for the SAX project. We have contributed $299 million since project inception. The pipeline became operational in December 2015. Our investment in the pipeline is included in our Midstream segment.

In March 2014, we acquired from Chevron Raven Ridge Pipe Line Company an additional seven percent interest in Explorer for $77 million, bringing our ownership interest to 25 percent. Due to this increase in our ownership percentage, we now account for our investment in Explorer using the equity method of accounting as part of our Midstream segment and report Explorer as a related party. Explorer owns approximately 1,900 miles of refined products pipeline from Port Arthur, Texas to Hammond, Indiana.

See Item 8. Financial Statements and Supplementary Data – Note 5 for additional information on these acquisitions and investments.

Share Repurchases

Since January 1, 2012, our board of directors has approved $10.0 billion in total share repurchase authorizations and we have repurchased a total of $7.44 billion of our common stock, leaving $2.56 billion available for repurchases as of December 31, 2016. Under these authorizations, we have acquired 202 million shares at an average cost per share of $36.77.

Liquidity

As of December 31, 2016, we had cash and cash equivalents of $887 million and no borrowings or letters of credit outstanding under our $3.5 billion bank revolving credit facilities or under our $750 million trade receivables securitization facility ("trade receivables facility"). As of December 31, 2016, eligible trade receivables supported borrowings of $684 million under the trade receivable facility. As of December 31, 2016, we do not have any commercial paper borrowings outstanding. We do not intend to have outstanding commercial paper borrowings in excess of available capacity under our bank revolving credit facilities. MPLX had no borrowings outstanding under its $2 billion revolving credit agreement as of December 31, 2016.

The above discussion contains forward-looking statements with respect to the business and operations of MPC, including our proposed strategic actions to enhance shareholder value, our growth and vertical integration opportunities with respect to our midstream assets, the ATM Program and MPLX's purchase of the Ozark pipeline. Factors that could impact our proposed strategic actions include, but are not limited to, the time, costs and ability to obtain regulatory or other approvals and consents and otherwise consummate the strategic actions discussed herein; the satisfaction or waiver of conditions in the agreements governing the strategic actions discussed herein; our ability to achieve the strategic and other objectives related to the strategic actions discussed herein; the impact of adverse market conditions affecting MPC's and MPLX's midstream businesses; adverse changes in laws including with respect to tax and regulatory matters; inability to agree with the MPLX conflicts committee with respect to the timing of and value attributed to assets identified for dropdown; Factors that could affect our growth and vertical integration opportunities with respect to our midstream assets include, but are not limited to, volatility in and/or degradation of market and industry conditions, our ability to implement and realize the benefits and synergies of these opportunities, availability of liquidity, actions taken by competitors, regulatory approvals and operating performance. Factors that could affect the ATM Program and the timing of any issuances under the ATM Program include, but are not limited to, market conditions, availability of liquidity and the market price of MPLX's common units. Factors that could affect MPLX's purchase of the Ozark pipeline include, but are not limited to, the parties' ability to satisfy closing conditions. These factors, among others, could cause actual results to differ materially from those set forth in the forward-looking statements. For additional information on forward-looking statements and risks that can affect our business, see "Disclosures Regarding Forward-Looking Statements" and Item 1A. Risk Factors in this Annual Report on Form 10-K.

Overview of Segments

Refining & Marketing

Refining & Marketing segment income from operations depends largely on our Refining & Marketing gross margin and refinery throughputs.

Our Refining & Marketing gross margin is the difference between the prices of refined products sold and the costs of crude oil and other charge and blendstocks refined, including the costs to transport these inputs to our refineries and the costs of products purchased for resale. The crack spread is a measure of the difference between market prices for refined products and crude oil, commonly used by the industry as a proxy for the refining margin. Crack spreads can fluctuate significantly, particularly when prices of refined products do not move in the same relationship as the cost of crude oil. As a performance benchmark and a comparison with other industry participants, we calculate Midwest (Chicago) and USGC crack spreads that we believe most closely track our operations and slate of products. LLS prices and a 6-3-2-1 ratio of products (6 barrels of LLS crude oil producing 3 barrels of unleaded regular gasoline, 2 barrels of ultra-low sulfur diesel and 1 barrel of three percent residual fuel oil) are used for these crack-spread calculations.

Our refineries can process significant amounts of sour crude oil, which typically can be purchased at a discount to sweet crude oil. The amount of this discount, the sweet/sour differential, can vary significantly, causing our Refining & Marketing gross margin to differ from crack spreads based on sweet crude oil. In general, a larger sweet/sour differential will enhance our Refining & Marketing gross margin.

Future crude oil differentials will be dependent on a variety of market and economic factors, as well as U.S. energy policy.

The following table provides sensitivities showing an estimated change in annual net income due to potential changes in market conditions.

(In millions, after-tax)	
LLS 6-3-2-1 crack spread sensitivity[(a)] *(per $1.00/barrel change)*	$ 450
Sweet/sour differential sensitivity[(b)] *(per $1.00/barrel change)*	225
LLS-WTI differential sensitivity[(c)] *(per $1.00/barrel change)*	80
Natural gas price sensitivity[(d)] *(per $1.00/million British thermal unit change)*	130

(a) Weighted 40 percent Chicago and 60 percent USGC LLS 6-3-2-1 crack spreads and assumes all other differentials and pricing relationships remain unchanged.

(b) LLS (prompt) — [delivered cost of sour crude oil: Arab Light, Kuwait, Maya, Western Canadian Select and Mars].

(c) Assumes approximately 20 percent of crude oil throughput volumes are WTI-based domestic crude oil.

(d) This is consumption based exposure for our Refining & Marketing segment and does not include the sales exposure for our Midstream segment.

In addition to the market changes indicated by the crack spreads, the sweet/sour differential and the LLS to WTI differential, our Refining & Marketing gross margin is impacted by factors such as:

- the selling prices realized for refined products;
- the types of crude oil and other charge and blendstocks processed;
- our refinery yields;
- the cost of products purchased for resale;
- the impact of commodity derivative instruments used to hedge price risk; and
- the potential impact of LCM adjustments to inventories in periods of declining prices.

Inventories are stated at the lower of cost or market. Costs of crude oil, refinery feedstocks and refined products are stated under the LIFO inventory costing method and aggregated on a consolidated basis for purposes of assessing if the cost basis of these inventories may have to be written down to market values. At December 31, 2015, costs of inventories on a consolidated basis exceeded market value resulting in an LCM charge to cost of revenues of $370 million, of which $345 million was allocated to our Refining & Marketing segment. As of June 30, 2016, market value exceeded cost and we reversed the LCM inventory reserve resulting in a benefit to cost of revenues for the year ended December 31, 2016. At December 31, 2016, market values for refined products continue to exceed their cost basis and, therefore, there is no LCM inventory market valuation reserve at the end of the year. Based on movements of refined product prices, future inventory valuation adjustments could have a negative effect to earnings. Such losses are subject to reversal in subsequent periods if prices recover.

Refining & Marketing segment income from operations is also affected by changes in refinery direct operating costs, which include turnaround and major maintenance, depreciation and amortization and other manufacturing expenses. Changes in manufacturing costs are primarily driven by the cost of energy used by our refineries, including purchased natural gas, and the level of maintenance costs. Planned major maintenance activities, or turnarounds, requiring temporary shutdown of certain refinery operating units, are periodically performed at each refinery. The following table lists the refineries that had significant planned turnaround and major maintenance activities for each of the last three years.

Year	Refinery
2016	Galveston Bay, Garyville and Robinson
2015	Catlettsburg, Galveston Bay, Garyville and Robinson
2014	Catlettsburg, Galveston Bay, Garyville and Robinson

The table below sets forth the location and daily crude oil refining capacity of each of our refineries at December 31 of each year.

	Crude Oil Refining Capacity (mbpcd)		
Refinery	2016	2015	2014
Garyville, Louisiana	543	539	522
Galveston Bay, Texas City, Texas	459	459	451
Catlettsburg, Kentucky	273	273	242
Robinson, Illinois	231	212	212
Detroit, Michigan	132	132	130
Canton, Ohio	93	93	90
Texas City, Texas	86	86	84
Total	1,817	1,794	1,731

Speedway

Our retail marketing gross margin for gasoline and distillate, which is the price paid by consumers less the cost of refined products, including transportation, consumer excise taxes and bankcard processing fees, impacts the Speedway segment profitability. Gasoline and distillate prices are volatile and are impacted by changes in supply and demand. Numerous factors impact gasoline and distillate demand throughout the year, including local competition, seasonal demand fluctuations, the available wholesale supply, the level of economic activity in our marketing areas and weather conditions. PADD 2 estimated 2016 gasoline demand grew for the fourth consecutive year to a record level, up 1.8 percent year over year in 2016, and 1.2 percent above the former record set in 2006. Continuing economic growth and year-on-year declines in prices supported gasoline demand in most

of the U.S., more than offsetting fleet fuel efficiency gains. Estimated gasoline demand in PADD 1, however, posted a small decline of 0.1 percent year over year in 2016 as prices increased year over year in the last four months of the year-exacerbated by Colonial Pipeline disruptions in September and late October. Distillate demand in 2016 faced enormous headwinds as a much warmer than normal first quarter suppressed heating oil demand and rail traffic (total carloads and intermodal) fell to a six-year low for the year. PADD 1 estimated 2016 distillate demand was down 5.8 percent year over year to a four year low, pulled down by a first quarter that was down nearly 15 percent year over year. PADD 2 distillate demand is estimated down 2.0 percent year over year, also a four year low. The gross margin on merchandise sold at our convenience stores historically has been less volatile and has contributed substantially to Speedway's gross margin. More than half of Speedway's gross margin was derived from merchandise sales in 2016. Speedway's convenience stores offer a wide variety of merchandise, including prepared foods, beverages and non-food items.

Inventories are carried at the lower of cost or market value. Costs of crude oil, refinery feedstocks and refined products are stated under the LIFO inventory costing method and aggregated on a consolidated basis for purposes of assessing if the cost basis of these inventories may have to be written down to market values. As of December 31, 2015, costs of inventories on a consolidated basis exceeded market value resulting in an LCM charge to cost of revenues of $370 million, of which $25 million was allocated to our Speedway segment. As of June 30, 2016, market value exceeded cost and we reversed the LCM inventory reserve resulting in a benefit to cost of revenues for the year ended December 31, 2016. As of December 31, 2016, market values for refined products continue to exceed their cost basis and, therefore, there is no LCM inventory market valuation reserve at the end of the year. Based on movements of refined product prices, future inventory valuation adjustments could have a negative effect to earnings. Such losses are subject to reversal in subsequent periods if prices recover.

Midstream

NGL and natural gas prices are volatile and are impacted by changes in fundamental supply and demand, as well as market uncertainty, availability of NGL transportation and fractionation capacity and a variety of additional factors. Our Midstream segment profitability is affected by prevailing commodity prices primarily as a result of processing or conditioning at our own or third-party processing plants, purchasing and selling or gathering and transporting volumes of natural gas at index-related prices and the cost of third-party transportation and fractionation services. To the extent that commodity prices influence the level of natural gas drilling volumes by our producer customers, such prices also affect Midstream segment profitability.

The profitability of our pipeline transportation operations included in our Midstream segment, primarily depends on tariff rates and the volumes shipped through the pipelines. A majority of the crude oil and refined product shipments on our common carrier pipelines serve our Refining & Marketing segment. The volume of crude oil that we transport is directly affected by the supply of, and refiner demand for, crude oil in the markets served directly by our crude oil pipelines. Key factors in this supply and demand balance are the production levels of crude oil by producers in various regions or fields, the availability and cost of alternative modes of transportation, the volumes of crude oil processed at refineries and refinery and transportation system maintenance levels. The volume of refined products that we transport is directly affected by the production levels of, and user demand for, refined products in the markets served by our refined product pipelines. In most of our markets, demand for gasoline and distillate peaks during the summer driving season, which extends from May through September of each year, and declines during the fall and winter months. As with crude oil, other transportation alternatives and system maintenance levels influence refined product movements.

Results of Operations

Consolidated Results of Operations

(In millions)	2016	2015	2016 vs. 2015 Variance	2014	2015 vs. 2014 Variance
Revenues and other income:					
Sales and other operating revenues (including consumer excise taxes)	$ 63,339	$ 72,051	$ (8,712)	$ 97,817	$ (25,766)
Income (loss) from equity method investments	(185)	88	(273)	153	(65)
Net gain on disposal of assets	32	7	25	21	(14)
Other income	178	112	66	111	1
Total revenues and other income	63,364	72,258	(8,894)	98,102	(25,844)
Costs and expenses:					
Cost of revenues (excludes items below)	49,170	55,583	(6,413)	83,770	(28,187)
Purchases from related parties	509	308	201	505	(197)
Inventory market valuation adjustment	(370)	370	(740)	-	370
Consumer excise taxes	7,506	7,692	(186)	6,685	1,007
Impairment expense	130	144	(14)	-	144
Depreciation and amortization	2,001	1,502	499	1,326	176
Selling, general and administrative expenses	1,605	1,576	29	1,375	201
Other taxes	435	391	44	390	1
Total costs and expenses	60,986	67,566	(6,580)	94,051	(26,485)
Income from operations	2,378	4,692	(2,314)	4,051	641
Net interest and other financial income (costs)	(556)	(318)	(238)	(216)	(102)
Income before income taxes	1,822	4,374	(2,552)	3,835	539
Provision for income taxes	609	1,506	(897)	1,280	226
Net income	1,213	2,868	(1,655)	2,555	313
Less net income (loss) attributable to:					
Redeemable noncontrolling interest	41	-	41	-	-
Noncontrolling interests	(2)	16	(18)	31	(15)
Net income attributable to MPC	$ 1,174	$ 2,852	$ (1,678)	$ 2,524	$ 328

Net income attributable to MPC decreased $1.68 billion in 2016 compared to 2015 and increased $328 million in 2015 compared to 2014, primarily due to our Refining & Marketing segment income from operations, which decreased $2.54 billion in 2016 compared to 2015 and increased $548 million in 2015 compared to 2014. The decrease in income from operations in 2016 for our Refining & Marketing segment was partially offset by increases in our Midstream and Speedway segments. Income from operations for 2016 includes a non-cash benefit of $370 million related to the reversal of the Company's LCM inventory valuation reserve and impairment charges of $356 million related to equity method investments and $130 million recorded by MPLX to impair a portion of the $2.21 billion of goodwill recorded in connection with the MarkWest Merger. Income from operations for 2015 includes a non-cash $370 million LCM inventory valuation charge and an impairment charge of $144 million. See Segment Results for additional information.

Sales and other operating revenues (including consumer excise taxes) decreased $8.71 billion in 2016 compared to 2015 and $25.77 billion in 2015 compared to 2014. The decrease in 2016 was primarily due to lower refined product sales prices and sales volumes. The decrease in 2015 was primarily due to lower refined product sales

prices, partially offset by increases in refined product sales volumes. MPC consolidated refined product sales decreased 32 mbpd in 2016 compared to 2015 and increased 163 mbpd in 2015 compared to 2014.

Income (loss) from equity method investments decreased $273 million in 2016 compared to 2015 and $65 million in 2015 compared to 2014. The decrease in 2016 was primarily due to impairment charges related to equity method investments of $356 million, partially offset by increases in income from new and existing pipeline and marine equity investments. The decrease in 2015 was primarily due to decreases in income from our ethanol affiliates of $69 million, mainly due to lower ethanol prices.

Net gain on disposal of assets increased $25 million in 2016 compared to 2015 and decreased $14 million in 2015 compared to 2014. The increase in 2016 was primarily due to the sale of certain Speedway locations during the year. The decrease in 2015 was primarily due to the sale of two terminals and related terminal assets in 2014.

Other income increased $66 million in 2016 compared to 2015. The increase in 2016 was primarily due to the inclusion of a full year of MarkWest other income and increased RIN sales. Other income in 2015 was comparable to 2014.

Cost of revenues decreased $6.41 billion in 2016 compared to 2015 and $28.19 billion in 2015 compared to 2014. The decrease in 2016 was primarily due to:

- a decrease in refined product cost of sales of $6.52 billion, primarily due to a decrease in our average crude oil costs of $7.26 per barrel; partially offset by
- an increase in refinery direct operating costs of $407 million, or $0.72 per barrel of total refinery throughput, primarily due to significantly higher turnaround activity in 2016 as compared to a lower than normal level of turnaround costs in 2015.

The decrease in 2015 was primarily due to:

- a decrease in refined product cost of sales of $28.67 billion, primarily due to a decrease in our average crude oil costs of $43.97 per barrel, partially offset by an increase in refined product sales volumes; and
- decreases in refinery direct operating costs of $726 million, or $1.40 per barrel of total refinery throughput, primarily due to significantly lower turnaround activity in 2015 and decreases in other manufacturing costs.

Purchases from related parties increased $201 million in 2016 compared to 2015 and decreased $197 million in 2015 compared 2014. The increase in 2016 was primarily due to:

- increases in volumes transported by Illinois Extension Pipeline, which is a pipeline affiliate that became operational in December of 2015, of $106 million;
- increases in transportation services provided by Crowley Ocean Partners, which is a new marine joint venture established in September of 2015, of $46 million; and
- increases in transportation services provided by Crowley Blue Water Partners, which is a new marine joint venture established in May of 2016, of $37 million.

The decrease in purchases from related parties in 2015 was primarily due to decreases in prices and volumes of ethanol purchases from The Andersons Marathon Ethanol LLC, The Andersons Clymers Ethanol LLC and The Andersons Albion Ethanol LLC, our affiliated ethanol operations, of $149 million, decreases in purchases from LOOP of $36 million and Explorer of $19 million.

Inventory market valuation adjustment decreased costs and expenses by $740 million in 2016 compared to 2015 and increased costs and expenses by $370 million in 2015 compared to 2014. The LCM inventory reserve recorded in 2015 of $370 million was reversed in 2016 due to increases in refined product prices during the second quarter of 2016 resulting in reductions to cost of revenues of $370 million in 2016.

Consumer excise taxes decreased $186 million in 2016 compared to 2015 and increased $1.01 billion in 2015 compared to 2014. The decrease in 2016 was primarily due to a decrease in taxable refined product sales volumes and tax rates in certain jurisdictions. The increase in 2015 was primarily due to increases in taxable refined product sales volumes, including the effects of the acquisition of Hess' Retail Operations and Related Assets.

Impairment expense decreased $14 million in 2016 compared to 2015 and increased $144 million in 2015 compared to 2014. Impairment expense in 2016 reflects a $130 million charge recorded by MPLX to impair a portion of the $2.21 billion of goodwill recorded in connection with the MarkWest Merger. In 2015, an impairment charge of $144 million was recorded related to the cancellation of the ROUX project at our Garyville refinery. Impairments related to equity method investments were recorded to Income (loss) from equity method investments and discussed above.

Depreciation and amortization increased $499 million in 2016 compared to 2015 and $176 million in 2015 compared to 2014. The increase in 2016 was primarily due to the depreciation of the fair value of the assets acquired in connection with the MarkWest Merger. The increase in 2015 was primarily due to the depreciation of the fair value of the assets acquired in connection with the acquisition of Hess' Retail Operations and Related Assets.

Selling, general and administrative expenses increased $29 million in 2016 compared to 2015 and $201 million in 2015 compared to 2014. The increase in 2016 was primarily due to the inclusion of MarkWest expenses, largely offset by decreases in contract services and other selling, general and administrative expenses. The increase in 2015 was primarily due to increases in employee benefit costs, contract services and additional expenses related to the convenience stores acquired from Hess along the East Coast and Southeast, partially offset by a decrease in pension settlement expenses.

Other taxes increased $44 million in 2016 compared to 2015. The increase in 2016 was primarily due to the inclusion of MarkWest's taxes. Other taxes in 2015 were comparable to 2014.

Net interest and other financial costs increased $238 million in 2016 compared to 2015 and $102 million in 2015 compared to 2014. The increase in 2016 was primarily due to interest on the debt assumed in the MarkWest Merger. The increase in 2015 was primarily due to senior notes issued by MPC in September 2014 to finance the acquisition of Hess' Retail Operations and Related Assets, higher levels of borrowings on MPLX's bank revolving credit facility used to fund the acquisition of Pipe Line Holdings and interest on the debt assumed from MarkWest. We capitalized interest of $63 million in 2016, $37 million in 2015 and $27 million in 2014. See Item 8. Financial Statements and Supplementary Data – Note 19 for further details.

Provision for income taxes decreased $897 million in 2016 compared to 2015 and increased $226 million in 2015 compared to 2014, primarily due to changes in our income before income taxes, which decreased $2.55 billion in 2016 compared to 2015 and increased $539 million in 2015 compared to 2014. The effective tax rates of 33 percent, 34 percent and 33 percent in 2016, 2015 and 2014, respectively, are slightly less than the U.S. statutory rate of 35 percent primarily due to certain permanent benefit differences, including the domestic manufacturing deduction, partially offset by state and local tax expense. See Item 8. Financial Statements and Supplementary Data – Note 12 for further details.

Segment Results

Revenues

Revenues are summarized by segment in the following table.

(In millions)	2016	2015	2014
Refining & Marketing	$ 53,817	$ 64,198	$ 91,733
Speedway	18,286	19,693	16,932
Midstream	2,636	964	824
Segment revenues	$ 74,739	$ 84,855	$ 109,489
Items included in both revenues and costs:			
Consumer excise taxes	$ 7,506	$ 7,692	$ 6,685

Refining & Marketing segment revenues decreased $10.38 billion in 2016 compared to 2015 and $27.54 billion in 2015 compared to 2014. The decrease in 2016 was primarily due to lower refined product sales prices and volumes. The decrease in 2015 was primarily due to lower product sales prices, partially offset by an increase in refined product sales volumes. The table below shows our Refining & Marketing segment refined product sales volumes and prices.

	2016	2015	2014
Refining & Marketing segment:			
Refined product sales volumes (thousands of barrels per day)[(a)]	2,259	2,289	2,125
Refined product sales destined for export (thousands of barrels per day)	296	319	275
Average refined product sales prices (dollars per gallon)	$ 1.47	$ 1.74	$ 2.71

[(a)] Includes intersegment sales and sales destined for export.

The table below shows the average refined product benchmark prices for our marketing areas.

(Dollars per gallon)	2016	2015	2014
Chicago spot unleaded regular gasoline	$ 1.33	$ 1.60	$ 2.55
Chicago spot ultra-low sulfur diesel	1.34	1.62	2.80
USGC spot unleaded regular gasoline	1.33	1.55	2.49
USGC spot ultra-low sulfur diesel	1.32	1.58	2.71

Refining & Marketing intersegment sales to our Speedway segment decreased $1.44 billion in 2016 compared to 2015 and increased $1.11 billion in 2015 compared to 2014. The decrease in 2016 was primarily due to a decrease in average refined product sales prices, partially offset by an increase in refined product sales volumes. The increases in 2015 were primarily due to sales to the approximate 1,245 convenience stores acquired in September 2014 along the East Coast and Southeast.

	2016	2015	2014
Refining & Marketing intersegment sales to Speedway:			
Intersegment sales (in millions)	$ 10,589	$ 12,024	$ 10,912
Refined product sales volumes (millions of gallons)	5,957	5,873	3,766
Average refined product sales prices (dollars per gallon)	$ 1.48	$ 1.74	$ 2.89

Speedway segment revenues decreased $1.41 billion in 2016 compared to 2015 and increased $2.76 billion in 2015 compared to 2014. The decrease in 2016 was due to a decrease in gasoline and distillate sales of $1.52 billion primarily due to a decrease in gasoline and distillate selling prices of $0.27 per gallon. The increase in 2015 was due to increases in gasoline and distillate sales of $1.43 billion and merchandise sales of $1.27 billion. The increase in gasoline and distillate sales in 2015 was primarily due to a volume increase of 2.1 billion gallons, driven by an increase in the number of convenience stores, as noted in the table below, partially offset by a decrease in gasoline and distillate selling prices of $0.89 per gallon. The increase in merchandise sales in 2015 was primarily due to increases in the number of convenience stores and higher same store sales.

The following table includes certain revenue and operating statistics for the Speedway segment.

	2016	2015	2014
Convenience stores at period-end[(a)]	2,733	2,766	2,746
Gasoline & distillate sales (millions of gallons)	6,094	6,038	3,942
Average gasoline & distillate sales prices (dollars per gallon)	$ 2.09	$ 2.36	$ 3.25
Merchandise sales (in millions)	$ 5,007	$ 4,879	$ 3,611
Same store gasoline sales volume (period over period)	(0.4)%	(0.3)%	(0.7)%
Same store merchandise sales (period over period)[(b)]	3.2%	4.1%	5.0%

(a) The 2014 year-end amount includes the convenience stores acquired from Hess on September 30, 2014.

(b) Excludes cigarettes.

Midstream segment revenue increased $1.67 billion in 2016 compared to 2015 and $140 million in 2015 compared to 2014. The increases in 2016 and 2015 were primarily due to the inclusion of MarkWest's operating results in Midstream segment income following the merger with MPLX from the December 4, 2015 merger date.

The following table shows certain operating statistics for our Midstream segment as well as benchmark prices for natural gas and NGLs.

	2016	2015	2014
Crude oil and refined product pipeline throughputs (mbpd)[(a)]	2,311	2,191	2,119
Gathering system throughput (MMcf/d)[(b)]	3,275	3,075	—
Natural gas processed (MMcf/d)[(b)]	5,761	5,468	—
C2 (ethane) + NGLs fractionated (mbpd)[(b)]	335	307	—
Natural Gas NYMEX HH ($ per MMBtu)[(b)]	$ 2.55	$ 2.04	—
C2 + NGL Pricing ($ per gallon)[(b)(c)]	$ 0.47	$ 0.40	—

(a) On owned common-carrier pipelines, excluding equity method investments.

(b) Beginning December 4, 2015, which was the effective date of the MarkWest Merger.

(c) C2 + NGL pricing based on Mont Belvieu prices assuming an NGL barrel of approximately 35 percent ethane, 35 percent propane, six percent Iso-Butane, 12 percent normal butane and 12 percent natural gasoline.

Income from Operations

Income from operations and income before income taxes by segment are summarized in the following table.

(In millions)	2016	2015	2014
Income from operations by segment:			
Refining & Marketing[a]	$ 1,543	$ 4,086	$ 3,538
Speedway	734	673	544
Midstream[a][b]	871	380	342
Items not allocated to segments:			
Corporate and other unallocated items[a][b]	(277)	(299)	(277)
Pension settlement expenses[c]	(7)	(4)	(96)
Impairment[d]	(486)	(144)	-
Income from operations	2,378	4,692	4,051
Net interest and other financial income (costs)	(556)	(318)	(216)
Income before income taxes	$ 1,822	$ 4,374	$ 3,835

(a) In 2016, segment reporting was revised in connection with the contribution of MPC's inland marine business to MPLX. The results of the inland marine business are now presented in the Midstream segment. Previously, these results were reported in the Refining & Marketing segment. Comparable prior period information has been recast to reflect this revised segment presentation.

(b) Included in the Midstream segment for 2016, 2015 and 2014 are $11 million, $20 million and $19 million, respectively, of corporate overhead expenses attributable to MPLX. These expenses are not currently allocated to other segments and are reported in Corporate and other unallocated items.

(c) See Item 8. Financial Statements and Supplementary Data – Note 22.

(d) See Item 8. Financial Statements and Supplementary Data – Notes 15, 16 and 17.

Refining & Marketing segment income from operations decreased $2.54 billion in 2016 compared to 2015 and increased $548 million in 2015 compared to 2014. Segment income in 2015 includes a $345 million non-cash charge related to the Company's LCM inventory reserve, which was reversed in 2016 due to increased refined product prices, resulting in a non-cash benefit to segment income of $345 million. The favorable LCM inventory adjustment variance was more than offset by the unfavorable effects of lower crack spreads and higher direct operating costs due to refinery turnarounds. The increase in 2015 was primarily due to higher crack spreads, favorable effects of changes in market structure on crude oil acquisition prices, more favorable net product price realizations compared to spot market reference prices and lower direct operating costs. These favorable impacts were partially offset by higher crude oil and feedstock acquisition costs relative to benchmark LLS crude oil, the unfavorable effect of lower commodity prices on volumetric gains and an LCM inventory valuation charge of $345 million.

The following table presents certain market indicators that we believe are helpful in understanding the results of our Refining & Marketing segment's business.

(Dollars per barrel)	2016	2015	2014
Chicago LLS 6-3-2-1 crack spread[(a)(b)]	$ 7.19	$ 10.67	$ 9.56
USGC LLS 6-3-2-1 crack spread[(a)]	6.80	9.11	7.23
Blended 6-3-2-1 crack spread[(a)(c)]	6.96	9.70	8.11
LLS	45.01	52.35	96.90
WTI	43.47	48.76	92.91
LLS – WTI crude oil differential[(a)]	1.55	3.59	3.99
Sweet/Sour crude oil differential[(a)(d)]	6.52	6.10	6.97

(a) All spreads and differentials are measured against prompt LLS.

(b) Calculation utilizes USGC three percent residual fuel oil price as a proxy for Chicago three percent residual fuel oil price.

(c) Blended Chicago/USGC crack spread is 40/60 percent in 2016, 38/62 percent in 2015 and 38/62 percent in 2014 based on MPC's refining capacity by region in each period.

(d) LLS (prompt) – [delivered cost of sour crude oil: Arab Light, Kuwait, Maya, Western Canadian Select and Mars].

Based on the market indicators above and our refinery throughputs, we estimate the following impacts on Refining & Marketing segment income from operations for 2016 compared to 2015 and for 2015 compared to 2014:

- The USGC LLS 6-3-2-1 crack spread decreased $2.31 per barrel in 2016 compared to 2015 which had a negative impact on segment income of $1.13 billion and increased $1.88 per barrel in 2015 compared to 2014 which had a positive impact on segment income of $940 million.
- The Chicago LLS 6-3-2-1 crack spread decreased $3.48 per barrel in 2016 compared to 2015 which had a negative impact on segment income of $846 million and increased $1.11 per barrel in 2015 compared to 2014 which had a positive impact on segment income of $400 million.
- The sweet/sour crude oil differential increased $0.42 per barrel in 2016 compared to 2015 which had a positive impact on segment income of $334 million and narrowed $0.87 per barrel in 2015 compared to 2014 which had a negative impact on segment income of $27 million.
- The LLS-WTI crude oil differential narrowed $2.04 per barrel in 2016 compared to 2015 resulting in a negative impact on segment income of $260 million. The LLS-WTI crude oil differential narrowed $0.40 per barrel in 2015 compared to 2014. This decrease was more than offset by an increase in volume of WTI resulting in a positive impact on segment income of $6 million.

The market indicators shown above use spot market values and an estimated mix of crude purchases and product sales. Differences in our results compared to these market indicators, including product price realizations, the mix of crudes purchased and their costs, the effects of LCM inventory valuation adjustments, the effects of market structure on our crude oil acquisition prices, and other items like refinery yields and other feedstock variances, had an estimated negative impact on Refining & Marketing segment income of $304 million in 2016 compared to 2015 and $1.03 billion in 2015 compared to 2014. The significant elements of the negative impact for 2016 were unfavorable product price realizations and unfavorable crude acquisition costs relative to the market indicators, partially offset by the reversal of the Company's LCM inventory valuation reserve that was recorded in 2015. The significant elements of the negative impact for 2015 were unfavorable crude oil acquisition costs relative to the market indicators, the unfavorable effect of lower commodity prices on volumetric gains, the price differential of charge and blend stock relative to crude oil and the LCM inventory valuation charge, partially offset by the effects of changes in market structure on our crude oil acquisition costs and product price realizations.

The cost of inventories of crude oil and refinery feedstocks, refined products and merchandise is determined primarily under the LIFO method. In the second quarter of 2016, we had recognized the effects of an interim liquidation of our refined products inventories which we did not expect to reinstate by year end resulting in a pre-tax charge of approximately $54 million to income. Based on year end refined product inventories, which were higher than inventories at the beginning of the year, we had a build in refined product inventories for 2016. Therefore, we recognized the effects of this annual build in our refined products in the fourth quarter of 2016 which had the effect of reversing the second quarter charge. In the fourth quarter of 2015, we recorded a LIFO charge of $45 million as a result of annual decreased levels in refined products and crude inventory volumes. Since the LIFO costs for these inventory layers were based on 2014 costs, the liquidation resulted in a charge to income. In the fourth quarter of 2014, we recognized annual builds in our refined product and crude inventories. These builds were based on January 2014 costs which were significantly higher than fourth quarter 2014 costs resulting in a benefit of approximately $240 million to income. For the full year, we recognized a LIFO charge of $2 million in 2016 and $78 million in 2015 as compared to a LIFO benefit of $265 million in 2014.

The following table summarizes our refinery throughputs.

	2016	2015	2014
Refinery throughputs (*thousands of barrels per day*):			
Crude oil refined	1,699	1,711	1,622
Other charge and blendstocks	151	177	184
Total	1,850	1,888	1,806
Sour crude oil throughput percent	60	55	52
WTI-priced crude oil throughput percent	19	20	19

The following table includes certain key operating statistics for the Refining & Marketing segment.

	2016	2015	2014
Refining & Marketing gross margin (dollars per barrel)[(a)]	$ 11.26	$ 15.25	$ 15.05
Refinery direct operating costs (dollars per barrel):[(b)]			
Planned turnaround and major maintenance	$ 1.83	$ 1.13	$ 1.80
Depreciation and amortization	1.47	1.39	1.41
Other manufacturing[(c)]	4.09	4.15	4.86
Total	$ 7.39	$ 6.67	$ 8.07

(a) Sales revenue less cost of refinery inputs and purchased products, divided by total refinery throughputs. Excludes the LCM inventory valuation adjustments.

(b) Per barrel of total refinery throughputs.

(c) Includes utilities, labor, routine maintenance and other operating costs.

Refinery direct operating costs increased $0.72 per barrel in 2016 compared to 2015 and decreased $1.40 per barrel in 2015 compared to 2014. These changes in 2016 compared to 2015 and 2015 compared to 2014 include an increase in planned turnaround and major maintenance costs of $0.70 per barrel and a decrease of $0.67 per barrel, respectively, as well as decreases in other manufacturing costs of $0.06 per barrel and $0.71, respectively. The increase in planned turnaround and major maintenance costs for 2016 are primarily attributable to higher turnaround activity at the Galveston Bay, Garyville and Robinson refineries and a lower than normal schedule of turnaround activity in 2015, partially offset by a decrease in turnaround activity at the Catlettsburg refinery. The decrease in planned turnaround and major maintenance costs for 2015 was primarily attributable to lower turnaround activity at the Galveston Bay, Robinson and Garyville refineries, partially offset by an increase in

turnaround activity at the Detroit refinery. In 2016, the decrease in other manufacturing costs was primarily due to lower routine maintenance costs, general and administrative expenses and waste costs. In 2015, the decrease in other manufacturing costs was primarily attributable to lower energy costs and routine maintenance costs.

We purchase RINs to satisfy a portion of our RFS2 compliance. Our expenses associated with purchased RINs were $288 million in 2016, $212 million in 2015 and $141 million in 2014. In 2015, we recorded a $46 million charge to recognize increased estimated costs for compliance based on the renewable fuel standards for 2014 and 2015 proposed by the EPA in May 2015 and finalized in November 2015, particularly those for biomass-based diesel and advanced biofuels. Excluding this charge, the increases in both years were primarily due to the effect of increased purchases of biomass-based diesel RINs at increased prices. In 2015, this increase was partially offset by decreased purchases of ethanol RINs at decreased prices.

Speedway segment income from operations increased $61 million in 2016 compared to 2015 and $129 million in 2015 compared to 2014. Segment income in 2015 includes a $25 million non-cash charge related to the Company's LCM inventory reserve, which was reversed in 2016 due to increased refined product prices, resulting in a non-cash benefit to segment income of $25 million. In addition to the favorable LCM inventory adjustment variance, the remaining increase during the year was primarily due to higher merchandise gross margin of $67 million and gains from asset sales, partially offset by lower gasoline and distillate gross margin of $91 million, or $0.0167 per gallon. The increase in 2015 was primarily due to an increases in our gasoline and distillate gross margin of $401 million and our merchandise gross margin of $393 million, partially offset by higher operating expenses. The increase in 2015 was primarily attributable the full year effect of the acquisition of Hess' Retail Operations and Related Assets on September 30, 2014. The increases in merchandise gross margin in both years were related to a combination of higher merchandise and food sales and improved margins.

The following table includes sales volume and gross margin statistics for the Speedway segment.

	2016	2015	2014
Gasoline & distillate sales (millions of gallons)	6,094	6,038	3,942
Gasoline & distillate gross margin (dollars per gallon)[a]	$ 0.1656	$ 0.1823	$ 0.1775
Merchandise gross margin (in millions)	$ 1,435	$ 1,368	$ 975
Merchandise gross margin percent	28.7%	28.0%	27.0%

[a] The price paid by consumers less the cost of refined products, including transportation, consumer excise taxes and bankcard processing fees, divided by gasoline and distillate sales volume. Excludes LCM inventory valuation adjustments.

Midstream segment income from operations increased $491 million in 2016 compared to 2015 and $38 million in 2015 compared to 2014. The increase in 2016 was primarily due to the inclusion of MarkWest's operating results following the merger with MPLX, as well as earnings from new and existing pipeline and marine equity investments. The increase in 2015 was primarily due to the inclusion of the financial results of MarkWest, which are reflected in Midstream segment income from the December 4, 2015 MarkWest Merger date, partially offset by $30 million of transaction costs related to the acquisition.

Corporate and other unallocated expenses decreased $22 million in 2016 compared to 2015 and increased $22 million in 2015 compared to 2014. The decrease in 2016 is primarily due to increased allocations of corporate costs to the segments. The increase in 2015 was primarily due to a lower allocation of employee benefit costs to the segments.

Unallocated items in 2016 also includes impairment charges of $486 million resulting from non-cash charges of $267 million related to the indefinite deferral of the Sandpiper pipeline project, $130 million related to the goodwill recognized in connection with the MarkWest Merger and $89 million related to an MPLX equity method investment. Unallocated items in 2015 includes an impairment charge of $144 million recorded in the third quarter of 2015 related to the cancellation of the ROUX project at our Garyville refinery. See Item 8. Financial Statements and Supplementary Data – Note 17 for additional information on the impairment charges.

We recorded pretax pension settlement expenses of $7 million in 2016, $4 million in 2015 and $96 million in 2014 resulting from the level of employee lump sum retirement distributions that occurred during these years.

Liquidity and Capital Resources

Cash Flows

Our cash and cash equivalents balance was $887 million at December 31, 2016 compared to $1.13 billion at December 31, 2015. Net cash provided by (used in) operating activities, investing activities and financing activities for the past three years is presented in the following table.

(In millions)	2016	2015	2014
Net cash provided by (used in):			
Operating activities	$ 3,986	$ 4,061	$ 3,110
Investing activities	(2,941)	(3,441)	(4,543)
Financing activities	(1,285)	(987)	635
Total	$ (240)	$ (367)	$ (798)

Net cash provided by operating activities decreased $75 million in 2016 compared to 2015, primarily due to decreased operating results, partially offset by favorable changes in working capital of $1.22 billion compared to 2015. Net cash provided by operating activities increased $951 million in 2015 compared to 2014, primarily due to increased operating results, partially offset by unfavorable changes in working capital of $330 million compared to 2014. The above changes in working capital exclude changes in short-term debt.

For 2016, changes in working capital were a net $200 million source of cash, primarily due to an increase in accounts payable and accrued liabilities, partially offset by increases in current receivables and inventories. Changes from December 31, 2015 to December 31, 2016 per the consolidated balance sheets, excluding the impact of acquisitions, were as follows:

- Accounts payable increased $850 million from year-end 2015, primarily due to higher crude oil payable prices.
- Current receivables increased $690 million from year-end 2015, primarily due to higher refined product and crude oil receivable prices.
- Excluding the change in the Company's LCM inventory valuation reserve of $370 million, inventories increased $61 million from year-end 2015, primarily due to higher crude oil and refined product inventory volumes.

For 2015, changes in working capital were a net $1.02 billion use of cash, primarily due to a decrease in accounts payable and accrued liabilities, partially offset by decreases in current receivables and inventories. Accounts payable decreased $1.92 billion from year-end 2014, primarily due to lower crude oil payable prices and volumes; current receivables decreased $1.13 billion from year-end 2014, primarily due to lower refined product and crude oil receivable prices and lower crude oil receivable volumes; and inventories decreased $47 million from year-end 2014, excluding a $370 million LCM inventory valuation charge, primarily due to lower refined product and crude oil inventory volumes.

For 2014, changes in working capital were a net $694 million use of cash, primarily due to a decrease in accounts payable and accrued liabilities and an increase in inventories, partially offset by a decrease in current receivables. Excluding the impact of acquisitions, accounts payable decreased $1.65 billion from year-end 2013, primarily due to lower crude oil payable prices, partially offset by higher crude oil payable volumes; inventories decreased $796 million from year-end 2013, primarily due to higher refined product and crude oil inventory volumes; and current receivables decreased $1.63 billion from year-end 2013, primarily due to lower refined product and crude oil receivable prices.

Cash flows used in investing activities decreased $500 million in 2016 compared to 2015 and $1.10 billion in 2015 compared to 2014. The investing activity is further discussed below.

The consolidated statements of cash flows exclude changes to the consolidated balance sheets that did not affect cash. A reconciliation of additions to property, plant and equipment to total capital expenditures and investments follows for each of the last three years.

(In millions)	2016	2015	2014
Additions to property, plant and equipment per consolidated statements of cash flows	$ 2,892	$ 1,998	$ 1,480
Non-cash additions to property, plant and equipment	—	5	4
Asset retirement expenditures	6	1	2
Increase (decrease) in capital accruals	(127)	94	95
Total capital expenditures	2,771	2,098	1,581
Acquisitions[(a)]	10	13,854	2,744
Investments in equity method investees	288	331	413
Total capital expenditures and investments	$ 3,069	$ 16,283	$ 4,738

(a) The 2016 acquisitions include purchase price adjustments related to the MarkWest Merger. The 2015 acquisitions include the MarkWest Merger. The 2014 acquisitions include the acquisition of Hess' Retail Operations and Related Assets. The acquisition numbers above include property, plant and equipment, equity investments, intangibles and goodwill. See Item 8. Financial Statements and Supplementary Data – Note 5 for further details.

Capital expenditures and investments for each of the last three years are summarized by segment below.

(In millions)	2016	2015	2014
Capital expenditures and investments:[(a)(b)]			
Refining & Marketing	$ 1,101	$ 1,045	$ 1,043
Speedway	303	501	2,981
Midstream	1,521	14,545	604
Corporate and Other[(c)]	144	192	110
Total	$ 3,069	$ 16,283	$ 4,738

(a) Capital expenditures include changes in capital accruals.

(b) Includes $10 million in 2016 for purchase price adjustments related to the MarkWest Merger, $13.85 billion in 2015 for the MarkWest Merger and $2.71 billion in 2014 for the acquisition of Hess' Retail Operations and Related Assets. See Item 8. Financial Statements and Supplementary Data – Note 5.

(c) Includes capitalized interest of $63 million, $37 million and $27 million for 2016, 2015 and 2014, respectively.

The MarkWest Merger comprised 85 percent of our total capital expenditures and investments in 2015. The acquisition of Hess' Retail Operations and Related Assets comprised 57 percent of our total capital expenditures and investments in 2014.

Cash provided by disposal of assets totaled $101 million, $21 million and $27 million in 2016, 2015 and 2014, respectively. Cash provided in 2016 was primarily due the sale of Speedway assets in the normal course of business.

Net investments were a use of cash of $262 million in 2016 compared to $327 million in 2015 and $404 million in 2014. The change in 2016 compared to 2015 was primarily due to decreases in contributions to the SAX pipeline project of $114 million, the Sandpiper pipeline project of $57 million and Crowley Ocean Partners of $38 million, partially offset by increases in contributions to Crowley Coastal Partners of $82 million and MPLX equity method investments of $74 million. The change in 2015 compared to 2014 was primarily due to a decrease in contributions to the SAX pipeline project of $121 million and the 2014 investment in Explorer, partially offset by contributions to Crowley Ocean Partners of $72 million.

Financing activities were a $1.29 billion use of cash in 2016, a $987 million use of cash in 2015 and a $635 million source of cash in 2014.

Long-term debt borrowings and repayments were a net $1.42 billion use of cash in 2016 compared to a $746 million source of cash in 2015 and a $3.22 billion source of cash in 2014. During 2016, MPLX used proceeds from its issuance of the MPLX Preferred Units to repay amounts outstanding under the MPLX bank revolving credit facility and MPC chose to prepay $500 million under its term loan. During 2015, we used $763 million of the net proceeds from the issuance of $1.5 billion of MPC senior notes to extinguish our obligation for the $750 million aggregate principal amount of senior notes due in 2016 and MPLX used proceeds from its issuance of $500 million aggregate of principal amount of MPLX senior notes to repay $385 million outstanding under the MPLX bank revolving credit facility. See Item 8. Financial Statements and Supplementary Data – Note 19 for additional information on our long-term debt.

Cash proceeds from the issuance of MPLX common units were $776 million in 2016 and $221 million in 2014. Cash proceeds from the issuance of MPLX Preferred Units was $984 million in 2016. See Item 8. Financial Statements and Supplementary Data – Note 4 for further discussion of MPLX.

Cash used in common stock repurchases totaled $197 million in 2016, $965 million in 2015 and $2.13 billion in 2014 associated with the share repurchase plans authorized by our board of directors. The table below summarizes our total share repurchases. See Item 8. Financial Statements and Supplementary Data – Note 9 for further discussion of the share repurchase plans.

(In millions, except per share data)	2016	2015	2014
Number of shares repurchased	4	19	49
Cash paid for shares repurchased	$ 197	$ 965	$ 2,131
Effective average cost per delivered share	$ 41.84	$ 50.31	$ 44.31

Cash used in dividend payments totaled $719 million in 2016, $613 million in 2015 and $524 million in 2014. The increases were primarily due to increases in our base dividend, partially offset by a decrease in the number of outstanding shares of our common stock as a result of share repurchases. Dividends per share were $1.36 in 2016, $1.14 in 2015 and $0.92 in 2014.

Cash used in financing activities in all three years included a portion of the payments to the seller of the Galveston Bay refinery under the contingent earnout provisions of the purchase and sale agreement.

Derivative Instruments

See Item 7A. Quantitative and Qualitative Disclosures about Market Risk for a discussion of derivative instruments and associated market risk.

Capital Resources

Our liquidity totaled $4.8 billion at December 31, 2016 consisting of:

(In millions)	December 31, 2016 Total Capacity	Outstanding Borrowings	Available Capacity
Bank revolving credit facility[a]	$ 2,500	$ -	$ 2,500
364 day bank revolving credit facility	1,000	-	1,000
Trade receivables facility[b]	684	-	684
Total	$ 4,184	$ -	$ 4,184
Cash and cash equivalents[c]			653
Total liquidity			$ 4,837

(a) Excludes MPLX's $2 billion bank revolving credit facility, which had no borrowings and $3 million of letters of credit outstanding as of December 31, 2016.

(b) Availability under our $750 million trade receivables facility is a function of refined product selling prices. As of January 31, 2017, eligible trade receivables supported borrowings of $750 million.

(c) Excludes $234 million of MPLX cash and cash equivalents.

Because of the alternatives available to us, including internally generated cash flow and access to capital markets, including a commercial paper program, we believe that our short-term and long-term liquidity is adequate to fund not only our current operations, but also our near-term and long-term funding requirements, including capital spending programs, the repurchase of shares of our common stock, dividend payments, defined benefit plan contributions, repayment of debt maturities and other amounts that may ultimately be paid in connection with contingencies.

As discussed in the "Strategic Actions to Enhance Shareholder Value" section in the Corporate Overview, we expect MPLX to finance the planned dropdown transactions with debt and equity in approximately equal proportions in the aggregate for all planned dropdowns of assets. The equity financing will be funded through MPLX common units issued to us. In conjunction with the completion of the dropdowns, we also expect to exchange our economic interests in the general partner of MPLX, including incentive distribution rights, for newly issued MPLX common units. Cash proceeds from the dropdowns and ongoing MPLX common unit distributions to us are expected to fund the substantial ongoing return of capital to MPC shareholders in a manner consistent with maintaining an investment-grade credit profile.

See discussion of the February 2017 issuance of MPLX senior notes due 2027 and 2047 under the MPLX LP section of the Executive Summary.

Commercial Paper – On February 26, 2016, we established a commercial paper program that allows us to have a maximum of $2 billion in commercial paper outstanding, with maturities up to 397 days from the date of issuance. We do not intend to have outstanding commercial paper borrowings in excess of available capacity under our bank revolving credit facilities. At December 31, 2016, we had no amounts outstanding under the commercial paper program.

MPC Bank Revolving Credit Facility – On July 20, 2016, we entered into a credit agreement with a syndicate of lenders to replace our existing MPC bank revolving credit facility due in 2017. The new agreement provides for a four-year $2.5 billion bank revolving credit facility ("four-year revolving credit facility") maturing on July 20, 2020. Additionally, we entered into a 364-day $1 billion bank revolving credit facility maturing on July 19, 2017. The financial covenants contained in these agreements remain the same as under the previous bank revolving credit facility.

Our four-year revolving credit facility includes letter of credit issuing capacity of up to $2.0 billion and swingline loan capacity of up to $100 million. We may increase our borrowing capacity under our four-year revolving credit facility by up to an additional $500 million, subject to certain conditions including the consent of the lenders whose commitments would be increased. In addition, the maturity date of the four-year revolving credit facility may be extended for up to two additional one-year periods subject to the approval of lenders holding a majority of the commitments then outstanding, provided that the commitments of any non-consenting lenders will terminate on the then-effective maturity date.

There were no borrowings or letters of credit outstanding at December 31, 2016.

Trade receivables facility – On July 20, 2016, we amended our trade receivables facility to, among other things, reduce the capacity from $1 billion to $750 million and to extend the maturity date to July 19, 2019. The reduction in capacity reflects the lower refined product price environment.

As of December 31, 2016, eligible trade receivables supported borrowings of $684 million. There were no borrowings outstanding at December 31, 2016. Availability under our trade receivables facility is a function of refined product selling prices.

MPLX Credit Agreement – MPLX is party to a credit agreement, dated as of November 20, 2014, and amended as of October 27, 2015 ("MPLX credit agreement"), providing for a $2 billion bank revolving credit facility with a maturity date of December 4, 2020 and an outstanding $250 million term loan facility with a maturity date of November 20, 2019.

The MPLX credit agreement includes letter of credit issuing capacity of up to $250 million and swingline loan capacity of up to $100 million. The revolving borrowing capacity under the MPLX credit agreement may be increased by up to an additional $500 million, subject to certain conditions, including the consent of the lenders whose commitments would increase. In addition, the maturity date of the bank revolving credit facility may be extended from time-to-time during its term to a date that is one year after the then-effective date, subject to the approval of lenders holding the majority of the loans and commitments then outstanding, provided that the commitments of any non-consenting lenders will be terminated on the then-effective maturity date.

The maturity date for the term loan facility may be extended for up to two additional one-year periods subject to the consent of the lenders holding a majority of the outstanding term loan borrowings, provided that the portion of the term loan borrowings held by any non-consenting lenders will continue to be due and payable on the then-effective maturity date.

During 2016, MPLX borrowed $434 million under the bank revolving credit facility, at an average interest rate of 1.9 percent, per annum, and repaid $1.31 billion of outstanding borrowings. At December 31, 2016, MPLX had no borrowings and $3 million of letters of credit outstanding under the bank revolving credit facility, resulting in total unused loan availability of $2.0 billion.

See Item 8. Financial Statements and Supplementary Data – Note 19 for further discussion of our debt.

The term loan agreement, the MPC bank revolving credit facility and the MPLX credit agreement contain representations and warranties, affirmative and negative covenants and events of default that we consider usual and customary for agreements of these types. The financial covenant included in the term loan agreement and the MPC bank revolving credit facility requires us to maintain, as of the last day of each fiscal quarter, a ratio of Consolidated Net Debt to Total Capitalization (as defined in the term loan agreement and the MPC bank revolving credit facility) of no greater than 0.65 to 1.00. As of December 31, 2016, we were in compliance with this debt covenant with a ratio of Consolidated Net Debt to Total Capitalization of 0.31 to 1.00, as well as the other covenants contained in the term loan agreement and the MPC bank revolving credit facility.

The MPLX credit agreement includes certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for an agreement of this type. The MPLX credit agreement includes a financial covenant that requires MPLX to maintain a ratio of Consolidated Total Debt as of the end of each fiscal quarter to Consolidated EBITDA (both as defined in the MPLX credit agreement) for the prior four fiscal quarters of no greater than 5.0 to 1.0 (or 5.5 to 1.0 for up to two fiscal quarters following certain acquisitions). Consolidated EBITDA is subject to adjustments for certain acquisitions completed and capital projects undertaken during the relevant period. Other covenants restrict MPLX and certain of its subsidiaries from incurring debt, creating liens on its assets and entering into transactions with affiliates. As of December 31, 2016, MPLX was in compliance with the covenants contained in the MPLX credit agreement, including a ratio of Consolidated Total Debt to Consolidated EBITDA of 3.26 to 1.0.

Our intention is to maintain an investment-grade credit profile. As of January 31, 2017, the credit ratings on our and MPLX's senior unsecured debt were at or above investment grade level as follows.

Company	Rating Agency	Rating
MPC	Moody's	Baa2 (negative outlook)
	Standard & Poor's	BBB (stable outlook)
	Fitch	BBB (negative watch)
MPLX	Moody's	Baa3 (stable outlook)
	Standard & Poor's	BBB- (stable outlook)
	Fitch	BBB- (stable outlook)

The ratings reflect the respective views of the rating agencies. Although it is our intention to maintain a credit profile that supports an investment-grade rating, there is no assurance that these ratings will continue for any given period of time. The ratings may be revised or withdrawn entirely by the rating agencies if, in their respective judgments, circumstances so warrant.

Neither the revolving credit facility, the MPLX credit agreement nor our trade receivables facility contains credit rating triggers that would result in the acceleration of interest, principal or other payments in the event that our credit ratings are downgraded. However, any downgrades of our senior unsecured debt to below investment-grade ratings would increase the applicable interest rates, yields and other fees payable under the revolving credit facility and our trade receivables facility. In addition, a downgrade of our senior unsecured debt rating to below investment-grade levels could, under certain circumstances, decrease the amount of trade receivables that are eligible to be sold under our trade receivables facility, impact our ability to purchase crude oil on an unsecured basis and could result in us having to post letters of credit under existing transportation services agreements.

Debt-to-Total-Capital Ratio

Our debt-to-total capital ratio (total debt to total debt-plus-equity) was 33 percent and 38 percent at December 31, 2016 and 2015, respectively.

(In millions)	December 31, 2016	December 31, 2015
Debt due within one year	$ 28	$ 29
Long-term debt	10,544	11,896
Total debt	$ 10,572	$ 11,925
Calculation of debt-to-total capital ratio:		
Total debt	$ 10,572	$ 11,925
Redeemable noncontrolling interest	1,000	-
Equity	20,203	19,675
Total capitalization	$ 31,775	$ 31,600
Debt-to-total capital ratio	33%	38%

Redeemable noncontrolling interest – On May 13, 2016, MPLX completed the private placement of approximately 30.8 million 6.5 percent Series A Convertible Preferred Units (the "MPLX Preferred Units") at a cash price of $32.50 per unit. The MPLX Preferred Units are considered redeemable securities due to the existence of redemption provisions upon a deemed liquidation event which is considered outside MPLX's control. Therefore they are presented as temporary equity in the mezzanine section of the consolidated balance sheets. We have recorded the MPLX Preferred Units at their issuance date fair value, net of issuance costs.

MPC Senior Notes – On December 14, 2015, we completed a public offering of $1.5 billion in aggregate principal amount of unsecured senior notes ("MPC senior notes"). The net proceeds from the offering of the MPC senior notes were $1.49 billion, after deducting underwriting discounts and estimated offering expenses. We used approximately $763 million of the net proceeds from this offering to fund the extinguishment of our obligation for the $750 million aggregate principal amount of our 3.500% senior notes due 2016.

The MPC senior notes are unsecured and unsubordinated obligations of ours and rank equally with all our other existing and future unsecured and unsubordinated indebtedness.

MPLX and MarkWest Senior Notes – In connection with the MarkWest Merger, MPLX assumed MarkWest's outstanding debt, which included $4.1 billion aggregate principal amount of senior notes. On December 22, 2015, approximately $4.04 billion aggregate principal amount of MarkWest's outstanding senior notes were exchanged for an aggregate principal amount of approximately $4.04 billion of new unsecured senior notes issued by MPLX in an exchange offer and consent solicitation undertaken by MPLX and MarkWest.

On February 12, 2015, MPLX completed a public offering of $500 million aggregate principal amount of four percent unsecured senior notes due February 15, 2025. The net proceeds, which were approximately $495 million after deducting underwriting discounts, were used to repay the amounts outstanding under the MPLX bank revolving credit facility, as well as for general partnership purposes.

See discussion of the February 2017 issuance of MPLX senior notes due 2027 and 2047 under the MPLX LP section of the Executive Summary.

See Item 8. Financial Statements and Supplementary Data – Note 19 for further discussion of our debt.

Capital Requirements

Our board approved a 2017 capital spending and investment plan of $1.7 billion for MPC, excluding MPLX. MPLX's capital investment plan includes $1.4 billion to $1.7 billion of organic growth capital, not including anticipated dropdowns and acquisitions previously discussed or their respective subsequent capital spending, and approximately $100 million of maintenance capital. Additional details related to expected 2017 capital spending and investments are discussed in the Capital Budget Outlook section below.

During the second quarter of 2016, we paid BP $200 million for the third period's contingent earnout related to the acquisition of the Galveston Bay refinery and have paid BP $569 million to-date leaving $131 million remaining under the total cap of $700 million. See Item 8. Financial Statements and Supplementary Data – Note 17.

In 2016, we made pension contributions totaling $119 million. We have no required funding for 2017, but may make voluntary contributions at our discretion.

On January 27, 2017, our board of directors approved a $0.36 per share dividend, payable March 10, 2017 to shareholders of record at the close of business on February 16, 2017.

Since January 1, 2012, our board of directors has approved $10.0 billion in total share repurchase authorizations and we have repurchased a total of $7.44 billion of our common stock, leaving $2.56 billion available for repurchases as of December 31, 2016. Under these authorizations, we have acquired 202 million shares at an average cost per share of $36.77.

We may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, accelerated share repurchases or open market solicitations for shares, some of which may be effected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including execution of our strategic initiatives, market and business conditions, and such repurchases may be discontinued at any time.

We may, from time to time, repurchase notes in the open market, in privately-negotiated transactions or otherwise in such volumes, at such prices and upon such other terms as we deem appropriate.

Contractual Cash Obligations

The table below provides aggregated information on our consolidated obligations to make future payments under existing contracts as of December 31, 2016. The contractual obligations detailed below do not include our contractual obligations to MPLX under various fee-based commercial agreements as these transactions are eliminated in the consolidated financial statements.

(In millions)	Total	2017	2018-2019	2020-2021	Later Years
Long-term debt[a]	$ 17,324	$ 514	$ 2,056	$ 2,559	$ 12,195
Capital lease obligations[b]	382	45	85	84	168
Operating lease obligations	1,590	254	409	358	569
Purchase obligations:[c]					
Crude oil, feedstock, refined product and renewable fuel contracts[d]	10,500	7,387	1,395	1,325	393
Transportation and related contracts	4,730	443	1,084	968	2,235
Contracts to acquire property, plant and equipment[e]	899	864	35	-	-
Service, materials and other contracts[f]	1,860	474	473	382	531
Total purchase obligations	17,989	9,168	2,987	2,675	3,159
Other long-term liabilities reported in the consolidated balance sheet[g]	2,088	213	442	410	1,023
Total contractual cash obligations	$ 39,373	$ 10,194	$ 5,979	$ 6,086	$ 17,114

(a) Includes interest payments for our senior notes, term loans and the MPLX credit agreement and commitment and administrative fees for our credit agreement, the MPLX credit agreement and our trade receivables facility.

(b) Capital lease obligations represent future minimum payments.

(c) Includes both short- and long-term purchases obligations.

(d) These contracts include variable price arrangements. For purposes of this disclosure we have estimated prices to be paid primarily based on futures curves for the commodities to the extent available.

(e) Includes $131 million of contingent consideration associated with the acquisition of the Galveston Bay Refinery and Related Assets.

(f) Primarily includes contracts to purchase services such as utilities, supplies and various other maintenance and operating services.

(g) Primarily includes obligations for pension and other postretirement benefits including medical and life insurance, which we have estimated through 2024. See Item 8. Financial Statements and Supplementary Data – Note 22.

Off-Balance Sheet Arrangements

Off-balance sheet arrangements comprise those arrangements that may potentially impact our liquidity, capital resources and results of operations, even though such arrangements are not recorded as liabilities under accounting principles generally accepted in the United States. Our off-balance sheet arrangements are limited to indemnities and guarantees that are described below. Although these arrangements serve a variety of our business purposes, we are not dependent on them to maintain our liquidity and capital resources, and we are not aware of any circumstances that are reasonably likely to cause the off-balance sheet arrangements to have a material adverse effect on liquidity and capital resources.

We have provided various guarantees related to equity method investees. In conjunction with the Spinoff, we entered into various indemnities and guarantees to Marathon Oil. These arrangements are described in Item 8. Financial Statements and Supplementary Data – Note 25.

Capital Budget Outlook

We expect to spend $1.7 billion in 2017 on capital projects and investments, excluding MPLX, capitalized interest and acquisitions we may complete. We continuously evaluate our capital budget and make changes as conditions warrant.

Refining & Marketing

The Refining & Marketing segment's forecasted 2017 capital spending and investments is $1.17 billion, which includes approximately $325 million for refining margin enhancement projects and approximately $840 million for refinery-sustaining capital. A number of these projects span multiple years.

The $325 million forecasted for refining margin enhancement projects includes spending for Garyville distillate projects, Galveston Bay export capacity expansion and approximately $85 million for the STAR project.

The remaining $840 million budget is primarily allocated to maintaining facilities and meeting regulatory requirements, including the EPA's Tier 3 gasoline fuel standards, at our refineries.

Speedway

The Speedway segment's 2017 capital forecast of approximately $380 million is focused on building new stores and remodeling and rebuilding existing retail locations in its core markets. We have identified numerous opportunities for new convenience stores or store rebuilds in our existing market, with a continued focus in Pennsylvania and Tennessee, as well as opportunities for growth in new markets including Georgia, South Carolina and the Florida panhandle. We also plan to capitalize on diesel demand growth by building out our network of commercial fueling lane locations, within our core market which cater to local and regional transport fleets.

Midstream

MPLX's capital investment plan includes $1.4 billion to $1.7 billion of organic growth capital, not including anticipated dropdowns and acquisitions previously discussed or their respective subsequent capital spending, and approximately $100 million of maintenance capital. Approximately $1.0 billion to $1.3 billion of these growth investments are for the development of natural gas and gas liquids infrastructure to support MPLX's producer customers, primarily in the prolific Marcellus Shale. The remaining $400 million of growth capital is planned for the development of various crude oil and refined petroleum products infrastructure projects, including a build-out of Utica Shale infrastructure in connection with the recently completed Cornerstone Pipeline, a butane cavern in Robinson, Illinois, and a tank farm expansion in Texas City, Texas.

The Midstream segment's forecasted 2017 capital spend, excluding MPLX, is approximately $90 million.

Corporate and Other

The 2017 capital forecast includes approximately $100 million to support corporate activities.

Our opinions concerning liquidity and capital resources and our ability to avail ourselves in the future of the financing options mentioned in the above forward-looking statements are based on currently available information. If this information proves to be inaccurate, future availability of financing may be adversely affected. Factors that affect the availability of financing include our performance (as measured by various factors, including cash provided by operating activities), the state of worldwide debt and equity markets, investor perceptions and expectations of past and future performance, the global financial climate, and, in particular, with respect to borrowings, the levels of our outstanding debt and credit ratings by rating agencies. The discussion of

liquidity and capital resources above also contains forward-looking statements regarding expected capital requirements and investment spending, costs for projects under construction, project completion dates and expectations or projections about strategies and goals for growth, upgrades and expansion. The forward-looking statements about our capital and investment budget are based on current expectations, estimates and projections and are not guarantees of future performance. Actual results may differ materially from these expectations, estimates and projections and are subject to certain risks, uncertainties and other factors, some of which are beyond our control and are difficult to predict. Some factors that could cause actual results to differ materially include our ability to achieve the strategic and other objectives related to the strategic initiatives discussed herein; adverse changes in laws including with respect to tax and regulatory matters; inability to agree with the MPLX conflicts committee with respect to the timing of and value attributed to assets identified for dropdown; changes to the expected construction costs and timing of projects; continued/further volatility in and/or degradation of market and industry conditions; the availability and pricing of crude oil and other feedstocks; slower growth in domestic and Canadian crude supply; completion of pipeline capacity to areas outside the U.S. Midwest; consumer demand for refined products; transportation logistics; the reliability of processing units and other equipment; MPC's ability to successfully implement growth opportunities; modifications to MPLX earnings and distribution growth objectives; compliance with federal and state environmental, economic, health and safety, energy and other policies and regulations, including the cost of compliance with the Renewable Fuel Standard, and/or enforcement actions initiated thereunder; changes to MPC's capital budget; other risk factors inherent to MPC's industry; These factors, among others, could cause actual results to differ materially from those set forth in the forward-looking statements. For additional information on forward-looking statements and risks that can affect our business, see "Disclosures Regarding Forward-Looking Statements" and Item 1A. Risk Factors in this Annual Report on Form 10-K.

Transactions with Related Parties

We believe that transactions with related parties were conducted under terms comparable to those with unrelated parties. See Item 8. Financial Statements and Supplementary Data – Note 7 for discussion of activity with related parties.

Environmental Matters and Compliance Costs

We have incurred and may continue to incur substantial capital, operating and maintenance, and remediation expenditures as a result of environmental laws and regulations. If these expenditures, as with all costs, are not ultimately reflected in the prices of our products and services, our operating results will be adversely affected. We believe that substantially all of our competitors must comply with similar environmental laws and regulations. However, the specific impact on each competitor may vary depending on a number of factors, including the age and location of its operating facilities, marketing areas, production processes and whether it is also engaged in the petrochemical business or the marine transportation of crude oil and refined products.

Legislation and regulations pertaining to fuel specifications, climate change and greenhouse gas emissions have the potential to materially adversely impact our business, financial condition, results of operations and cash flows, including costs of compliance and permitting delays. The extent and magnitude of these adverse impacts cannot be reliably or accurately estimated at this time because specific regulatory and legislative requirements have not been finalized and uncertainty exists with respect to the measures being considered, the costs and the time frames for compliance, and our ability to pass compliance costs on to our customers. For additional information see Item 1A. Risk Factors.

Our environmental expenditures, including non-regulatory expenditures, for each of the last three years were:

(In millions)	2016	2015	2014
Capital	$ 302	$ 222	$ 102
Compliance:[a]			
Operating and maintenance	541	355	397
Remediation[b]	40	53	36
Total	$ 883	$ 630	$ 535

(a) Based on the American Petroleum Institute's definition of environmental expenditures.

(b) These amounts include spending charged against remediation reserves, where permissible, but exclude non-cash provisions recorded for environmental remediation.

We accrue for environmental remediation activities when the responsibility to remediate is probable and the amount of associated costs can be reasonably estimated. As environmental remediation matters proceed toward ultimate resolution or as additional remediation obligations arise, charges in excess of those previously accrued may be required.

New or expanded environmental requirements, which could increase our environmental costs, may arise in the future. We believe we comply with all legal requirements regarding the environment, but since not all of them are fixed or presently determinable (even under existing legislation) and may be affected by future legislation or regulations, it is not possible to predict all of the ultimate costs of compliance, including remediation costs that may be incurred and penalties that may be imposed.

Our environmental capital expenditures accounted for ten percent, nine percent and five percent of capital expenditures excluding the MarkWest Merger and the acquisition of Hess' Retail Operations and Related Assets in 2016, 2015 and 2014, respectively. Our environmental capital expenditures are expected to approximate $422 million, or 12 percent, of total capital expenditures in 2017. Predictions beyond 2017 can only be broad-based estimates, which have varied, and will continue to vary, due to the ongoing evolution of specific regulatory requirements, the possible imposition of more stringent requirements and the availability of new technologies, among other matters. Based on currently identified projects, we anticipate that environmental capital expenditures will be approximately $400 million in 2018; however, actual expenditures may vary as the number and scope of environmental projects are revised as a result of improved technology or changes in regulatory requirements and could increase if additional projects are identified or additional requirements are imposed.

For more information on environmental regulations that impact us, or could impact us, see Item 1. Business – Environmental Matters, Item 1A. Risk Factors and Item 3. Legal Proceedings.

Critical Accounting Estimates

The preparation of financial statements in accordance with US GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of revenues and expenses during the respective reporting periods. Accounting estimates are considered to be critical if (1) the nature of the estimates and assumptions is material due to the levels of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change; and (2) the impact of the estimates and assumptions on financial condition or operating performance is material. Actual results could differ from the estimates and assumptions used.

Fair Value Estimates

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. There are three approaches for measuring the fair value of assets and liabilities: the market approach, the income approach and the cost approach, each of which includes multiple valuation techniques. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to measure fair value by converting future amounts, such as cash flows or earnings, into a single present value amount using current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace the service capacity of an asset. This is often referred to as current replacement cost. The cost approach assumes that the fair value would not exceed what it would cost a market participant to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence.

The fair value accounting standards do not prescribe which valuation technique should be used when measuring fair value and does not prioritize among the techniques. These standards establish a fair value hierarchy that prioritizes the inputs used in applying the various valuation techniques. Inputs broadly refer to the assumptions that market participants use to make pricing decisions, including assumptions about risk. Level 1 inputs are given the highest priority in the fair value hierarchy while Level 3 inputs are given the lowest priority. The three levels of the fair value hierarchy are as follows:

- Level 1 – Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets as of the measurement date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis.

- Level 2 – Observable market-based inputs or unobservable inputs that are corroborated by market data. These are inputs other than quoted prices in active markets included in Level 1, which are either directly or indirectly observable as of the measurement date.

- Level 3 – Unobservable inputs that are not corroborated by market data and may be used with internally developed methodologies that result in management's best estimate of fair value.

Valuation techniques that maximize the use of observable inputs are favored. Assets and liabilities are classified in their entirety based on the lowest priority level of input that is significant to the fair value measurement. The assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the placement of assets and liabilities within the levels of the fair value hierarchy. We use a market or income approach for recurring fair value measurements and endeavor to use the best information available. See Item 8. Financial Statements and Supplementary Data – Note 17 for disclosures regarding our fair value measurements.

Significant uses of fair value measurements include:

- assessment of impairment of long-lived assets;
- assessment of impairment of intangible assets:
- assessment of impairment of goodwill;
- assessment of impairment of equity method investments;
- recorded values for assets acquired and liabilities assumed in connection with acquisitions; and
- recorded values of derivative instruments.

Impairment Assessments of Long-Lived Assets, Intangible Assets, Goodwill and Equity Method Investments

Fair value calculated for the purpose of testing our long-lived assets, intangible assets, goodwill and equity method investments for impairment is estimated using the expected present value of future cash flows method and comparative market prices when appropriate. Significant judgment is involved in performing these fair value estimates since the results are based on forecasted assumptions. Significant assumptions include:

- *Future margins on products produced and sold*. Our estimates of future product margins are based on our analysis of various supply and demand factors, which include, among other things, industry-wide capacity, our planned utilization rate, end-user demand, capital expenditures and economic conditions. Such estimates are consistent with those used in our planning and capital investment reviews.
- *Future volumes.* Our estimates of future refinery, pipeline throughput and natural gas and NGL processing volumes are based on internal forecasts prepared by our Refining & Marketing and Midstream segments operations personnel.
- *Discount rate commensurate with the risks involved*. We apply a discount rate to our cash flows based on a variety of factors, including market and economic conditions, operational risk, regulatory risk and political risk. This discount rate is also compared to recent observable market transactions, if possible. A higher discount rate decreases the net present value of cash flows.
- *Future capital requirements*. These are based on authorized spending and internal forecasts.

We base our fair value estimates on projected financial information which we believe to be reasonable. However, actual results may differ from these projections.

The need to test for impairment can be based on several indicators, including a significant reduction in prices of or demand for products produced, a poor outlook for profitability, a significant reduction in pipeline throughput volumes, a significant reduction in natural gas or NGLs processed, a significant reduction in refining margins, other changes to contracts or changes in the regulatory environment in which the asset or equity method investment is located.

Long-lived assets used in operations are assessed for impairment whenever changes in facts and circumstances indicate that the carrying value of the assets may not be recoverable based on the expected undiscounted future cash flow of an asset group. For purposes of impairment evaluation, long-lived assets must be grouped at the lowest level for which independent cash flows can be identified, which generally is the refinery and associated distribution system level for Refining & Marketing segment assets, site level for Speedway segment convenience stores, and the plant level or pipeline system level for Midstream segment assets. If the sum of the undiscounted estimated pretax cash flows is less than the carrying value of an asset group, fair value is calculated, and the carrying value is written down if greater than the calculated fair value.

Unlike long-lived assets, goodwill must be tested for impairment at least annually, and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. Goodwill is tested for impairment at the reporting unit level. We have thirteen reporting units, nine of which have goodwill allocated to them. At December 31, 2016, we had a total of $3.59 billion of goodwill recorded on our consolidated balance sheet.

Based on an interim goodwill impairment test, MPLX recorded approximately $130 million of impairment expense related to charges recorded during the first and second quarters of 2016, which is reflected in our consolidated financial statements.

MPC has nine reporting units with goodwill totaling approximately $3.59 billion as of November 30, 2016. Step 1 of the annual impairment analysis resulted in the fair value of the reporting units exceeding their carrying value

by percentages ranging from approximately 8 percent to 303 percent. The reporting unit with fair value exceeding its carrying value by approximately 8 percent has goodwill of $228 million at December 31, 2016. An increase of 0.50 percent to the discount rate used to estimate the fair value of the reporting units would not have resulted in a goodwill impairment charge as of November 30, 2016. Significant assumptions used to estimate the reporting units' fair value included estimates of future cash flows. If estimates for future cash flows, which are impacted primarily by commodity prices and producers' production plans, were to decline, the overall reporting units' fair value would decrease, resulting in potential goodwill impairment charges. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the impairment tests will prove to be an accurate prediction of the future.

Equity method investments are assessed for impairment whenever factors indicate an other than temporary loss in value. Factors providing evidence of such a loss include the fair value of an investment that is less than its carrying value, absence of an ability to recover the carrying value or the investee's inability to generate income sufficient to justify our carrying value. At December 31, 2016, we had $3.83 billion of investments in equity method investments recorded on our consolidated balance sheet.

An estimate of the sensitivity to net income resulting from impairment calculations is not practicable, given the numerous assumptions (e.g., pricing, volumes and discount rates) that can materially affect our estimates. That is, unfavorable adjustments to some of the above listed assumptions may be offset by favorable adjustments in other assumptions.

MPLX performed a fixed asset impairment analysis during the second quarter of 2016 for Ohio Condensate Company ("OCC") resulting in an impairment charge of $96 million within OCC's financial statements. Approximately $58 million of the charge was attributable to MPLX based on its 60 percent ownership of OCC and was recorded in Income (loss) from equity method investments on the accompanying Consolidated Statements of Income. Furthermore, to determine the potential equity method impairment charge, an impairment analysis in accordance with ASC Topic 323 was performed during the second quarter resulting in an additional impairment charge of approximately $31 million, recorded in Income (loss) from equity method investments on the accompanying Consolidated Statements of Income.

For purposes of the second quarter impairment analysis, the fair value of OCC was determined based on applying the discounted cash flow method, which is an income approach, and the guideline public company method, which is a market approach. The significant assumptions used to estimate the fair value under the discounted cash flow method included management's best estimates of the expected results using a probability weighted average set of cash flow forecasts and using a discount rate of 11.2 percent. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As such, the fair value of the OCC equity method investment and its underlying fixed assets represents a Level 3 measurement.

As of December 31, 2016, MPLX determined that there were no material events or changes in circumstances that would indicate an other-than-temporary decline in its equity method investments.

During the third quarter of 2016, Enbridge Energy Partners announced that its affiliate, North Dakota Pipeline, would withdraw certain pending regulatory applications for its Sandpiper pipeline project and that the project would be deferred indefinitely. These decisions were considered to indicate an impairment of the costs capitalized to date on the project. As the operator of North Dakota Pipeline and the entity responsible for maintaining its financial records, Enbridge completed a fixed asset impairment analysis as of August 31, 2016, in accordance with ASC Topic 360. Based on the estimated liquidation value of the fixed assets, an impairment charge was recorded by North Dakota Pipeline. Based on our 37.5 percent ownership of North Dakota Pipeline, we recognized approximately $267 million of this charge in the third quarter of 2016 through "Income (loss) from equity method investments" on the accompanying consolidated statements of income which impaired virtually all of our $301 million investment in the project. Also, in accordance with ASC Topic 323, we

completed an assessment to determine the potential additional equity method impairment charge to be recorded on our consolidated financial statements resulting from an other-than-temporary impairment. The result of this analysis indicated no additional charge was required to be recorded.

The fixed assets of North Dakota Pipeline related to the Sandpiper pipeline project consist primarily of project management and engineering costs, pipe, valves, motors and other equipment, land and easements. The fair value of fixed assets was estimated based on a market approach using the estimated price that would be received to sell pipe, land and other related equipment in its current condition, considering the current market conditions for sale of these assets and length of disposal period. The valuation considered a range of potential selling prices from various alternatives that could be used to dispose of these assets. As such, the fair value of the North Dakota Pipeline equity method investment and its underlying assets represents a Level 3 measurement. North Dakota Pipeline expects to dispose of these assets through orderly transactions.

Centennial experienced a significant reduction in shipment volumes in the second half of 2011 that has continued through 2015. At December 31, 2016, Centennial was not shipping product. As a result, we continued to evaluate the carrying value of our equity investment in Centennial. We concluded that no impairment was required given our assessment of its fair value based on market participant assumptions for various potential uses and future cash flows of Centennial's assets. If market conditions were to change and the owners of Centennial are unable to find an alternative use for the assets, there could be a future impairment of our Centennial interest. As of December 31, 2016, our equity investment in Centennial was $35 million and we had a $29 million guarantee associated with 50 percent of Centennial's outstanding debt. See Item 8. Financial Statements and Supplementary Data – Note 25 for additional information on the debt guarantee.

The above discussion contains forward-looking statements with respect to the carrying value of our Centennial equity investment. Factors that could affect the carrying value of our Centennial equity investment include, but are not limited to, a change in business conditions, a further decline or improvement in the long-term outlook of the potential uses of Centennial's assets and the pursuit of different strategic alternatives for such assets. These factors, among others, could cause actual results to differ materially from those set forth in the forward-looking statements.

Acquisitions

In accounting for business combinations, acquired assets, assumed liabilities and contingent consideration are recorded based on estimated fair values as of the date of acquisition. The excess or shortfall of the purchase price when compared to the fair value of the net tangible and identifiable intangible assets acquired, if any, is recorded as goodwill or a bargain purchase gain, respectively. A significant amount of judgment is involved in estimating the individual fair values of property, plant and equipment, intangible assets, contingent consideration and other assets and liabilities. We use all available information to make these fair value determinations and, for certain acquisitions, engage third-party consultants for assistance.

The fair value of assets and liabilities, including contingent consideration, as of the acquisition date are often estimated using a combination of approaches, including the income approach, which requires us to project related future cash inflows and outflows and apply an appropriate discount rate; the cost approach, which requires estimates of replacement costs and depreciation and obsolescence estimates; and the market approach which uses market data and adjusts for entity-specific differences. The estimates used in determining fair values are based on assumptions believed to be reasonable but which are inherently uncertain. Accordingly, actual results may differ from the projected results used to determine fair value.

For the customer contract intangibles for our Midstream segment, we must estimate the expected life of the relationships with our customers on an individual basis. The estimates used in determining fair values are based on assumptions believed to be reasonable but which are inherently uncertain. Accordingly, actual results may differ from the projected results used to determine fair value.

The fair value of the contingent consideration we expect to pay to BP is re-measured each quarter using an income approach, with changes in fair value recorded in cost of revenues. The amount of cash to be paid under the arrangement is based on both a market-based crack spread and refinery throughput volumes for the months during which the contract applies, as well as established thresholds that cap the annual and total payment. We used internal and external forecasts for the crack spread and internal forecasts for refinery throughput volumes and applied an appropriate risk-adjusted discount rate to the range of cash flows indicated by various scenarios to determine the fair value of the arrangement. See Item 8. Financial Statements and Supplementary Data – Note 5 for additional information on our acquisitions. See Item 8. Financial Statements and Supplementary Data – Note 17 for additional information on fair value measurements.

Derivatives

We record all derivative instruments at fair value. Substantially all of our commodity derivatives are cleared through exchanges which provide active trading information for identical derivatives and do not require any assumptions in arriving at fair value. Fair value estimation for all our derivative instruments is discussed in Item 8. Financial Statements and Supplementary Data – Note 17. Additional information about derivatives and their valuation may be found in Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

Variable Interest Entities

We evaluate all legal entities in which we hold an ownership or other pecuniary interest to determine if the entity is a VIE. Our interests in a VIE are referred to as variable interests. Variable interests can be contractual, ownership or other pecuniary interests in an entity that change with changes in the fair value of the VIE's assets. When we conclude that we hold an interest in a VIE we must determine if we are the entity's primary beneficiary. A primary beneficiary is deemed to have a controlling financial interest in a VIE. This controlling financial interest is evidenced by both (a) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and (b) the obligation to absorb losses that could potentially be significant to the VIE or the right to receive benefits that could potentially be significant to the VIE. We consolidate any VIE when we determine that we are the primary beneficiary. We must disclose the nature of any interests in a VIE that is not consolidated.

Significant judgment is exercised in determining that a legal entity is a VIE and in evaluating our interest in a VIE. We use primarily a qualitative analysis to determine if an entity is a VIE. We evaluate the entity's need for continuing financial support; the equity holder's lack of a controlling financial interest; and/or if an equity holder's voting interests are disproportionate to its obligation to absorb expected losses or receive residual returns. We evaluate our interests in a VIE to determine whether we are the primary beneficiary. We use a primarily qualitative analysis to determine if we are deemed to have a controlling financial interest in the VIE, either on a standalone basis or as part of a related party group. We continually monitor our interests in legal entities for changes in the design or activities of an entity and changes in our interests, including our status as the primary beneficiary to determine if the changes require us to revise our previous conclusions.

MPLX is a VIE because the limited partners of MPLX do not have substantive kick-out or substantive participating rights over the general partner. We are the primary beneficiary of MPLX because in addition to significant economic interest, we also have the power, through our 100 percent ownership of the general partner, to control the decisions that most significantly impact MPLX. We therefore consolidate MPLX and record a noncontrolling interest for the 74.5 percent interest owned by the public.

MarkWest Utica EMG, a natural gas and NGL processing joint venture, is a VIE; however, we are not considered to be the primary beneficiary. As a result, it is accounted for under the equity method. Changes in the design or nature of the activities of this entity, or our involvement with the entity, may require us to reconsider our conclusions on the entity's status as a VIE and/or our status as the primary beneficiary. Such reconsideration requires significant judgment and understanding of the organization. This could result in the consolidation of the

entity which would have a significant impact on our financial statements. Ohio Gathering is a subsidiary of MarkWest Utica EMG and is a VIE. If we were to consolidate MarkWest Utica EMG, Ohio Gathering would need to be assessed for consolidation or deconsolidation.

Variable Interest Entities are discussed in Item 8. Financial Statements and Supplementary Data – Note 6 .

Pension and Other Postretirement Benefit Obligations

Accounting for pension and other postretirement benefit obligations involves numerous assumptions, the most significant of which relate to the following:

- the discount rate for measuring the present value of future plan obligations;
- the expected long-term return on plan assets;
- the rate of future increases in compensation levels;
- health care cost projections; and
- the mortality table used in determining future plan obligations.

We utilize the work of third-party actuaries to assist in the measurement of these obligations. We have selected different discount rates for our funded pension plans and our unfunded retiree health care plans due to the different projected benefit payment patterns. The selected rates are compared to various similar bond indexes for reasonableness. In determining the assumed discount rates, we use our third-party actuary's discount rate model. This model calculates an equivalent single discount rate for the projected benefit plan cash flows using a yield curve derived from Aa bond yields. The yield curve represents a series of annualized individual spot discount rates from 0.5 to 99 years. The bonds used have an average rating of Aa or higher by a recognized rating agency and generally only non-callable bonds are included. Outlier bonds that have a yield to maturity that deviate significantly from the average yield within each maturity grouping are not included. Each issue is required to have at least $250 million par value outstanding.

Of the assumptions used to measure the year-end obligations and estimated annual net periodic benefit cost, the discount rate has the most significant effect on the periodic benefit cost reported for the plans. Decreasing the discount rates of 3.90 percent for our pension plans and 4.25 percent for our other postretirement benefit plans by 0.25 percent would increase pension obligations and other postretirement benefit plan obligations by $44 million and $26 million, respectively, and would increase defined benefit pension expense and other postretirement benefit plan expense by $3 million and $1 million, respectively.

The long-term asset rate of return assumption considers the asset mix of the plans (currently targeted at approximately 51 percent equity securities and 49 percent fixed income securities for the primary funded pension plan), past performance and other factors. Certain components of the asset mix are modeled with various assumptions regarding inflation and returns. In addition, our long-term asset rate of return assumption is compared to those of other companies and to historical returns for reasonableness. We used the 6.50 percent long-term rate of return to determine our 2016 defined benefit pension expense. After evaluating activity in the capital markets, along with the current and projected plan investments, we did not change the asset rate of return for our primary plan from 6.50 percent effective for 2017. Decreasing the 6.50 percent asset rate of return assumption by 0.25 percent would increase our defined benefit pension expense by $4 million.

Compensation change assumptions are based on historical experience, anticipated future management actions and demographics of the benefit plans.

Health care cost trend assumptions are developed based on historical cost data, the near-term outlook and an assessment of likely long-term trends.

We utilized the 2016 mortality tables from the U.S. Society of Actuaries.

Item 8. Financial Statements and Supplementary Data – Note 22 includes detailed information about the assumptions used to calculate the components of our annual defined benefit pension and other postretirement plan expense, as well as the obligations and accumulated other comprehensive loss reported on the year-end balance sheets.

Contingent Liabilities

We accrue contingent liabilities for legal actions, claims, litigation, environmental remediation, tax deficiencies related to operating taxes and third-party indemnities for specified tax matters when such contingencies are both probable and estimable. We regularly assess these estimates in consultation with legal counsel to consider resolved and new matters, material developments in court proceedings or settlement discussions, new information obtained as a result of ongoing discovery and past experience in defending and settling similar matters. Actual costs can differ from estimates for many reasons. For instance, settlement costs for claims and litigation can vary from estimates based on differing interpretations of laws, opinions on degree of responsibility and assessments of the amount of damages. Similarly, liabilities for environmental remediation may vary from estimates because of changes in laws, regulations and their interpretation, additional information on the extent and nature of site contamination and improvements in technology.

We generally record losses related to these types of contingencies as cost of revenues or selling, general and administrative expenses in the consolidated statements of income, except for tax deficiencies unrelated to income taxes, which are recorded as other taxes. For additional information on contingent liabilities, see Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Environmental Matters and Compliance Costs.

An estimate of the sensitivity to net income if other assumptions had been used in recording these liabilities is not practical because of the number of contingencies that must be assessed, the number of underlying assumptions and the wide range of reasonably possible outcomes, in terms of both the probability of loss and the estimates of such loss.

Accounting Standards Not Yet Adopted

As discussed in Item 8. Financial Statements and Supplementary Data – Note 3 to our audited consolidated financial statements, certain new financial accounting pronouncements will be effective for our financial statements in the future.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

General

We are exposed to market risks related to the volatility of crude oil and refined product prices. We employ various strategies, including the use of commodity derivative instruments, to hedge the risks related to these price fluctuations. We are also exposed to market risks related to changes in interest rates and foreign currency exchange rates. As of December 31, 2016, we did not have any financial derivative instruments to hedge the risks related to interest rate fluctuations; however, we have used them in the past, and we continually monitor the market and our exposure and may enter into these agreements again in the future. We are at risk for changes in fair value of all of our derivative instruments; however, such risk should be mitigated by price or rate changes related to the underlying commodity or financial transaction.

We believe that our use of derivative instruments, along with our risk assessment procedures and internal controls, does not expose us to material adverse consequences. While the use of derivative instruments could materially affect our results of operations in particular quarterly or annual periods, we believe that the use of these instruments will not have a material adverse effect on our financial position or liquidity.

See Item 8. Financial Statements and Supplementary Data – Notes 17 and 18 for more information about the fair value measurement of our derivatives, as well as the amounts recorded in our consolidated balance sheets and statements of income. We do not designate any of our commodity derivative instruments as hedges for accounting purposes.

Commodity Price Risk

Refining & Marketing

Our strategy is to obtain competitive prices for our products and allow operating results to reflect market price movements dictated by supply and demand. We use a variety of commodity derivative instruments, including futures and options, as part of an overall program to hedge commodity price risk. We also authorize the use of the market knowledge gained from these activities to do a limited amount of trading not directly related to our physical transactions.

We use commodity derivative instruments on crude oil and refined product inventories to hedge price risk associated with inventories above or below LIFO inventory targets. We also use derivative instruments related to the acquisition of foreign-sourced crude oil and ethanol blended with refined petroleum products to hedge price risk associated with market volatility between the time we purchase the product and when we use it in the refinery production process or it is blended. In addition, we may use commodity derivative instruments on fixed price contracts for the sale of refined products to hedge risk by converting the refined product sales to market-based prices. The majority of these derivatives are exchange-traded contracts. We closely monitor and hedge our exposure to market risk on a daily basis in accordance with policies approved by our board of directors. Our positions are monitored daily by a risk control group to ensure compliance with our stated risk management policy.

Midstream

NGL and natural gas prices are volatile and are impacted by changes in fundamental supply and demand, as well as market uncertainty, availability of NGL transportation and fractionation capacity and a variety of additional factors that are beyond MPLX's control. MPLX's profitability is directly affected by prevailing commodity prices primarily as a result of processing or conditioning at its own or third-party processing plants, purchasing and selling or gathering and transporting volumes of natural gas at index-related prices and the cost of third-party transportation and fractionation services. To the extent that commodity prices influence the level of natural gas drilling by MPLX's producer customers, such prices also affect profitability. To protect MPLX financially

against adverse price movements and to maintain more stable and predictable cash flows so that it can meet its cash distribution objectives, debt service and capital plans, MPLX executes a strategy governed by its risk management policy. MPLX has a committee comprised of senior management that oversees risk management activities, continually monitors the risk management program and adjusts its strategy as conditions warrant. Derivative contracts utilized for crude oil, natural gas and NGLs are swaps and options traded on the OTC market and fixed price forward contracts. As a result of MPLX's current derivative positions, it believes that it has mitigated a portion of its expected commodity price risk through the fourth quarter of 2017. MPLX would be exposed to additional commodity risk in certain situations such as if producers under-deliver or over-deliver products or if processing facilities are operated in different recovery modes. In the event that MPLX has derivative positions in excess of the product delivered or expected to be delivered, the excess derivative positions may be terminated.

MPLX management conducts a standard credit review on counterparties to derivative contracts, and it has provided the counterparties with a guaranty as credit support for its obligations. A separate agreement with certain counterparties allows MarkWest Liberty Midstream to enter into derivative positions without posting cash collateral. MPLX uses standardized agreements that allow for offset of certain positive and negative exposures in the event of default or other terminating events, including bankruptcy.

Open Derivative Positions and Sensitivity Analysis

The table below sets forth information relating to our significant open commodity derivative contracts as of December 31, 2016.

	December 31, 2016			
	Position	Total Barrels *(In thousands)*	Weighted Average Price *(Per barrel)*	Benchmark
Crude Oil[a]				
Exchange-traded	Long	53,028	$50.62	CME and ICE Crude[c][d]
Exchange-traded	Short	(52,373)	$52.13	CME and ICE Crude[c][d]
OTC	Short	(37)	$52.10	
	Position	MMBtu	Weighted Average Price *(Per MMBtu)*	
Natural Gas				
OTC	Long	297,017	$ 2.93	
	Position	Total Gallons *(In thousands)*	Weighted Average Price *(Per gallon)*	Benchmark
Refined Products[b]				
Exchange-traded	Long	196,434	$ 1.64	CME Heating Oil and RBOB[c][e]
Exchange-traded	Short	(221,970)	$ 1.68	CME Heating Oil and RBOB[c][e]
OTC	Short	(64,212)	$ 0.61	

(a) 98.7 percent of exchange-traded contracts expire in the first quarter of 2017.

(b) 100 percent of exchange-traded contracts expire in the first quarter of 2017.

(c) Chicago Mercantile Exchange ("CME").

(d) Intercontinental Exchange ("ICE").

(e) Reformulated gasoline Blendstock for Oxygenate Blending ("RBOB").

Sensitivity analysis of the incremental effects on income from operations ("IFO") of hypothetical 10 percent and 25 percent increases and decreases in commodity prices for open commodity derivative instruments as of December 31, 2016 is provided in the following table.

(In millions)	Change in IFO from a Hypothetical Price Increase of		Change in IFO from a Hypothetical Price Decrease of	
	10%	25%	10%	25%
As of December 31, 2016				
Crude	$ 65,682	$ 180,196	$ 103,186	$ 272,641
Refined products	(4,986)	(12,465)	4,986	12,465
Embedded derivatives	(5,356)	(13,389)	5,356	13,389

We remain at risk for possible changes in the market value of commodity derivative instruments; however, such risk should be mitigated by price changes in the underlying physical commodity. Effects of these offsets are not reflected in the above sensitivity analysis.

We evaluate our portfolio of commodity derivative instruments on an ongoing basis and add or revise strategies in anticipation of changes in market conditions and in risk profiles. Changes to the portfolio after December 31, 2016 would cause future IFO effects to differ from those presented above.

Interest Rate Risk

We are impacted by interest rate fluctuations related to our debt obligations. At December 31, 2016, our debt was primarily comprised of the $2.25 billion aggregate principal amount of fixed rate senior notes issued February 1, 2011, the $1.95 billion aggregate principal amount of fixed rate senior notes issued September 5, 2014, the $500 million aggregate principal amount of fixed rate MPLX senior notes issued February 12, 2015, the $1.50 billion aggregate principal amount of fixed rate senior notes issued December 15, 2015 and the $4.04 billion aggregate principal amount of fixed rate MPLX senior notes issued December 22, 2015. Additionally, we have $450 million of variable rate term debt.

Sensitivity analysis of the effect of a hypothetical 100-basis-point change in interest rates on long-term debt as of December 31, 2016 is provided in the following table. Fair value of cash and cash equivalents, receivables, accounts payable and accrued interest approximate carrying value and are relatively insensitive to changes in interest rates due to the short-term maturity of the instruments. Accordingly, these instruments are excluded from the table.

(In millions)	Fair Value[(b)]	Change in Fair Value	Change in Net Income for the Twelve Months Ended December 31, 2016
Long-term debt[(a)]			
Fixed-rate	$ 10,442	$ 831 [(c)]	n/a
Variable-rate	450	0	11 [(d)]

(a) Excludes capital leases.

(b) Fair value was based on market prices, where available, or current borrowing rates for financings with similar terms and maturities.

(c) Assumes a 100-basis point decrease in the weighted average yield-to-maturity at December 31, 2016.

(d) Assumes a 100-basis-point change in interest rates. The change in net income was based on the weighted average balance of debt outstanding for the year ended December 31, 2016.

At December 31, 2016, our portfolio of long-term debt was comprised of fixed-rate instruments and variable-rate borrowings under the term loan agreement and the MPLX term loan facility. The fair value of our fixed-rate debt is relatively sensitive to interest rate fluctuations. Our sensitivity to interest rate declines and corresponding increases in the fair value of our debt portfolio unfavorably affects our results of operations and cash flows only when we elect to repurchase or otherwise retire fixed-rate debt at prices above carrying value. Interest rate fluctuations generally do not impact the fair value of borrowings under the term loan agreement, the MPLX term loan facility and MPLX bank revolving credit facility, but may affect our results of operations and cash flows.

Foreign Currency Exchange Rate Risk

We are impacted by foreign exchange rate fluctuations related to some of our purchases of crude oil denominated in Canadian dollars. We did not utilize derivatives to hedge our market risk exposure to these foreign exchange rate fluctuations in 2016.

Counterparty Risk

We are subject to risk of loss resulting from nonpayment by our customers to whom we provide services or sell natural gas or NGLs. We believe that certain contracts would allow us to pass those losses through to our customers, thus reducing our risk, when we are selling NGLs and acting as our producer customers' agent. Our credit exposure related to these customers is represented by the value of our trade receivables. Where exposed to credit risk, we analyze the customer's financial condition prior to entering into a transaction or agreement, establish credit terms and monitor the appropriateness of these terms on an ongoing basis. In the event of a customer default, we may sustain a loss and our cash receipts could be negatively impacted.

We are subject to risk of loss resulting from nonpayment or nonperformance by counterparties or future commission merchants. Our credit exposure related to commodity derivative instruments is represented by the fair value of contracts with a net positive fair value at the reporting date. These outstanding instruments expose us to credit loss in the event of nonperformance by the counterparties to the agreements. Should the creditworthiness of one or more of our counterparties decline, our ability to mitigate nonperformance risk is limited to a counterparty agreeing to either a voluntary termination and subsequent cash settlement or a novation of the derivative contract to a third party. In the event of a counterparty default, we may sustain a loss and our cash receipts could be negatively impacted. This counterparty credit risk does not apply to our embedded derivative as the overall value is a liability. We regularly review the creditworthiness of counterparties and futures commission merchants and enter into master netting agreements when appropriate.

Forward-Looking Statements

These quantitative and qualitative disclosures about market risk include forward-looking statements with respect to management's opinion about risks associated with the use of derivative instruments. These statements are based on certain assumptions with respect to interest rates as well as market prices and industry supply of and demand for crude oil, other refinery feedstocks, refined products, natural gas, NGLs and ethanol. If these assumptions prove to be inaccurate, future outcomes with respect to our use of derivative instruments may differ materially from those discussed in the forward-looking statements.

Item 8. Financial Statements and Supplementary Data

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Management's Responsibilities for Financial Statements

The accompanying consolidated financial statements of Marathon Petroleum Corporation and its subsidiaries ("MPC") are the responsibility of management and have been prepared in conformity with accounting principles generally accepted in the United States of America. They necessarily include some amounts that are based on best judgments and estimates. The financial information displayed in other sections of this Annual Report on Form 10-K is consistent with these consolidated financial statements.

MPC seeks to assure the objectivity and integrity of its financial records by careful selection of its managers, by organizational arrangements that provide an appropriate division of responsibility and by communications programs aimed at assuring that its policies and methods are understood throughout the organization.

The board of directors pursues its oversight role in the area of financial reporting and internal control over financial reporting through its Audit Committee. This committee, composed solely of independent directors, regularly meets (jointly and separately) with the independent registered public accounting firm, management and internal auditors to monitor the proper discharge by each of their responsibilities relative to internal accounting controls and the consolidated financial statements.

/s/ Gary R. Heminger	/s/ Timothy T. Griffith	/s/ John J. Quaid
Gary R. Heminger *Chairman of the Board,* *President and* *Chief Executive Officer*	*Timothy T. Griffith* *Senior Vice President* *and Chief Financial* *Officer*	*John J. Quaid* *Vice President and* *Controller*

Management's Report on Internal Control over Financial Reporting

MPC's management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934). An evaluation of the design and effectiveness of our internal control over financial reporting, based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, was conducted under the supervision and with the participation of management, including our chief executive officer and chief financial officer. Based on the results of this evaluation, MPC's management concluded that its internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of MPC's internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein.

/s/ Gary R. Heminger	/s/ Timothy T. Griffith
Gary R. Heminger *Chairman of the Board,* *President and* *Chief Executive Officer*	*Timothy T. Griffith* *Senior Vice President* *and Chief Financial* *Officer*

Report of Independent Registered Public Accounting Firm

To the Stockholders of Marathon Petroleum Corporation:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, comprehensive income, equity, and cash flows present fairly, in all material respects, the financial position of Marathon Petroleum Corporation and its subsidiaries at December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/PricewaterhouseCoopers LLP

Toledo, Ohio
February 24, 2017

Marathon Petroleum Corporation
Consolidated Statements of Income

(In millions, except per share data)	2016	2015	2014
Revenues and other income:			
Sales and other operating revenues (including consumer excise taxes)	$ 63,339	$ 72,051	$ 97,817
Income (loss) from equity method investments	(185)	88	153
Net gain on disposal of assets	32	7	21
Other income	178	112	111
Total revenues and other income	63,364	72,258	98,102
Costs and expenses:			
Cost of revenues (excludes items below)	49,170	55,583	83,770
Purchases from related parties	509	308	505
Inventory market valuation adjustment	(370)	370	-
Consumer excise taxes	7,506	7,692	6,685
Impairment expense	130	144	-
Depreciation and amortization	2,001	1,502	1,326
Selling, general and administrative expenses	1,605	1,576	1,375
Other taxes	435	391	390
Total costs and expenses	60,986	67,566	94,051
Income from operations	2,378	4,692	4,051
Net interest and other financial income (costs)	(556)	(318)	(216)
Income before income taxes	1,822	4,374	3,835
Provision for income taxes	609	1,506	1,280
Net income	1,213	2,868	2,555
Less net income (loss) attributable to:			
Redeemable noncontrolling interest	41	-	-
Noncontrolling interests	(2)	16	31
Net income attributable to MPC	$ 1,174	$ 2,852	$ 2,524
Per Share Data (See Note 8)			
Basic:			
Net income attributable to MPC per share	$ 2.22	$ 5.29	$ 4.42
Weighted average shares outstanding	528	538	570
Diluted:			
Net income attributable to MPC per share	$ 2.21	$ 5.26	$ 4.39
Weighted average shares outstanding	530	542	574
Dividends paid	$ 1.36	$ 1.14	$ 0.92

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation

Consolidated Statements of Comprehensive Income

(In millions)	2016	2015	2014
Net income	$ 1,213	$ 2,868	$ 2,555
Other comprehensive income (loss):			
Defined benefit postretirement and post-employment plans:			
Actuarial changes, net of tax of $69, $21 and ($47)	115	34	(78)
Prior service costs, net of tax of ($18), ($24) and ($19)	(31)	(39)	(31)
Other comprehensive income (loss)	84	(5)	(109)
Comprehensive income	1,297	2,863	2,446
Less comprehensive income (loss) attributable to:			
Redeemable noncontrolling interest	41	-	-
Noncontrolling interests	(2)	16	31
Comprehensive income attributable to MPC	$ 1,258	$ 2,847	$ 2,415

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Balance Sheets

(In millions, except share data)	December 31, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents (MPLX: $234 and $43, respectively)	$ 887	$ 1,127
Receivables, less allowance for doubtful accounts of $12 and $12 (MPLX: $302 and $257, respectively)	3,617	2,927
Inventories (MPLX: $54 and $51, respectively)	5,656	5,225
Other current assets (MPLX: $33 and $50, respectively)	241	192
Total current assets	10,401	9,471
Equity method investments (MPLX: $2,467 and $2,458, respectively)	3,827	3,622
Property, plant and equipment, net (MPLX: $10,730 and $9,997, respectively)	25,765	25,164
Goodwill (MPLX: $2,199 and $2,570, respectively)	3,587	4,019
Other noncurrent assets (MPLX: $506 and $478, respectively)	833	839
Total assets	$ 44,413	$ 43,115
Liabilities		
Current liabilities:		
Accounts payable (MPLX: $506 and $449, respectively)	$ 5,593	$ 4,743
Payroll and benefits payable (MPLX: $1 and $18, respectively)	530	503
Consumer excise taxes payable (MPLX: $2 and $1, respectively)	464	460
Accrued taxes (MPLX: $31 and $26, respectively)	153	184
Debt due within one year (MPLX: $1 and $1, respectively)	28	29
Other current liabilities (MPLX: $78 and $65, respectively)	378	426
Total current liabilities	7,146	6,345
Long-term debt (MPLX: $4,422 and $5,255, respectively)	10,544	11,896
Deferred income taxes (MPLX: $5 and $378, respectively)	3,861	3,285
Defined benefit postretirement plan obligations	1,055	1,179
Deferred credits and other liabilities (MPLX: $181 and $170, respectively)	604	735
Total liabilities	23,210	23,440
Commitments and contingencies (see Note 25)		
Redeemable noncontrolling interest	1,000	-
Equity		
MPC stockholders' equity:		
Preferred stock, no shares issued and outstanding (par value 0.01 per share, 30 million shares authorized)	-	-
Common stock:		
Issued – 731 million and 729 million shares (par value 0.01 per share, 1 billion shares authorized)	7	7
Held in treasury, at cost – 203 million and 198 million shares	(7,482)	(7,275)
Additional paid-in capital	11,060	11,071
Retained earnings	10,206	9,752
Accumulated other comprehensive loss	(234)	(318)
Total MPC stockholders' equity	13,557	13,237
Noncontrolling interests	6,646	6,438
Total equity	20,203	19,675
Total liabilities, redeemable noncontrolling interest and equity	$ 44,413	$ 43,115

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation
Consolidated Statements of Cash Flows

(In millions)	2016	2015	2014
Increase (decrease) in cash and cash equivalents			
Operating activities:			
Net income	$ 1,213	$ 2,868	$ 2,555
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of deferred financing costs and debt discount	61	16	27
Impairment expense	130	144	-
Depreciation and amortization	2,001	1,502	1,326
Inventory market valuation adjustment	(370)	370	-
Pension and other postretirement benefits, net	9	80	151
Deferred income taxes	394	134	(242)
Net gain on disposal of assets	(32)	(7)	(21)
(Income) loss from equity method investments	185	(88)	(153)
Distributions from equity method investments	291	113	170
Changes in the fair value of derivative instruments	(41)	4	(3)
Changes in:			
Current receivables	(674)	1,292	1,642
Inventories	(70)	80	(786)
Current accounts payable and accrued liabilities	985	(2,400)	(1,547)
All other, net	(96)	(47)	(9)
Net cash provided by operating activities	3,986	4,061	3,110
Investing activities:			
Additions to property, plant and equipment	(2,892)	(1,998)	(1,480)
Acquisitions, net of cash acquired	-	(1,218)	(2,821)
Disposal of assets	101	21	27
Investments – acquisitions, loans and contributions	(288)	(331)	(413)
– redemptions, repayments and return of capital	26	4	9
All other, net	112	81	135
Net cash used in investing activities	(2,941)	(3,441)	(4,543)
Financing activities:			
Commercial paper – issued	1,263	-	-
– repayments	(1,263)	-	-
Long-term debt – borrowings	864	2,993	3,793
– repayments	(2,269)	(2,226)	(548)
Debt issuance costs	(11)	(21)	(22)
Issuance of common stock	11	33	26
Common stock repurchased	(197)	(965)	(2,131)
Dividends paid	(719)	(613)	(524)
Issuance of MPLX LP common units	776	-	221
Issuance of MPLX LP redeemable preferred units	984	-	-
Distributions to noncontrolling interests	(542)	(40)	(27)
Contingent consideration payment	(164)	(175)	(172)
All other, net	(18)	27	19
Net cash provided by (used in) financing activities	(1,285)	(987)	635
Net decrease in cash and cash equivalents	(240)	(367)	(798)
Cash and cash equivalents at beginning of period	1,127	1,494	2,292
Cash and cash equivalents at end of period	$ 887	$ 1,127	$ 1,494

The accompanying notes are an integral part of these consolidated financial statements.

Marathon Petroleum Corporation

Consolidated Statements of Equity and Redeemable Noncontrolling Interest

(In millions)	MPC Stockholders' Equity							
	Common Stock	Treasury Stock	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Non-controlling Interests	Total Equity	Redeemable Non-controlling Interest
Balance as of December 31, 2013	$ 7	$ (4,155)	$ 9,765	$ 5,507	$ (204)	$ 412	$ 11,332	
Net income	-	-	-	2,524	-	31	2,555	
Dividends declared	-	-	-	(525)	-	-	(525)	
Distributions to noncontrolling interests	-	-	-	-	-	(27)	(27)	
Other comprehensive loss	-	-	-	-	(109)	-	(109)	
Shares repurchased	-	(2,131)	-	-	-	-	(2,131)	
Shares issued (returned) – stock-based compensation	-	(13)	26	-	-	-	13	
Stock-based compensation	-	-	50	-	-	2	52	
Impact from equity transactions of MPLX LP	-	-	-	-	-	221	221	
Other	-	-	-	9	-	-	9	
Balance as of December 31, 2014	$ 7	$ (6,299)	$ 9,841	$ 7,515	$ (313)	$ 639	$ 11,390	
Net income	-	-	-	2,852	-	16	2,868	
Dividends declared	-	-	-	(615)	-	-	(615)	
Distributions to noncontrolling interests	-	-	-	-	-	(40)	(40)	
Other comprehensive loss	-	-	-	-	(5)	-	(5)	
Shares repurchased	-	(965)	-	-	-	-	(965)	
Shares issued (returned) – stock-based compensation	-	(11)	33	-	-	-	22	
Stock-based compensation	-	-	69	-	-	16	85	
Impact from equity transactions of MPLX LP	-	-	1,128	-	-	5,795	6,923	
Noncontrolling interest – MarkWest Merger	-	-	-	-	-	13	13	
Other	-	-	-	-	-	(1)	(1)	
Balance as of December 31, 2015	$ 7	$ (7,275)	$ 11,071	$ 9,752	$ (318)	$ 6,438	$ 19,675	$ -
Net income (loss)	-	-	-	1,174	-	(2)	1,172	41
Dividends declared	-	-	-	(720)	-	-	(720)	-
Distributions to noncontrolling interests	-	-	-	-	-	(517)	(517)	(25)
Other comprehensive income	-	-	-	-	84	-	84	-
Shares repurchased	-	(197)	-	-	-	-	(197)	-
Shares issued (returned) – stock-based compensation	-	(10)	11	-	-	-	1	-
Stock-based compensation	-	-	35	-	-	6	41	-
Impact from equity transactions of MPLX LP	-	-	(57)	-	-	715	658	-
Issuance of MPLX LP redeemable preferred units	-	-	-	-	-	-	-	984
Other	-	-	-	-	-	6	6	-
Balance as of December 31, 2016	$ 7	$ (7,482)	$ 11,060	$ 10,206	$ (234)	$ 6,646	$ 20,203	$ 1,000

(Shares in millions)	Common Stock	Treasury Stock
Balance as of December 31, 2013	724	(130)
Shares repurchased	-	(49)
Shares issued – stock-based compensation	2	-
Balance as of December 31, 2014	726	(179)
Shares repurchased	-	(19)
Shares issued – stock-based compensation	3	-
Balance as of December 31, 2015	729	(198)
Shares repurchased	-	(4)
Shares issued (returned) – stock-based compensation	2	(1)
Balance as of December 31, 2016	731	(203)

The accompanying notes are an integral part of these consolidated financial statements.

Notes to Consolidated Financial Statements

1. Description of the Business and Basis of Presentation

Description of the Business – Our business consists of refining and marketing, retail and midstream services conducted primarily in the Midwest, Gulf Coast, East Coast, Northeast and Southeast regions of the United States, through subsidiaries, including Marathon Petroleum Company LP, Speedway LLC and its subsidiaries ("Speedway") and MPLX LP and its subsidiaries ("MPLX").

See Note 10 for additional information about our operations.

Spinoff – On May 25, 2011, the Marathon Oil board of directors approved the spinoff of its Refining, Marketing & Transportation Business ("RM&T Business") into an independent, publicly traded company, MPC, through the distribution of MPC common stock to the stockholders of Marathon Oil common stock (the "Spinoff"). MPC became an independent, publicly traded company on July 1, 2011.

Basis of Presentation – Our results of operations and cash flows consist of consolidated MPC activities. All significant intercompany transactions and accounts have been eliminated.

Certain prior period financial statement amounts have been reclassified to conform to current period presentation.

In the first quarter of 2016, we revised our segment reporting in connection with the contribution of our inland marine business to MPLX. See Note 4 for additional information. The operating results for our inland marine business and our investment in an ocean vessel joint venture, Crowley Ocean Partners LLC ("Crowley Ocean Partners") are now reported in our Midstream segment. Previously they were reported as part of our Refining & Marketing segment. Comparable prior period information has been recast to reflect our revised segment presentation. See Note 10 for additional information.

2. Summary of Principal Accounting Policies

Principles applied in consolidation – These consolidated financial statements include the accounts of our majority-owned, controlled subsidiaries and MPLX. Changes in ownership interest in consolidated subsidiaries that do not result in a change in control are recorded as an equity transaction. As of December 31, 2016, we owned a 25.5 percent interest in MPLX, including a two percent general partner interest. This ownership percentage reflects the conversion of the MPLX Class B Units in July 2017 at 1.09 to 1.00. Due to our 100 percent ownership of the general partner interest, we have determined that we control MPLX and therefore we consolidate MPLX and record a noncontrolling interest for the 74.5 percent interest owned by the public.

Investments in entities over which we have significant influence, but not control, are accounted for using the equity method of accounting. This includes entities in which we hold majority ownership but the minority shareholders have substantive participating rights. Income from equity method investments represents our proportionate share of net income generated by the equity method investees.

Differences in the basis of the investments and the separate net asset values of the investees, if any, are amortized into net income over the remaining useful lives of the underlying assets and liabilities, except for the excess related to goodwill. Equity method investments are evaluated for impairment whenever changes in the facts and circumstances indicate an other than temporary loss in value has occurred. When the loss is deemed to be other than temporary, the carrying value of the equity method investment is written down to fair value, and the amount of the write-down is included in net income.

Use of estimates – The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities as of the date of the consolidated financial statements and the reported amounts of revenues and expenses during the respective reporting periods.

Revenue recognition – Revenues are recognized when products are shipped or services are provided to customers, title is transferred, the sales price is fixed or determinable and collectability is reasonably assured. Costs associated with revenues are recorded in cost of revenues. Shipping and other transportation costs billed to our customers are presented on a gross basis in revenues and cost of revenues.

Rebates from vendors are recognized as a reduction of cost of revenues when the initiating transaction occurs. Incentives that are derived from contractual provisions are accrued based on past experience and recognized in cost of revenues. Rebates to customers are reflected as a reduction of revenue and are accrued for in "Accounts payable" on the consolidated balance sheets.

Crude oil and refined product exchanges and matching buy/sell transactions – We enter into exchange contracts and matching buy/sell arrangements whereby we agree to deliver a particular quantity and quality of crude oil or refined products at a specified location and date to a particular counterparty and to receive from the same counterparty the same commodity at a specified location on the same or another specified date. The exchange receipts and deliveries are nonmonetary transactions, with the exception of associated grade or location differentials that are settled in cash. The matching buy/sell purchase and sale transactions are settled in cash. Both exchange and matching buy/sell transactions are accounted for as exchanges of inventory and no revenues are recorded. The exchange transactions are recognized at the carrying amount of the inventory transferred.

Consumer excise taxes – We are required by various governmental authorities, including countries, states and municipalities, to collect and remit taxes on certain consumer products. Such taxes are presented on a gross basis in revenues and costs and expenses in the consolidated statements of income.

Cash and cash equivalents – Cash and cash equivalents include cash on hand and on deposit and investments in highly liquid debt instruments with maturities of three months or less.

Restricted cash – Restricted cash consists of cash and investments that must be maintained as collateral for letters of credit issued to certain third party producer customers. The balances will be outstanding until certain capital projects are completed and the third party releases the restriction. Restricted cash also consists of cash advances to be used for the operation and maintenance of an operated pipeline system. At December 31, 2016 and 2015, the amount of restricted cash included in "Other current assets" on the consolidated balance sheets were $5 million and $9 million, respectively, which is currently reflected in our Midstream segment.

Accounts receivable and allowance for doubtful accounts – Our receivables primarily consist of customer accounts receivable. Customer receivables are recorded at the invoiced amounts and generally do not bear interest. Allowances for doubtful accounts are generally recorded when it becomes probable the receivable will not be collected and are booked to bad debt expense. The allowance for doubtful accounts is the best estimate of the amount of probable credit losses in customer accounts receivable. We review the allowance quarterly and past-due balances over 180 days are reviewed individually for collectability.

Approximately 23 percent and 26 percent of our accounts receivable balances at December 31, 2016 and 2015, respectively, are related to sales of crude oil or refinery feedstocks to customers with whom we have master netting agreements. We have master netting agreements with more than 100 companies engaged in the crude oil or refinery feedstock trading and supply business or the petroleum refining industry. A master netting agreement generally provides for a once per month net cash settlement of the accounts receivable from and the accounts payable to a particular counterparty.

Inventories – Inventories are carried at the lower of cost or market value. Cost of inventories is determined primarily under the LIFO method. Costs for crude oil, refinery feedstocks and refined product inventories are aggregated on a consolidated basis for purposes of assessing if the LIFO cost basis of these inventories may have to be written down to market value.

Derivative instruments – We use derivatives to economically hedge a portion of our exposure to commodity price risk and, historically, to interest rate risk. We also have limited authority to use selective derivative instruments that assume market risk. All derivative instruments (including derivative instruments embedded in other contracts) are recorded at fair value. Certain commodity derivatives are reflected on the consolidated balance sheets on a net basis by counterparty as they are governed by master netting agreements. Cash flows related to derivatives used to hedge commodity price risk and interest rate risk are classified in operating activities with the underlying transactions.

Fair value accounting hedges – We used interest rate swaps to hedge our exposure to interest rate risk associated with fixed interest rate debt in our portfolio. These interest rate swap agreements were terminated in 2012. Changes in the fair values of both the hedged item and the related derivative were recognized immediately in net income with an offsetting effect included in the basis of the hedged item. The net effect was to report in net income the extent to which the accounting hedge was not effective in achieving offsetting changes in fair value. There was a gain on the termination of the agreements, which had been deferred and accounted for as an adjustment to our long-term debt balance. The gain was being amortized over the remaining life of the associated debt as a reduction of our interest expense, until the December 2015 extinguishment of our obligation for the associated debt. At such time, the remaining unamortized gain was credited to net interest and other financial income (costs).

Derivatives not designated as accounting hedges – Derivatives that are not designated as accounting hedges may include commodity derivatives used to hedge price risk on (1) inventories, (2) fixed price sales of refined products, (3) the acquisition of foreign-sourced crude oil, (4) the acquisition of ethanol for blending with refined products, (5) the sale of NGLs, (6) the purchase of natural gas and (7) the purchase of electricity. Changes in the fair value of derivatives not designated as accounting hedges are recognized immediately in net income.

Concentrations of credit risk – All of our financial instruments, including derivatives, involve elements of credit and market risk. The most significant portion of our credit risk relates to nonperformance by counterparties. The counterparties to our financial instruments consist primarily of major financial institutions and companies within the energy industry. To manage counterparty risk associated with financial instruments, we select and monitor counterparties based on an assessment of their financial strength and on credit ratings, if available. Additionally, we limit the level of exposure with any single counterparty.

Property, plant and equipment – Property, plant and equipment are recorded at cost and depreciated on a straight-line basis over the estimated useful lives of the assets, which range from two to 42 years. Such assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If the sum of the expected undiscounted future cash flows from the use of the asset and its eventual disposition is less than the carrying amount of the asset, an impairment loss is recognized based on the fair value of the asset.

When items of property, plant and equipment are sold or otherwise disposed of, any gains or losses are reported in net income. Gains on the disposal of property, plant and equipment are recognized when earned, which is generally at the time of closing. If a loss on disposal is expected, such losses are recognized when the assets are classified as held for sale.

Interest expense is capitalized for qualifying assets under construction. Capitalized interest costs are included in property, plant and equipment and are depreciated over the useful life of the related asset.

Goodwill and intangible assets – Goodwill represents the excess of the purchase price over the estimated fair value of the net assets acquired in the acquisition of a business. Goodwill is not amortized, but rather is tested for impairment annually and when events or changes in circumstances indicate that the fair value of a reporting unit with goodwill has been reduced below carrying value. The impairment test requires allocating goodwill and other assets and liabilities to reporting units. The fair value of each reporting unit is determined and compared to the

carrying value of the reporting unit. If the fair value of the reporting unit is less than the carrying value, including goodwill, the implied fair value of goodwill is calculated. The excess, if any, of the book value over the implied fair value of goodwill is charged to net income as an impairment expense.

Amortization of intangibles with definite lives is calculated using the straight-line method which is reflective of the benefit pattern in which the estimated economic benefit is expected to be received over the estimated useful life of the intangible asset. Intangibles subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the intangible may not be recoverable. If the sum of the expected undiscounted future cash flows related to the asset is less than the carrying amount of the asset, an impairment loss is recognized based on the fair value of the asset. Intangibles not subject to amortization are tested for impairment annually and when circumstances indicate that the fair value is less than the carrying amount of the intangible. If the fair value is less than the carrying value, an impairment is recorded for the difference.

Major maintenance activities – Costs for planned turnaround, major maintenance and engineered project activities are expensed in the period incurred. These types of costs include contractor repair services, materials and supplies, equipment rentals and our labor costs.

Environmental costs – Environmental expenditures are capitalized for additional equipment that mitigates or prevents future contamination or improves environmental safety or efficiency of the existing assets. We recognize remediation costs and penalties when the responsibility to remediate is probable and the amount of associated costs can be reasonably estimated. The timing of remediation accruals coincides with completion of a feasibility study or the commitment to a formal plan of action. Remediation liabilities are accrued based on estimates of known environmental exposure and are discounted when the estimated amounts are reasonably fixed and determinable. If recoveries of remediation costs from third parties are probable, a receivable is recorded and is discounted when the estimated amount is reasonably fixed and determinable.

Asset retirement obligations – The fair value of asset retirement obligations is recognized in the period in which the obligations are incurred if a reasonable estimate of fair value can be made. The majority of our recognized asset retirement liability relates to conditional asset retirement obligations for removal and disposal of fire-retardant material from certain refining facilities. The remaining recognized asset retirement liability relates to other refining assets, the removal of underground storage tanks at our leased convenience stores, certain pipelines and processing facilities and other related pipeline assets. The fair values recorded for such obligations are based on the most probable current cost projections. The recorded asset retirement obligations are not material to the consolidated financial statements.

Asset retirement obligations have not been recognized for some assets because the fair value cannot be reasonably estimated since the settlement dates of the obligations are indeterminate. Such obligations will be recognized in the period when sufficient information becomes available to estimate a range of potential settlement dates. The asset retirement obligations principally include the hazardous material disposal and removal or dismantlement requirements associated with the closure of certain refining, terminal, retail, pipeline and processing assets.

Our practice is to keep our assets in good operating condition through routine repair and maintenance of component parts in the ordinary course of business and by continuing to make improvements based on technological advances. As a result, we believe that generally these assets have no expected settlement date for purposes of estimating asset retirement obligations since the dates or ranges of dates upon which we would retire these assets cannot be reasonably estimated at this time.

Income taxes – Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of assets and liabilities and their tax bases. Deferred tax assets are recorded when it is more likely than not that they will be realized. The realization of deferred tax assets is assessed periodically based on several factors, primarily our expectation to generate sufficient future taxable income.

Stock-based compensation arrangements – The fair value of stock options granted to our employees is estimated on the date of grant using the Black-Scholes option pricing model. The model employs various assumptions, based on management's estimates at the time of grant, which impact the calculation of fair value and ultimately, the amount of expense that is recognized over the vesting period of the stock option award. Of the required assumptions, the expected life of the stock option award and the expected volatility of our stock price have the most significant impact on the fair value calculation. The average expected life is based on our historical employee exercise behavior. The assumption for expected volatility of our stock price reflects a weighting of 50 percent of our common stock implied volatility and 50 percent of our common stock historical volatility.

The fair value of restricted stock awards granted to our employees is determined based on the fair market value of our common stock on the date of grant. The fair value of performance unit awards granted to our employees is estimated on the date of grant using a Monte Carlo valuation model.

Our stock-based compensation expense is recognized based on management's estimate of the awards that are expected to vest, using the straight-line attribution method for all service-based awards with a graded vesting feature. If actual forfeiture results are different than expected, adjustments to recognized compensation expense may be required in future periods. Unearned stock-based compensation is charged to equity when restricted stock awards are granted. Compensation expense is recognized over the vesting period and is adjusted if conditions of the restricted stock award are not met.

Business combinations – We recognize and measure the assets acquired and liabilities assumed in a business combination based on their estimated fair values at the acquisition date, with any remaining difference versus the purchase consideration recorded as goodwill or gain from a bargain purchase. For all material acquisitions, management engages an independent valuation specialist to assist with the determination of fair value of the assets acquired, liabilities assumed, noncontrolling interest, if any, and goodwill, based on recognized business valuation methodologies. If the initial accounting for the business combination is incomplete by the end of the reporting period in which the acquisition occurs, an estimate will be recorded. Subsequent to the acquisition, and not later than one year from the acquisition date, we will record any material adjustments to the initial estimate based on new information obtained about facts and circumstances that existed as of the acquisition date. An income, market or cost valuation method may be utilized to estimate the fair value of the assets acquired, liabilities assumed, and noncontrolling interest, if any, in a business combination. The income valuation method represents the present value of future cash flows over the life of the asset using: (i) discrete financial forecasts, which rely on management's estimates of revenue and operating expenses; (ii) long-term growth rates; and (iii) appropriate discount rates. The market valuation method uses prices paid for a reasonably similar asset by other purchasers in the market, with adjustments relating to any differences between the assets. The cost valuation method is based on the replacement cost of a comparable asset at prices at the time of the acquisition reduced for depreciation of the asset. Acquisition-related costs are expensed as incurred in connection with each business combination.

Renewable fuel identification numbers – We purchase RINs to satisfy a portion of our RFS2 compliance. We record a short-term intangible asset, included in "Other current assets" on the balance sheet, for RINs owned in excess of our anticipated current period compliance requirements. The asset value is based on the product of the excess RINs as of the balance sheet date, if any, and the average cost of our RINs. We record a current liability, included in "Other current liabilities" on the balance sheet, when we are deficient RINs based on the product of the deficient RINs as of the balance sheet date, if any, and the market price of the RINs at the balance sheet date. The cost of RINs used for compliance is reflected in "Cost of revenues" on the income statement. Any gains or losses on the sale or expiration of RINs are classified as "Other income" on the income statement. Proceeds from RIN sales are included in investing activities –"All other, net" on the cash flow statement.

3. Accounting Standards

Recently Adopted

In September 2015, the FASB issued an accounting standard update that eliminates the requirement to restate prior period financial statements for measurement period adjustments related to business combinations. This accounting standard update requires that the cumulative impact of a measurement period adjustment be recognized in the reporting period in which the adjustment is identified. The change was effective for interim and annual periods beginning after December 15, 2015. We recognized measurement period adjustments during the first and second quarters of 2016 on a cumulative prospective basis as additional analysis was completed on the preliminary purchase price allocation for the acquisition of MarkWest Energy Partners, L.P. ("MarkWest"). See Note 5 for further discussion and detail related to these measurement period adjustments.

In May 2015, the FASB issued an accounting standard update that eliminates the requirement to categorize investments that are measured at net asset value using the practical expedient in the fair value hierarchy. The change was effective for fiscal years beginning after December 15, 2015 and interim periods within the fiscal year. Retrospective application is required. Adoption of this accounting standard update in the first quarter of 2016 did not have a material impact on our disclosures.

In April 2015, the FASB issued an accounting standard update clarifying whether a customer should account for a cloud computing arrangement as an acquisition of a software license or as a service arrangement by providing characteristics that a cloud computing arrangement must have in order to be accounted for as a software license acquisition. The change was effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2015. Retrospective or prospective application is allowed. We adopted this accounting standard update prospectively in the first quarter of 2016 and it did not have a material impact on our consolidated financial statements.

In February 2015, the FASB issued an accounting standard update making targeted changes to the current consolidation guidance. The accounting standard update changes the considerations related to substantive rights, related parties, and decision making fees when applying the VIE consolidation model and eliminates certain guidance for limited partnerships and similar entities under the voting interest consolidation model. The change was effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2015. Under the accounting standard update, we continue to consolidate our master limited partnership, MPLX, but it is now considered to be a VIE. The adoption of this accounting standard update in the first quarter of 2016 did impact our disclosures for this consolidated VIE, but did not have a material impact on our consolidated financial statements.

In August 2014, the FASB issued an accounting standard update requiring management to assess an entity's ability to continue as a going concern and to provide related footnote disclosures in certain circumstances. Management is required to assess if there is substantial doubt about an entity's ability to continue as a going concern within one year after the issuance of the financial statements. Disclosures are required if conditions give rise to substantial doubt and the type of disclosure is determined based on whether management's plans will be able to alleviate the substantial doubt. The change was effective for the first fiscal year ending after December 15, 2016, and for fiscal years and interim periods thereafter. The adoption of this accounting standard update in the fourth quarter of 2016 did not have a material impact on our disclosures.

In June 2014, the FASB issued an accounting standard update for the elimination of the concept of development stage entity ("DSE") from U.S. GAAP and removes the related incremental reporting. The accounting standard update eliminated the additional financial statement requirements specific to a DSE and was adopted in the first quarter of 2015. In addition, the portion of the accounting standard update that amended the consolidation model to eliminate the special provisions in the VIE rules for assessing the sufficiency of the equity of a DSE was adopted in the first quarter of 2016. Adoption of this accounting standard update in the first quarters of 2015 and 2016 did not have an impact on our consolidated financial statements.

Not Yet Adopted

In January 2017, the FASB issued an accounting standard update which simplifies the subsequent measurement of goodwill by eliminating Step 2 from the goodwill impairment test. Under the new guidance, the recognition of an impairment charge is calculated based on the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The guidance should be applied on a prospective basis, and is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017.

In January 2017, the FASB issued an accounting standard update to clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The standard is intended to narrow the definition of a business by specifying the minimum inputs and processes and by narrowing the definition of outputs. The change is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years. The guidance will be applied prospectively and early adoption is permitted for certain transactions. We are in the process of determining the impact of the accounting standard update on the consolidated financial statements.

In November 2016, the FASB issued an accounting standard update requiring that the statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. The change is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. Retrospective application is required. The application of this accounting standard update will not have a material impact on our statements of cash flows.

In October 2016, the FASB issued an accounting standard update to amend the consolidation guidance issued in February 2015 to require that a decision maker consider, in the determination of the primary beneficiary, its indirect interest in a VIE held by a related party that is under common control on a proportionate basis only. The change is effective for our financial statements for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years, with early adoption permitted. We are required to apply the standard retrospective to January 1, 2016, the date on which we adopted the consolidation guidance issued in February 2015. We have analyzed this accounting standard update and do not expect there to be an impact on our consolidated financial statements.

In October 2016, the FASB issued an accounting standard update that requires recognition of the income tax consequences of intra-entity transfers of assets other than inventory when the transfer occurs. The change is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. The amendments in this accounting standard update should be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. We do not expect application of this accounting standard update to have a material impact on our consolidated financial statements.

In August 2016, the FASB issued an accounting standard update related to the classification of certain cash flows. The accounting standard update provides specific guidance on eight cash flow classification issues, including debt prepayment or debt extinguishment costs, contingent consideration payments made after a business combination and distributions received from equity method investees, to reduce diversity in practice. The change is effective for fiscal years beginning after December 15, 2017, and interim periods within those fiscal years, with early adoption permitted. We do not expect application of this accounting standard update to have a material impact on our statements of cash flows.

In June 2016, the FASB issued an accounting standard update related to the accounting for credit losses on certain financial instruments. The guidance requires that for most financial assets, losses be based on an expected

loss approach which includes estimates of losses over the life of exposure that considers historical, current and forecasted information. Expanded disclosures related to the methods used to estimate the losses as well as a specific disaggregation of balances for financial assets are also required. The change is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years, with early adoption permitted for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. We do not expect application of this accounting standard update to have a material impact on our consolidated financial statements.

In March 2016, the FASB issued an accounting standard update to simplify some provisions in stock compensation accounting. The areas for simplification involve the accounting for share-based payment transactions, including income tax consequences, classifications of awards as either equity or liabilities and classification within the statement of cash flows. The changes are effective for fiscal years beginning after December 15, 2016, and interim periods within those years, and early adoption is permitted. Adoption of this accounting standard update in the first quarter of 2017 will not have a material impact on our consolidated financial statements.

In March 2016, the FASB issued an accounting standard update eliminating the requirement that an investor retrospectively apply equity method accounting when an investment that it had accounted for by another method initially qualifies for the equity method. This change will be effective for fiscal years beginning after December 15, 2016, and interim periods within those years. The guidance will be applied prospectively and early adoption is permitted. We do not expect application of this accounting standard update to have a material impact on our consolidated financial statements.

In February 2016, the FASB issued an accounting standard update requiring lessees to record virtually all leases on their balance sheets. The accounting standard update also requires expanded disclosures to help financial statement users better understand the amount, timing and uncertainty of cash flows arising from leases. For lessors, this amended guidance modifies the classification criteria and the accounting for sales-type and direct financing leases. The change will be effective on a modified retrospective basis for fiscal years beginning after December 15, 2018, and interim periods within those years, with early adoption permitted. We are currently evaluating the impact of this standard on our financial statements and disclosures, internal controls and accounting policies. This evaluation process includes reviewing all forms of leases, performing a completeness assessment over lease population and analyzing the practical expedients in order to determine the best path of implementation. We expect to recognize an asset and obligation related to leases previously accounted for as operating leases.

In January 2016, the FASB issued an accounting standard update requiring unconsolidated equity investments, not accounted for under the equity method, to be measured at fair value with changes in fair value recognized in net income. The accounting standard update also requires the use of the exit price notion when measuring the fair value of financial instruments for disclosure purposes and the separate presentation of financial assets and liabilities by measurement category and form on the balance sheet and accompanying notes. The accounting standard update eliminates the requirement to disclose the methods and assumptions used in estimating the fair value of financial instruments measured at amortized cost. Lastly, the accounting standard update requires separate presentation in other comprehensive income of the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when electing to measure the liability at fair value in accordance with the fair value option for financial instruments. The changes are effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2017. Early adoption is permitted only for the guidance regarding presentation of a liability's credit risk. We do not expect application of this accounting standard update to have a material impact on our consolidated financial statements.

In May 2014, the FASB issued an accounting standard update for revenue recognition for contracts with customers. The guidance in the accounting standard update states that revenue is recognized when a customer obtains control of a good or service. Recognition of the revenue will involve a multiple step approach including

identifying the contract, identifying the separate performance obligations, determining the transaction price, allocating the price to the performance obligations and then recognizing the revenue as the obligations are satisfied. Additional disclosures will be required to provide adequate information to understand the nature, amount, timing and uncertainty of reported revenues and revenues expected to be recognized. The change will be effective on a retrospective or modified retrospective basis for fiscal years beginning after December 15, 2017, and interim periods within those years, with early adoption permitted, no earlier than January 1, 2017. We are currently evaluating the impact of this standard on our financial statements and disclosures, internal controls and accounting policies. This evaluation process is primarily focused on reviewing service contracts and transaction types across our Midstream segment. We are also evaluating the election allowing for net reporting included in the accounting standard update for consumer excise taxes. In addition, we are currently evaluating the methods of adoption.

4. MPLX LP

MPLX is a diversified, growth-oriented publicly traded master limited partnership initially formed by us to own, operate, develop and acquire midstream assets related to the transportation and storage of hydrocarbon-based products, including crude oil, refined products, natural gas and NGLs. On December 4, 2015, MPLX and MarkWest Energy Partners, L.P. ("MarkWest") completed a merger, whereby MarkWest became a wholly-owned subsidiary of MPLX (the "MarkWest Merger"). MarkWest's operations include: natural gas gathering, processing and transportation; and NGL gathering, transportation, fractionation, storage and marketing. MPLX's other assets include a 100 percent interest in MPLX Pipe Line Holdings LLC ("Pipe Line Holdings"), which owns a network of common carrier crude oil and product pipeline systems and associated storage assets in the Midwest and Gulf Coast regions of the United States and a 100 percent interest in a butane cavern in Neal, West Virginia. MPLX also owns an inland marine business, which is comprised of 18 tow boats and approximately 200 barges which transports crude oil and refined products principally for MPC in the Midwest and Gulf Coast regions of the United States.

See Note 5 for information on MPLX's investment in the Bakken Pipeline system.

As of December 31, 2016, we owned a 25.5 percent interest in MPLX, including a two percent general partner interest. This ownership percentage reflects the conversion of the MPLX Class B Units in July 2017 at 1.09 to 1.00. MPLX is a VIE because the limited partners of MPLX do not have substantive kick-out or substantive participating rights over the general partner. We are the primary beneficiary of MPLX because in addition to our significant economic interest, we also have the power, through our 100 percent ownership of the general partner, to control the decisions that most significantly impact MPLX. We therefore consolidate MPLX and record a noncontrolling interest for the 74.5 percent interest owned by the public. The components of our noncontrolling interest consist of equity-based noncontrolling interest and redeemable noncontrolling interest. The redeemable noncontrolling interest relates to MPLX's preferred units, discussed below.

The creditors of MPLX do not have recourse to MPC's general credit through guarantees or other financial arrangements. The assets of MPLX are the property of MPLX and cannot be used to satisfy the obligations of MPC.

Reorganization Transactions

On September 1, 2016, MPC, MPLX and various affiliates initiated a series of reorganization transactions in order to simplify MPLX's ownership structure and its financial and tax reporting. In connection with these transactions, MPC contributed $225 million to MPLX, and all of the issued and outstanding MPLX Class A Units, all of which were held by MarkWest Hydrocarbon L.L.C. ("MarkWest Hydrocarbon"), a subsidiary of MPLX, were exchanged for newly issued common units representing limited partner interests in MPLX. The simple average of the closing prices of MPLX common units for the last 10 trading days prior to September 1, 2016 was used for purposes of these transactions. As a result of these transactions, MPC increased its ownership interest in MPLX by 7 million MPLX common units, or approximately 1 percent.

Private Placement of Preferred Units

On May 13, 2016, MPLX completed the private placement of approximately 30.8 million 6.5 percent Series A Convertible Preferred Units (the "MPLX Preferred Units") at a cash price of $32.50 per unit. The aggregate net proceeds of approximately $984 million from the sale of the MPLX Preferred Units was used for capital expenditures, repayment of debt and general partnership purposes.

The MPLX Preferred Units rank senior to all MPLX common units with respect to distributions and rights upon liquidation. The holders of the MPLX Preferred Units are entitled to receive quarterly distributions equal to $0.528125 per unit commencing for the quarter ended June 30, 2016, with a prorated amount from the date of issuance. Following the second anniversary of the issuance of the MPLX Preferred Units, the holders of the MPLX Preferred Units will receive as a distribution the greater of $0.528125 per unit or the amount of per unit distributions paid to common unitholders. The MPLX Preferred Units are convertible into MPLX common units on a one for one basis after three years, at the purchasers' option, and after four years at MPLX's option, subject to certain conditions.

The MPLX Preferred Units are considered redeemable securities due to the existence of redemption provisions upon a deemed liquidation event which is considered outside MPLX's control. Therefore they are presented as temporary equity in the mezzanine section of the consolidated balance sheets. We have recorded the MPLX Preferred Units at their issuance date fair value, net of issuance costs. Since the MPLX Preferred Units are not currently redeemable and not probable of becoming redeemable in the future, adjustment to the initial carrying amount is not necessary and would only be required if it becomes probable that the security would become redeemable.

Dropdowns to MPLX

On March 1, 2014, we sold MPLX a 13 percent interest in Pipe Line Holdings for $310 million. MPLX financed this transaction with $40 million of cash on-hand and $270 million of borrowings on its bank revolving credit facility.

On December 1, 2014, we sold and contributed interests in Pipe Line Holdings totaling 30.5 percent to MPLX for $600 million in cash and 2.9 million MPLX common units valued at $200 million. MPLX financed the sales portion of this transaction with $600 million of borrowings on its bank revolving credit facility.

On December 4, 2015, we sold our remaining 0.5 percent interest in Pipe Line Holdings to MPLX for $12 million. As a result, MPLX now owns 100 percent of Pipe Line Holdings.

The sales and contribution of our interests in Pipe Line Holdings to MPLX resulted in a change of our ownership in Pipe Line Holdings, but not a change in control. We accounted for these sales as transactions between entities under common control and did not record a gain or loss.

On March 31, 2016, we contributed our inland marine business to MPLX in exchange for 23 million MPLX common units and 460 thousand MPLX general partner units. The number of units we received from MPLX was determined by dividing $600 million by the volume weighted average NYSE price of MPLX common units for the 10 trading days preceding March 14, 2016, pursuant to the Membership Interests Contribution Agreement. We also agreed to waive first-quarter 2016 common unit distributions, IDRs and general partner distributions with respect to the common units issued in this transaction. The contribution of our inland marine business was accounted for as a transaction between entities under common control and therefore, we did not record a gain or loss.

On December 5, 2016, our board of directors authorized us to offer up to 100 percent of MPLX Terminals LLC ("MPLX Terminals"), Hardin Street Transportation LLC ("Hardin Street Transportation") and Woodhaven

Cavern LLC ("Woodhaven Cavern") to MPLX. MPLX Terminals owns and operates terminal and marine facilities. Hardin Street Transportation owns and operates various private crude oil and refined product pipeline systems and associated storage tanks as well as several condensate truck loading and unloading facilities. Woodhaven Cavern owns and operates butane and propane storage caverns. The transaction is expected to close in the first quarter of 2017, pending requisite approvals.

Public Offerings

On December 8, 2014, MPLX completed a public offering of 3.5 million common units at a price to the public of $66.68 per MPLX common unit, with net proceeds of $221 million. MPLX used the net proceeds from this offering to repay borrowings under its bank revolving credit facility and for general partnership purposes.

On February 12, 2015, MPLX completed a public offering of $500 million aggregate principal amount of four percent unsecured senior notes due February 15, 2025. See Note 19 for more information.

ATM Program

On August 4, 2016, MPLX entered into a Second Amended and Restated Distribution Agreement (the "Distribution Agreement") providing for the continuous issuance of common units, in amounts, at prices and on terms to be determined by market conditions and other factors at the time of any offerings (such continuous offering program, or at-the-market program, referred to as the "ATM Program"). MPLX expects to use the net proceeds from sales under the ATM Program for general partnership purposes including repayment of debt and funding for acquisitions, working capital requirements and capital expenditures.

During 2016, MPLX issued an aggregate of 26 million MPLX common units under the ATM Program, generating net proceeds of approximately $776 million. As of December 31, 2016, $717 million of MPLX common units remains available for issuance through the ATM Program under the Distribution Agreement.

Noncontrolling Interest

Changes in MPC's equity resulting from changes in its ownership interest in MPLX were as follows:

(In millions)	2016	2015
Transfers (to) from noncontrolling interest		
Increase (decrease) in MPC's paid in capital for the issuance of MPLX LP common units to the public	$ (60)	$ 1,532
Increase in MPC's paid in capital for the issuance of MPLX LP common units and general partner units to MPC	121	-
Net transfers (to) from noncontrolling interests	61	1,532
Tax impact	(118)	(404)
Change in MPC's additional paid-in capital, net of tax	$ (57)	$ 1,128

Agreements

We have various long-term, fee-based transportation and storage services agreements with MPLX. Under these agreements, MPLX provides transportation and storage services to us, and we commit to provide MPLX with minimum quarterly throughput volumes on crude oil and refined products systems and minimum storage volumes of crude oil, refined products and butane. We also have agreements with MPLX which establish fees for operational and management services provided between us and MPLX and for executive management services and certain general and administrative services provided by us to MPLX. These transactions are eliminated in consolidation.

5. Acquisitions and Investments

Merger with MarkWest Energy Partners, L.P.

On December 4, 2015, MPLX completed the MarkWest Merger. Each common unit of MarkWest issued and outstanding immediately prior to the effective time of the MarkWest Merger was converted into a right to receive 1.09 common units of MPLX representing limited partner interests in MPLX, plus a one-time cash payment of $6.20 per unit. We will contribute approximately $1.28 billion of cash to MPLX to pay the aggregate cash consideration to MarkWest unitholders, without receiving any new equity from MPLX in exchange. At closing, we made a payment of $1.23 billion to MarkWest common unitholders and the remaining $50 million will be paid in equal amounts, the first $25 million was paid in July 2016 and the second $25 million will be paid in July 2017, in connection with the conversion of the MPLX Class B Units to MPLX common units. Our financial results and operating statistics reflect the results of MarkWest from the date of the MarkWest Merger.

The components of the fair value of consideration transferred are as follows:

(In millions)	
Fair value of MPLX units issued	$ 7,326
Cash payment to MarkWest unitholders	1,230
Payable to MarkWest Class B unitholders	50
Total fair value of consideration transferred	$ 8,606

The following table summarizes the final purchase price allocation. Subsequent to December 31, 2015, additional analysis was completed and adjustments were made to the preliminary purchase price allocation as noted in the table below. The estimated fair value of assets acquired and liabilities and noncontrolling interests assumed at the acquisition date, are as follows:

(In millions)	As originally reported	Adjustments	As adjusted
Cash and cash equivalents	$ 12	$ -	$ 12
Receivables	164	-	164
Inventories	33	(1)	32
Other current assets	44	-	44
Equity method investments	2,457	143	2,600
Property, plant and equipment, net	8,474	43	8,517
Other noncurrent assets[(a)]	473	65	538
Total assets acquired	11,657	250	11,907
Accounts payable	322	6	328
Payroll and benefits payable	13	-	13
Accrued taxes	21	-	21
Other current liabilities	44	-	44
Long-term debt	4,567	-	4,567
Deferred income taxes	374	3	377
Deferred credit and other liabilities	151	-	151
Noncontrolling interests	13	-	13
Total liabilities and noncontrolling interest assumed	5,505	9	5,514
Net assets acquired excluding goodwill	6,152	241	6,393
Goodwill	2,454	(241)	2,213
Net assets acquired	$ 8,606	$ -	$ 8,606

(a) The adjustment relates to acquired intangible assets.

Included in noncurrent assets at December 31, 2015 was a $468 million intangible asset related to customer contracts and relationships. Amortization of intangibles with definite lives was calculated using the straight-line method which was reflective of the benefit pattern in which the estimated economic benefit was expected to be received over the estimated useful life of the intangible asset. The estimated useful life of the customer contracts and relationships is 11 to 25 years.

Adjustments to the preliminary purchase price allocations as of December 31, 2015 stem mainly from additional information obtained by management in the first quarter about facts and circumstances that existed at the acquisition date including updates to forecasted employee benefit costs and capital expenditures, and completion of certain valuations to determine the underlying fair value of certain acquired assets. The adjustment to intangibles mainly relates to a misstatement in the preliminary purchase price allocation as of December 31, 2015. The correction of the error resulted in a $68 million reduction to the carrying value of goodwill and offsetting increases of $64 million in intangibles and $2 million in both equity method investments and property, plant and equipment. Management concluded that the correction of the error is immaterial to the consolidated financial statements for all periods presented.

The increases to fair value of equity method investments, property plant and equipment, and other noncurrent assets noted above would not have resulted in a material effect to depreciation and amortization or income from equity method investments in the consolidated statements of income for the year ended December 31, 2015, had the fair value adjustments been recorded as of December 4, 2015.

The net fair value of the assets acquired and liabilities assumed in connection with the MarkWest Merger was less than the fair value of the total consideration resulting in the recognition of $2.21 billion of goodwill in three reporting units within our Midstream segment, substantially all of which is not deductible for tax purposes. Goodwill represents the complimentary aspects of the highly diverse asset base of MarkWest and MPLX that will provide significant additional opportunities across the hydrocarbon value chain.

As further discussed in Note 16, we recorded a goodwill impairment charge based on the implied fair value of goodwill as of the interim impairment analysis in the first quarter of 2016. During the second quarter of 2016, we finalized the analysis of the purchase price allocation. The completion of the purchase price allocation resulted in a refinement of the impairment expense recorded, as more fully discussed in Note 16.

We recognized $36 million of transaction costs related to the MarkWest Merger. These costs were expensed and $30 million is included in selling, general and administrative expenses and $6 million is in net interest and other financial income (costs).

The amounts of revenue and income from operations associated with the MarkWest Merger included in our consolidated statements of income for 2015 are as follows:

(In millions)	2015
Sales and other operating revenues (including consumer excise taxes)	$ 120
Income from operations	32

Acquisition of Hess' Retail Operations and Related Assets

On September 30, 2014, we acquired from Hess Corporation ("Hess") all of Hess' retail locations, transport operations and shipper history on various pipelines, including approximately 40 mbpd on Colonial Pipeline, for $2.82 billion. We refer to these assets as "Hess' Retail Operations and Related Assets." The transaction was funded with a combination of debt and available cash. The transaction provided for an adjustment for working capital, which was finalized with Hess during the first quarter of 2015, resulting in a $3 million reduction to our total consideration.

The purchase price allocation resulted in the recognition of $629 million in goodwill by our Speedway segment. The goodwill primarily relates to the expected benefits of a significantly expanded retail platform that should enable growth in new markets, as well as the potential for higher merchandise sales by utilizing Speedway's marketing approach at the acquired locations. The goodwill is deductible for tax purposes.

We recognized $14 million of acquisition-related costs associated with Hess' Retail Operations and Related Assets acquisition. These costs were expensed and were included in selling, general and administrative expenses.

The amounts of revenue and income from operations associated with Hess' Retail Operations and Related Assets included in our consolidated statements of income for 2014 are as follows:

(In millions)	2014
Sales and other operating revenues (including consumer excise taxes)	$ 2,403
Income from operations	113

Unaudited Pro Forma Financial Information

The following unaudited pro forma financial information presents consolidated results assuming the MarkWest Merger occurred on January 1, 2014 and the Hess' Retail Operations and Related Assets acquisition occurred on January 1, 2013.

(In millions, except per share data)	2015	2014
Sales and other operating revenues (including consumer excise taxes)	$ 73,760	$ 108,605
Net income attributable to MPC	2,825	2,522
Net income attributable to MPC per share – basic	$ 5.25	$ 4.42
Net income attributable to MPC per share – diluted	5.21	4.39

The unaudited pro forma financial information includes adjustments to align accounting policies, increased depreciation expense to reflect the fair value of property, plant and equipment, increased amortization expense related to identifiable intangible assets, adjustments to amortize the difference between the fair value and the principal amount of the MarkWest debt assumed by MPLX, adjustments to reflect the change in our limited partner interest in MPLX resulting from the MarkWest Merger, additional interest expense related to financing the acquisition of Hess' Retail Operations and Related Assets, as well as the related income tax effects. The unaudited pro forma financial information does not give effect to potential synergies that could result from the transactions and is not necessarily indicative of the results of future operations.

Acquisition of Biodiesel Facility

On April 1, 2014, we purchased a facility in Cincinnati, Ohio from Felda Iffco Sdn Bhd, Malaysia for $40 million. The plant currently produces biodiesel, glycerin and other by-products. The production capacity of the plant is approximately 60 million gallons per year.

Neither goodwill nor a gain from a bargain purchase was recognized in conjunction with the biodiesel facility acquisition.

Assuming the acquisition of the biodiesel facility in 2014 had been made at the beginning of any period presented, the consolidated pro forma results would not be materially different from reported results.

Formation of Travel Plaza Joint Venture

In the fourth quarter of 2016, Speedway and Pilot Flying J finalized the formation of a joint venture consisting of 123 travel plazas, primarily in the Southeast United States. The new entity, PFJ Southeast LLC ("PFJ Southeast"), consisted of 41 existing locations contributed by Speedway and 82 locations contributed by Pilot Flying J, all of which carry either the Pilot or Flying J brand and are operated by Pilot Flying J. We did not recognize a gain on the $272 million non-cash contribution of stores to the joint venture since the contribution was that of in-substance real estate. Our non-cash contribution consisted of $203 million of property, plant and equipment, $61 million of goodwill and $8 million of inventory.

Marine Investments

We currently have indirect ownership interests in two ocean vessel joint ventures with Crowley Maritime Corporation ("Crowley"), which were established to own and operate Jones Act vessels in petroleum product service. We have invested a total of $189 million in these two ventures as described further below.

In September 2015, we acquired a 50 percent ownership interest in a joint venture, Crowley Ocean Partners, with Crowley. The joint venture owns and operates four new Jones Act product tankers, three of which are leased to MPC. Two of the vessels were delivered in 2015 and the remaining two were delivered in 2016. We contributed a total of $141 million for the four vessels.

In May 2016, MPC and Crowley formed a new ocean vessel joint venture, Crowley Coastal Partners LLC ("Crowley Coastal Partners"), in which MPC has a 50 percent ownership interest. MPC and Crowley each contributed their 50 percent ownership in Crowley Ocean Partners, discussed above, into Crowley Coastal Partners. In addition, we contributed $48 million in cash and Crowley contributed its 100 percent ownership interest in Crowley Blue Water Partners LLC ("Crowley Blue Water Partners") to Crowley Coastal Partners. Crowley Blue Water Partners is an entity that owns and operates three 750 Series ATB vessels that are leased to MPC. We account for our 50 percent interest in Crowley Coastal Partners as part of our Midstream segment using the equity method of accounting.

See Note 6 for information on Crowley Coastal Partners as a VIE and Note 25 for information on our conditional guarantee of the indebtedness of Crowley Ocean Partners and Crowley Blue Water Partners.

Investments in Pipeline Companies

Bakken Pipeline system

On February 15, 2017, MPLX closed on the previously announced transaction to acquire a partial, indirect equity interest in the Dakota Access Pipeline ("DAPL") and Energy Transfer Crude Oil Company Pipeline ("ETCOP") projects, collectively referred to as the Bakken Pipeline system, through a joint venture with Enbridge Energy Partners L.P. ("Enbridge Energy Partners"). MPLX contributed $500 million of the $2 billion purchase price paid by the joint venture to acquire a 36.75 percent indirect equity interest in the Bakken Pipeline system from Energy Transfer Partners, L.P. ("ETP") and Sunoco Logistics Partners, L.P. ("SXL"). MPLX holds, through a subsidiary, a 25 percent interest in the joint venture, which equates to an approximate 9.2 percent indirect equity interest in the Bakken Pipeline system. The Bakken Pipeline system is currently expected to deliver in excess of 470 mbpd of crude oil from the Bakken/Three Forks production area in North Dakota to the Midwest through Patoka, Illinois and ultimately to the Gulf Coast. Furthermore, MPC expects to become a committed shipper on the Bakken Pipeline system under terms of an on-going open season.

In connection with closing the transaction with ETP and SXL, Enbridge Energy Partners canceled MPC's transportation services agreement with respect to the Sandpiper pipeline project and released MPC from paying any termination fee per that agreement.

Explorer Pipeline Company

In March 2014, we acquired from Chevron Raven Ridge Pipe Line Company an additional seven percent interest in Explorer Pipeline Company ("Explorer") for $77 million, bringing our ownership interest to 25 percent. As a result of this increase in our ownership, we now account for our investment in Explorer using the equity method of accounting rather than the cost method. The cumulative impact of the change was applied as an adjustment to 2014 retained earnings.

Southern Access Extension pipeline project

In July 2014, we exercised our option to acquire a 35 percent ownership interest in Enbridge Inc.'s Southern Access Extension ("SAX") pipeline through our in investment in Illinois Extension Pipeline Company, LLC ("Illinois Extension Pipeline"). This option resulted from our agreement to be the anchor shipper on the SAX pipeline and our commitment to the Sandpiper pipeline project as discussed below. We have contributed $299 million to Illinois Extension Pipeline since project inception.

We account for our ownership interest in Illinois Extension Pipeline as an equity method investment. During the construction of the pipeline, our ownership interest in Illinois Extension Pipeline was considered a VIE. Upon completion and start up of the pipeline in December of 2015, a reassessment determined that our investment is no longer considered a VIE. Our investment in the pipeline and our share of its results are included in our Midstream segment.

Sandpiper pipeline project

In November 2013, we agreed to serve as an anchor shipper for the Sandpiper pipeline project and fund 37.5 percent of the construction costs of the project, which was to become part of Enbridge Energy Partners' North Dakota System. In exchange for these commitments, we were to earn an approximate 27 percent equity interest in Enbridge Energy Partners' North Dakota System upon the Sandpiper pipeline being placed into service. We made contributions of $14 million to North Dakota Pipeline Company LLC ("North Dakota Pipeline") during 2016 and have contributed $301 million since project inception to fund our share of the construction costs for the project.

On September 1, 2016, Enbridge Energy Partners announced that its affiliate, North Dakota Pipeline, would withdraw certain pending regulatory applications for its Sandpiper pipeline project and that the project would be deferred indefinitely. These decisions were considered to indicate an impairment of the costs capitalized to date on the project. See Note 17 for information regarding the charge recognized in the third quarter of 2016.

6. Variable Interest Entities

In addition to MPLX, as described in Note 4, the following entities are also VIEs.

Crowley Coastal Partners

In May 2016, Crowley Coastal Partners was formed to own an interest in both Crowley Ocean Partners and Crowley Blue Water Partners. We have determined that Crowley Coastal Partners is a VIE based on the terms of the existing financing arrangements for Crowley Blue Water Partners and Crowley Ocean Partners and the associated debt guarantees by MPC and Crowley. Our maximum exposure to loss at December 31, 2016 was $489 million, which includes our equity method investment in Crowley Coastal Partners and the debt guarantees provided to each of the lenders to Crowley Blue Water Partners and Crowley Ocean Partners. We are not the primary beneficiary of this VIE because we do not have the power to control the activities that significantly influence the economic outcomes of the entity and therefore, do not consolidate the entity.

MarkWest Utica EMG

On January 1, 2012, MarkWest Utica Operating Company, LLC ("Utica Operating"), a wholly-owned and consolidated subsidiary of MarkWest, and EMG Utica, LLC ("EMG Utica") (together the "Members"), executed agreements to form a joint venture, MarkWest Utica EMG LLC ("MarkWest Utica EMG"), to develop significant natural gas gathering, processing and NGL fractionation, transportation and marketing infrastructure in eastern Ohio.

As of December 31, 2016, MarkWest has a 56 percent legal ownership interest in MarkWest Utica EMG. MarkWest Utica EMG's inability to fund its planned activities without subordinated financial support qualify it as a VIE. Utica Operating is not deemed to be the primary beneficiary due to EMG Utica's voting rights on significant matters. We account for our ownership interest in MarkWest Utica EMG as an equity method investment. MPLX receives engineering and construction and administrative management fee revenue and reimbursement for other direct personnel costs for operating MarkWest Utica EMG. Our maximum exposure to loss as a result of our involvement with MarkWest Utica EMG includes our equity investment, any additional capital contribution commitments and any operating expenses incurred by the subsidiary operator in excess of compensation received for the performance of the operating services. Our equity investment in MarkWest Utica EMG at December 31, 2016 was $2.22 billion.

Ohio Gathering

Ohio Gathering Company, L.L.C. ("Ohio Gathering") is a subsidiary of MarkWest Utica EMG and is engaged in providing natural gas gathering services in the Utica Shale in eastern Ohio. Ohio Gathering is a joint venture

between MarkWest Utica EMG and Summit Midstream Partners, LLC. As of December 31, 2016, we had a 34 percent indirect ownership interest in Ohio Gathering. As this entity is a subsidiary of MarkWest Utica EMG, which is accounted for as an equity method investment, MPLX reports its portion of Ohio Gathering's net assets as a component of its investment in MarkWest Utica EMG. MPLX receives engineering and construction and administrative management fee revenue and reimbursement for other direct personnel costs for operating Ohio Gathering.

7. Related Party Transactions

Our related parties included:

- Centennial Pipeline LLC ("Centennial"), in which we have a 50 percent noncontrolling interest. Centennial owns a refined products pipeline and storage facility.
- Crowley Blue Water Partners, in which we have a 50 percent indirect noncontrolling interest. Crowley Blue Water Partners owns and operates three Jones Act ATB vessels.
- Crowley Ocean Partners, in which we have a 50 percent indirect noncontrolling interest. Crowley Ocean Partners owns and operates Jones Act product tankers.
- Explorer, in which we have a 25 percent interest. Explorer owns and operates a refined products pipeline.
- Illinois Extension Pipeline, in which we have a 35 percent noncontrolling interest. Illinois Extension Pipeline owns and operates a crude oil pipeline.
- LOCAP LLC ("LOCAP"), in which we have a 59 percent noncontrolling interest. LOCAP owns and operates a crude oil pipeline.
- LOOP LLC ("LOOP"), in which we have a 51 percent noncontrolling interest. LOOP owns and operates the only U.S. deepwater oil port.
- MarkWest Utica EMG, in which we have a 56 percent noncontrolling interest. MarkWest Utica EMG is engaged in significant natural gas processing and NGL fractionation, transportation and marketing in the state of Ohio.
- Ohio Condensate Company L.L.C. ("Ohio Condensate"), in which we have a 60 percent noncontrolling interest. Ohio Condensate is engaged in wellhead condensate gathering, stabilization, terminalling, transportation and storage within certain defined areas of Ohio.
- Ohio Gathering, in which we have a 34 percent indirect noncontrolling interest. Ohio Gathering is a subsidiary of MarkWest Utica EMG providing natural gas gathering service in the Utica Shale region of eastern Ohio.
- PFJ Southeast, in which we have a 29 percent noncontrolling interest. PFJ Southeast owns travel plazas primarily in the Southeast United States.
- The Andersons Albion Ethanol LLC ("TAAE"), in which we have a 45 percent noncontrolling interest, The Andersons Clymers Ethanol LLC ("TACE"), in which we have a 61 percent noncontrolling interest and The Andersons Marathon Ethanol LLC ("TAME"), in which we have a 67 percent direct and indirect noncontrolling interest. These companies each own and operate an ethanol production facility.
- Other equity method investees.

We believe that transactions with related parties were conducted on terms comparable to those with unaffiliated parties.

Sales to related parties, which are included in "Sales and other operating revenues (including consumer excise taxes)" on the accompanying consolidated statements of income, were as follows:

(In millions)	2016	2015	2014
PFJ Southeast	$ 56	$ -	$ -
Other equity method investees	6	6	7
Total	$ 62	$ 6	$ 7

Other income from related parties, which is included in "Other income" on the accompanying consolidated statements of income, were as follows:

(In millions)	2016	2015	2014
MarkWest Utica EMG	$ 16	$ -	$ -
Ohio Condensate	4	-	-
Ohio Gathering	15	2	-
Other equity method investees	6	2	1
Total	$ 41	$ 4	$ 1

Other income from related parties consists primarily of fees received for operating transportation assets for our related parties.

Purchases from related parties were as follows:

(In millions)	2016	2015	2014
Crowley Blue Water Partners	$ 37	$ -	$ -
Crowley Ocean Partners	52	6	-
Explorer	14	20	39
Illinois Extension Pipeline	110	4	-
LOCAP	23	23	21
LOOP	59	52	88
TAAE	41	52	79
TACE	59	54	121
TAME	93	87	141
Other equity method investees	21	10	16
Total	$ 509	$ 308	$ 505

Related party purchases from Crowley Blue Water Partners and Crowley Ocean Partners consist of leasing marine equipment primarily used to transport refined products. Related party purchases from Explorer consist primarily of refined product transportation costs. Related party purchases from Illinois Extension Pipeline, LOCAP, LOOP and other equity method investees consist primarily of crude oil transportation costs. Related party purchases from TAAE, TACE and TAME consist of ethanol purchases.

Receivables from related parties, which are included in "Receivables, less allowance for doubtful accounts" on the accompanying consolidated balance sheets, were as follows:

(In millions)	December 31, 2016	December 31, 2015
Centennial	$ -	$ 1
MarkWest Utica EMG	2	1
Ohio Condensate	-	3
Ohio Gathering	2	5
PFJ Southeast	40	-
Other equity method investees	1	3
Total	$ 45	$ 13

The long-term receivable from related parties, which is included in "Other noncurrent assets" on the accompanying consolidated balance sheet, was $1 million at December 31, 2016 and $1 million at December 31, 2015.

Payables to related parties, which are included in "Accounts payable" on the accompanying consolidated balance sheets, were as follows:

(In millions)	December 31, 2016	December 31, 2015
Explorer	$ -	$ 1
Illinois Extension Pipeline	9	4
LOCAP	2	2
LOOP	6	5
MarkWest Utica EMG	24	19
Ohio Condensate	1	4
TAAE	2	1
TACE	4	2
TAME	4	3
Other equity method investees	1	1
Total	$ 53	$ 42

8. Income per Common Share

We compute basic earnings per share by dividing net income attributable to MPC by the weighted average number of shares of common stock outstanding. The average number of shares of common stock and per share amounts have been retroactively restated to reflect the two-for-one stock split completed in June 2015. Diluted income per share assumes exercise of certain stock based compensation awards, provided the effect is not anti-dilutive.

MPC grants certain incentive compensation awards to employees and non-employee directors that are considered to be participating securities. Due to the presence of participating securities, we have calculated our earnings per share using the two-class method.

(In millions, except per share data)	2016	2015	2014
Basic earnings per share:			
Allocation of earnings:			
Net income attributable to MPC	$ 1,174	$ 2,852	$ 2,524
Income allocated to participating securities	1	4	4
Income available to common stockholders – basic	$ 1,173	$ 2,848	$ 2,520
Weighted average common shares outstanding	528	538	570
Basic earnings per share	$ 2.22	$ 5.29	$ 4.42
Diluted earnings per share:			
Allocation of earnings:			
Net income attributable to MPC	$ 1,174	$ 2,852	$ 2,524
Income allocated to participating securities	1	4	4
Income available to common stockholders – diluted	$ 1,173	$ 2,848	$ 2,520
Weighted average common shares outstanding	528	538	570
Effect of dilutive securities	2	4	4
Weighted average common shares, including dilutive effect	530	542	574
Diluted earnings per share	$ 2.21	$ 5.26	$ 4.39

The following table summarizes the shares that were anti-dilutive, and therefore, were excluded from the diluted share calculation.

(In millions)	2016	2015	2014
Shares issued under stock-based compensation plans	3	1	1

9. Equity

As of December 31, 2016, we have $2.56 billion of remaining share repurchase authorizations from our board of directors. We may utilize various methods to effect the repurchases, which could include open market repurchases, negotiated block transactions, accelerated share repurchases or open market solicitations for shares, some of which may be affected through Rule 10b5-1 plans. The timing and amount of future repurchases, if any, will depend upon several factors, including market and business conditions, and such repurchases may be discontinued at any time.

Total share repurchases were as follows for the respective periods:

(In millions, except per share data)	2016	2015	2014
Number of shares repurchased	4	19	49
Cash paid for shares repurchased	$ 197	$ 965	$ 2,131
Effective average cost per delivered share	$ 41.84	$ 50.31	$ 44.31

10. Segment Information

In the first quarter of 2016, we revised our segment reporting in connection with the contribution of our inland marine business to MPLX. The operating results for our inland marine business and our investment in Crowley Ocean Partners are now reported in our Midstream segment. Previously they were reported as part of our Refining & Marketing segment. Comparable prior period information has been recast to reflect our revised segment presentation.

We have three reportable segments: Refining & Marketing; Speedway; and Midstream. Each of these segments is organized and managed based upon the nature of the products and services it offers.

- Refining & Marketing – refines crude oil and other feedstocks at our refineries in the Gulf Coast and Midwest regions of the United States, purchases ethanol and refined products for resale and distributes refined products through various means, including terminals and trucks that we own or operate. We sell refined products to wholesale marketing customers domestically and internationally, to buyers on the spot market, to our Speedway segment and to independent entrepreneurs who operate Marathon® retail outlets.
- Speedway – sells transportation fuels and convenience merchandise in retail markets in the Midwest, East Coast and Southeast regions of the United States.
- Midstream – includes the operations of MPLX and certain other related operations. The Midstream segment gathers, processes and transports natural gas; gathers, transports, fractionates, stores and markets NGLs and transports and stores crude oil and refined products.

On December 4, 2015, MPLX completed a merger with MarkWest and its results are included in the Midstream segment. On September 30, 2014, we acquired Hess' Retail Operations and Related Assets, substantially all of which is part of the Speedway segment. Segment information for periods prior to each acquisition does not include amounts for these operations. See Note 5.

Segment income represents income from operations attributable to the reportable segments. Corporate administrative expenses and costs related to certain non-operating assets are not allocated to the reportable segments. In addition, certain items that affect comparability (as determined by the chief operating decision maker) are not allocated to the reportable segments.

(In millions)	Refining & Marketing	Speedway	Midstream	Total
Year Ended December 31, 2016				
Revenues:				
Customer	$ 43,228	$ 18,283	$ 1,828	$ 63,339
Intersegment[a]	10,589	3	808	11,400
Segment revenues	$ 53,817	$ 18,286	$ 2,636	$ 74,739
Segment income from operations[b][c]	$ 1,543	$ 734	$ 871	$ 3,148
Income from equity method investments[d]	24	5	142	171
Depreciation and amortization[d]	1,092	273	576	1,941
Capital expenditures and investments[e]	1,101	303	1,521	2,925

(In millions)	Refining & Marketing	Speedway	Midstream	Total
Year Ended December 31, 2015				
Revenues:				
Customer	$ 52,174	$ 19,690	$ 187	$ 72,051
Intersegment[a]	12,024	3	777	12,804
Segment revenues	$ 64,198	$ 19,693	$ 964	$ 84,855
Segment income from operations[b][c]	$ 4,086	$ 673	$ 380	$ 5,139
Income from equity method investments	26	-	62	88
Depreciation and amortization[d]	1,052	254	144	1,450
Capital expenditures and investments[e][f]	1,045	501	14,545	16,091

(In millions)	Refining & Marketing	Speedway	Midstream	Total
Year Ended December 31, 2014				
Revenues:				
Customer	$ 80,821	$ 16,927	$ 71	$ 97,819
Intersegment[a]	10,912	5	753	11,670
Segment revenues	$ 91,733	$ 16,932	$ 824	$ 109,489
Segment income from operations[b]	$ 3,538	$ 544	$ 342	$ 4,424
Income from equity method investments	96	-	57	153
Depreciation and amortization[d]	1,020	152	102	1,274
Capital expenditures and investments[e][g]	1,043	2,981	604	4,628

(a) Management believes intersegment transactions were conducted under terms comparable to those with unaffiliated parties.

(b) Included in the Midstream segment for 2016, 2015 and 2014 are $11 million, $20 million and $19 million, respectively, of corporate overhead expenses attributable to MPLX. The remaining corporate overhead expenses are not currently allocated to other segments, but instead are reported in corporate and other unallocated items. Also included in the Midstream segment for 2015 are $36 million of transaction costs related to the MarkWest Merger.

(c) In 2016, the Refining & Marketing and Speedway segments include an inventory LCM benefit of $345 million and $25 million, respectively. In 2015, the Refining & Marketing and Speedway segments include an inventory LCM charge of $345 million and $25 million, respectively.

(d) Differences between segment totals and MPC totals represent amounts related to unallocated items and are included in "Items not allocated to segments" in the reconciliation below.

(e) Capital expenditures include changes in capital accruals, acquisitions and investments in affiliates.

(f) The Midstream segment includes $13.85 billion for the MarkWest Merger. See Note 5.

(g) The Speedway and Refining & Marketing segments include $2.66 billion and $52 million, respectively, for the acquisition of Hess' Retail Operations and Related Assets. See Note 5.

The following reconciles segment income from operations to income before income taxes as reported in the consolidated statements of income:

(In millions)	2016	2015	2014
Segment income from operations	$ 3,148	$ 5,139	$ 4,424
Items not allocated to segments:			
Corporate and other unallocated items[(a)]	(277)	(299)	(277)
Pension settlement expenses[(b)]	(7)	(4)	(96)
Impairments[(c)]	(486)	(144)	-
Net interest and other financial income (costs)	(556)	(318)	(216)
Income before income taxes	$ 1,822	$ 4,374	$ 3,835

[(a)] Corporate and other unallocated items consists primarily of MPC's corporate administrative expenses and costs related to certain non-operating assets, except for corporate overhead expenses attributable to MPLX, which are included in the Midstream segment. Corporate overhead expenses are not allocated to the Refining & Marketing and Speedway segments.

[(b)] See Note 22.

[(c)] 2016 includes impairments of goodwill and equity method investments. 2015 relates to the cancellation of the ROUX project at our Garyville refinery. See Notes 15, 16 and 17.

The following reconciles segment capital expenditures and investments to total capital expenditures:

(In millions)	2016	2015	2014
Segment capital expenditures and investments	$ 2,925	$ 16,091	$ 4,628
Less investments in equity method investees[(a)]	431	2,788	413
Plus items not allocated to segments:			
Corporate and Other	81	155	83
Capitalized interest	63	37	27
Total capital expenditures[(b)]	$ 2,638	$ 13,495	$ 4,325

[(a)] 2016 includes an adjustment of $143 million to the fair value of equity method investments acquired in connection with the MarkWest Merger. 2015 includes $2.46 billion for the MarkWest Merger. See Note 5.

[(b)] Capital expenditures include changes in capital accruals. See Note 20 for a reconciliation of total capital expenditures to additions to property, plant and equipment as reported in the consolidated statements of cash flows.

The following reconciles total segment customer revenues to sales and other operating revenues (including consumer excise taxes) as reported in the consolidated statements of income:

(In millions)	2016	2015	2014
Customer revenues	$ 63,339	$ 72,051	$ 97,819
Corporate and other unallocated items	-	-	(2)
Sales and other operating revenues (including consumer excise taxes)	$ 63,339	$ 72,051	$ 97,817

Revenues by product line were:

(In millions)	2016	2015	2014
Refined products	$ 54,511	$ 63,744	$ 90,702
Merchandise	5,297	5,188	3,817
Crude oil and refinery feedstocks	2,038	2,718	2,917
Service, transportation and other	1,493	401	381
Sales and other operating revenues (including consumer excise taxes)	$ 63,339	$ 72,051	$ 97,817

No single customer accounted for more than 10 percent of annual revenues for the years ended December 31, 2016, 2015 and 2014.

We do not have significant operations in foreign countries. Therefore, revenues in foreign countries and long-lived assets located in foreign countries, including property, plant and equipment and investments, are not material to our operations.

Total assets by reportable segment were:

	December 31,	
(In millions)	2016	2015
Refining & Marketing	$ 18,039	$ 17,379
Speedway	5,426	5,349
Midstream	18,078	17,462
Corporate and Other	2,870	2,925
Total consolidated assets	$ 44,413	$ 43,115

11. Other Items

Net interest and other financial income (costs) was:

(In millions)	2016	2015	2014
Interest income	$ 6	$ 6	$ 7
Interest expense[(a)]	(602)	(325)	(229)
Interest capitalized	64	37	27
Loss on extinguishment of debt	-	(5)	-
Other financial costs[(b)]	(24)	(31)	(21)
Net interest and other financial income (costs)	$ (556)	$ (318)	$ (216)

(a) 2016 and 2015 includes $44 million and $1 million, respectively, for the amortization of the discount related to the difference between the fair value and the principal amount of the assumed MarkWest debt.

(b) 2015 includes $6 million of transaction costs related to the MarkWest Merger.

12. Income Taxes

Income tax provisions (benefits) were:

	2016			2015			2014		
(In millions)	Current	Deferred	Total	Current	Deferred	Total	Current	Deferred	Total
Federal	$ 189	$ 336	$ 525	$ 1,210	$ 134	$ 1,344	$ 1,382	$ (199)	$ 1,183
State and local	27	57	84	152	9	161	135	(37)	98
Foreign	(1)	1	-	10	(9)	1	5	(6)	(1)
Total	$ 215	$ 394	$ 609	$ 1,372	$ 134	$ 1,506	$ 1,522	$ (242)	$ 1,280

A reconciliation of the federal statutory income tax rate (35 percent) applied to income before income taxes to the provision for income taxes follows:

	2016	2015	2014
Statutory rate applied to income before income taxes	35 %	35 %	35 %
State and local income taxes, net of federal income tax effects	3	2	2
Domestic manufacturing deduction	(1)	(2)	(2)
Noncontrolling interests	(1)	-	-
Biodiesel excise tax credit	(1)	(1)	-
Other	(2)	-	(2)
Provision for income taxes	33 %	34 %	33 %

Deferred tax assets and liabilities resulted from the following:

	December 31,	
(In millions)	2016	2015
Deferred tax assets:		
Employee benefits	$ 578	$ 631
Environmental	34	44
Net operating loss carryforwards	23	73
Other	58	73
Total deferred tax assets	693	821
Deferred tax liabilities:		
Property, plant and equipment	2,591	2,512
Inventories	707	579
Investments in subsidiaries and affiliates	1,145	909
Other	94	89
Total deferred tax liabilities	4,537	4,089
Net deferred tax liabilities	$ 3,844	$ 3,268

Net deferred tax liabilities were classified in the consolidated balance sheets as follows:

(In millions)	December 31, 2016	December 31, 2015
Assets:		
Other noncurrent assets	$ 17	$ 17
Liabilities:		
Deferred income taxes	3,861	3,285
Net deferred tax liabilities	$ 3,844	$ 3,268

Tax carryforwards – At December 31, 2016 and 2015, federal operating loss carryforwards were $18 million and $66 million, respectively, which expire in 2022 through 2036. As of December 31, 2016 and 2015, state and local operating loss carryforwards were $8 million and $10 million, respectively, which expire in 2017 through 2036. The decrease in both the federal and state loss carryforwards was due to the utilization of loss carryforwards as a part of the reorganization transactions which simplified the MPLX ownership structure as discussed in Note 4.

Valuation allowances – As of December 31, 2016 and 2015, $10 million and $5 million of valuation allowances were recognized primarily due to the expected realizability of foreign tax credits and based on estimates of future financial income and expected realizability of state and local tax operating losses.

MPC is continuously undergoing examination of its U.S. federal income tax returns by the Internal Revenue Service. Such audits have been completed through the 2009 tax year. We believe adequate provision has been made for federal income taxes and interest which may become payable for years not yet settled. Further, we are routinely involved in U.S. state income tax audits. We believe all other audits will be resolved with the amounts paid and/or provided for these liabilities. As of December 31, 2016, our income tax returns remain subject to examination in the following major tax jurisdictions for the tax years indicated:

United States Federal	2010 - 2015
States	2008 - 2015

During the first quarter of 2016, MPC's deferred tax liabilities increased $115 million and additional paid-in capital decreased by the same amount for an out of period adjustment to update the preliminary tax effects recorded in 2015 related to the MarkWest Merger. The impact of the out of period adjustment was not material to the consolidated balance sheet as of December 31, 2015.

The following table summarizes the activity in unrecognized tax benefits:

(In millions)	2016	2015	2014
January 1 balance	$ 12	$ 12	$ 13
Additions for tax positions of prior years	6	-	7
Reductions for tax positions of prior years	(10)	-	(10)
Settlements	(1)	-	2
December 31 balance	$ 7	$ 12	$ 12

If the unrecognized tax benefits as of December 31, 2016 were recognized, $2 million would affect our effective income tax rate. There were $1 million of uncertain tax positions as of December 31, 2016 for which it is reasonably possible that the amount of unrecognized tax benefits would significantly decrease during the next twelve months.

Interest and penalties related to income taxes are recorded as part of the provision for income taxes. Such interest and penalties were net expenses (benefits) of $(5) million, $3 million and less than $1 million in 2016, 2015 and 2014, respectively. As of December 31, 2016 and 2015, $13 million and $18 million of interest and penalties were accrued related to income taxes.

13. Inventories

	December 31,	
(In millions)	2016	2015
Crude oil and refinery feedstocks	$ 2,208	$ 2,180
Refined products	2,810	2,804
Materials and supplies	485	438
Merchandise	153	173
Lower of cost or market reserve	-	(370)
Total	$ 5,656	$ 5,225

The LIFO method accounted for 91 percent of total inventory value at both December 31, 2016 and 2015.

Inventories are carried at the lower of cost or market value. Costs of crude oil, refinery feedstocks and refined products are aggregated on a consolidated basis for purposes of assessing if the LIFO cost basis of these inventories may have to be written down to market values. As of December 31, 2015, costs of inventories exceeded market value by $370 million resulting in a charge to cost of revenues to establish an LCM inventory valuation reserve. During 2016, market prices for these inventories increased and the market value of these inventories exceeded their cost basis resulting in a reversal of the LCM inventory reserve and a $370 million benefit to cost of revenues. At December 31, 2016, current acquisition costs of inventories were estimated to exceed the LIFO inventory value by $308 million.

There were no material liquidations of LIFO inventories in 2016. In the second quarter of 2016, we had recognized the effects of an interim liquidation of our refined products inventories which we did not expect to reinstate by year end resulting in a pre-tax charge of approximately $54 million to income. Due to the annual build of refined products inventories, in the fourth quarter of 2016, we recognized the effects of annual builds in our refined products and crude inventories which had the effect of reversing the second quarter charge. During 2015, we recorded LIFO liquidations caused by permanently decreased levels in crude oil and refined products inventory levels. Cost of revenues increased and income from operations decreased by $78 million for the year ended December 31, 2015 due to these LIFO liquidations. There were no liquidations of LIFO inventories in 2014.

14. Equity Method Investments

(In millions)	Ownership as of December 31, 2016	Carrying value at December 31, 2016	2015
Centennial	50%	$ 35	$ 37
Centrahoma Processing LLC	40%	104	111
Crowley Coastal Partners	50%	184	-
Crowley Ocean Partners[a]	50%	-	72
Explorer	25%	94	91
Illinois Extension Pipeline	35%	293	267
LOCAP	59%	22	22
LOOP	51%	277	243
MarkWest Utica EMG	56%	2,224	2,160
North Dakota Pipeline[b]	38%	30	287
Ohio Condensate[b]	60%	10	101
PFJ Southeast[c]	29%	283	-
TAAE	45%	33	27
TACE	61%	33	49
TAEI	34%	15	18
TAME[d]	50%	18	27
Other MPLX investments		129	86
Other		43	24
Total		$ 3,827	$ 3,622

[a] Crowley Ocean Partners merged into Crowley Coastal Partners in 2016.

[b] During 2016, we recorded an impairment charge of $267 million related to our investment in North Dakota Pipeline and an impairment charge of $89 million related to our investment in Ohio Condensate. See Note 17 for additional information.

[c] This joint venture with Pilot Flying J was formed in 2016. See Note 5.

[d] Excludes TAEI's investment in TAME.

Summarized financial information for equity method investees is as follows:

(In millions)	2016	2015	2014
Income statement data:			
Revenues and other income	$ 2,421	$ 1,390	$ 1,430
Income (loss) from operations	(116)	332	379
Net income (loss)	(250)	239	316
Balance sheet data – December 31:			
Current assets	$ 711	$ 906	
Noncurrent assets	8,170	6,418	
Current liabilities	884	468	
Noncurrent liabilities	1,462	1,130	

As of December 31, 2016, the carrying value of our equity method investments was $1.21 billion higher than the underlying net assets of investees. This basis difference is being amortized or accreted into net income over the remaining estimated useful lives of the underlying net assets, except for $553 million of excess related to goodwill.

Centennial experienced a significant reduction in shipment volumes in the second half of 2011 that has continued through 2016. At December 31, 2016, Centennial was not shipping product. As a result, we continued to evaluate the carrying value of our equity investment in Centennial. We concluded that no impairment was required given our assessment of its fair value based on market participant assumptions for various potential uses and future cash flows of Centennial's assets. If market conditions were to change and the owners of Centennial are unable to find an alternative use for the assets, there could be a future impairment of our Centennial interest. As of December 31, 2016, our equity investment in Centennial was $35 million and we had a $29 million guarantee associated with 50 percent of Centennial's outstanding debt. See Note 25 for additional information on the debt guarantee.

Dividends and partnership distributions received from equity method investees (excluding distributions that represented a return of capital previously contributed) were $291 million, $113 million and $170 million in 2016, 2015 and 2014.

15. Property, Plant and Equipment

(In millions)	Estimated Useful Lives	December 31, 2016	December 31, 2015
Refining & Marketing	2 - 30 years	$ 19,447	$ 18,396
Speedway	4 - 25 years	5,078	5,067
Midstream	3 - 42 years	12,664	11,379
Corporate and Other	4 - 40 years	817	762
Total		38,006	35,604
Less accumulated depreciation		12,241	10,440
Property, plant and equipment, net		$ 25,765	$ 25,164

Property, plant and equipment includes gross assets acquired under capital leases of $505 million and $511 million at December 31, 2016 and 2015, respectively, with related amounts in accumulated depreciation of $202 million and $176 million at December 31, 2016 and 2015. Property, plant and equipment includes construction in progress of $2.02 billion and $2.26 billion at December 31, 2016 and 2015, respectively, which primarily relates to capital projects at our refineries and midstream facilities.

In the third quarter of 2015, we decided to cancel the ROUX project at our Garyville, Louisiana refinery due to the implications of current market conditions. The project was intended to increase margins by upgrading residual fuel to ultra-low sulfur diesel and gas oil. As a result, we recorded a $144 million impairment charge to write off the costs incurred through September 30, 2015 on the project. This impairment charge is included in "Impairment expense" on the accompanying consolidated statements of income.

16. Goodwill and Intangibles

Goodwill

Goodwill is tested for impairment on an annual basis and when events or changes in circumstances indicate the fair value of a reporting unit with goodwill has been reduced below the carrying value of the net assets of the

reporting unit. In 2016, we recorded an impairment of goodwill as outlined below based on an interim impairment analysis. There was no impairment required based on our subsequent annual test of goodwill in 2016. In 2015, no impairment was required based on our annual test.

During the first quarter of 2016, MPLX, our consolidated subsidiary, determined that an interim impairment analysis of the goodwill recorded in connection with the MarkWest Merger was necessary based on consideration of a number of first quarter events and circumstances, including i) continued deterioration of near-term commodity prices as well as longer term pricing trends, ii) recent guidance on reductions to forecasted capital spending, the slowing of drilling activity and the resulting reduced production growth forecasts released or communicated by MPLX's producer customers and iii) increases in the cost of capital. The combination of these factors was considered to be a triggering event requiring an interim impairment test. Based on the first step of the interim goodwill impairment analysis, the fair value for three of the reporting units to which goodwill was assigned in connection with the MarkWest Merger was less than their respective carrying value. In step two of the impairment analysis, the implied fair values of the goodwill were compared to the carrying values within those reporting units. Based on this assessment, it was determined that goodwill was impaired in two of the reporting units. Accordingly, MPLX recorded an impairment charge of approximately $129 million in the first quarter of 2016. In the second quarter of 2016, MPLX completed its purchase price allocation, which resulted in an additional $1 million of impairment expense that would have been recorded in the first quarter of 2016 had the purchase price allocation been completed as of that date. This adjustment to the impairment expense was the result of completing an evaluation of the deferred tax liabilities associated with the MarkWest Merger and their impact on the resulting goodwill that was recognized.

The fair value of the reporting units for the interim goodwill impairment analysis was determined based on applying the discounted cash flow method, which is an income approach, and the guideline public company method, which is a market approach. The discounted cash flow fair value estimate was based on known or knowable information at the interim measurement date. The significant assumptions that were used to develop the estimates of the fair values under the discounted cash flow method include management's best estimates of the expected future results and discount rates, which ranged from 10.5 percent to 11.5 percent. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As a result, there can be no assurance that the estimates and assumptions made for purposes of the interim goodwill impairment test will prove to be an accurate prediction of the future.

The changes in the carrying amount of goodwill for 2016 and 2015 were as follows:

(In millions)	Refining & Marketing	Speedway	Midstream	Total
Balance at January 1, 2015	$ 539	$ 854	$ 173	$ 1,566
Acquisitions[a]	-	-	2,454	2,454
Disposition	-	(1)	-	(1)
Balance at December 31, 2015	$ 539	$ 853	$ 2,627	$ 4,019
Purchase price allocation adjustments[a]	-	-	(241)	(241)
Disposition[b]	-	(61)	-	(61)
Impairment	-	-	(130)	(130)
Balance at December 31, 2016	$ 539	$ 792	$ 2,256	$ 3,587

(a) See Note 5 for information on the acquisitions and purchase price allocation adjustments.

(b) Goodwill associated with our former Speedway travel plaza locations that are now part of the PFJ Southeast joint venture. The amount was included in the initial basis for our equity method investment in the joint venture.

Intangible Assets

Our intangible assets as of December 31, 2016 and 2015 are as follows:

(In millions)	Refining & Marketing	Speedway	Midstream	Total
Balance at December 31, 2016				
Customer contracts and relationships	$ 102	$ 1	$ 533	$ 636
Royalty agreements	128	-	-	128
Favorable lease contract terms	1	57	-	58
Other[(a)]	27	75	-	102
Gross	$ 258	$ 133	$ 533	$ 924
Accumulated amortization	(123)	(35)	(41)	(199)
Net	$ 135	$ 98	$ 492	$ 725
Balance at December 31, 2015				
Customer contracts and relationships	$ 91	$ 1	$ 468	$ 560
Royalty agreements	122	-	-	122
Favorable lease contract terms	1	70	-	71
Other[(a)]	28	75	-	103
Gross	$ 242	$ 146	$ 468	$ 856
Accumulated amortization	(104)	(31)	(2)	(137)
Net	$ 138	$ 115	$ 466	$ 719

(a) The Refining & Marketing and Speedway segments include unamortized intangible assets of $3 million and $46 million, respectively, which are primarily trademarks.

Amortization expense for 2016 and 2015 was $50 million and $29 million, respectively. Estimated future amortization expense related to the intangible assets at December 31, 2016 is as follows:

(In millions)	
2017	$ 49
2018	49
2019	49
2020	48
2021	46

17. Fair Value Measurements

Fair Values – Recurring

The following tables present assets and liabilities accounted for at fair value on a recurring basis as of December 31, 2016 and 2015 by fair value hierarchy level. We have elected to offset the fair value amounts recognized for multiple derivative contracts executed with the same counterparty, including any related cash collateral as shown below; however, fair value amounts by hierarchy level are presented on a gross basis in the following tables.

	December 31, 2016					
	Fair Value Hierarchy					
(In millions)	Level 1	Level 2	Level 3	Netting and Collateral[a]	Net Carrying Value on Balance Sheet[b]	Collateral Pledged Not Offset
Commodity derivative instruments, assets	$ 688	$ -	$ -	$ (688)	$ -	$ 126
Other assets	2	-	-	N/A	2	-
Total assets at fair value	$ 690	$ -	$ -	$ (688)	$ 2	$ 126
Commodity derivative instruments, liabilities	$ 712	$ -	$ 6	$ (712)	$ 6	$ -
Embedded derivatives in commodity contracts[c]	-	-	54	-	54	-
Contingent consideration, liability[d]	-	-	130	N/A	130	-
Total liabilities at fair value	$ 712	$ -	$ 190	$ (712)	$ 190	$ -

	December 31, 2015					
	Fair Value Hierarchy					
(In millions)	Level 1	Level 2	Level 3	Netting and Collateral[a]	Net Carrying Value on Balance Sheet[b]	Collateral Pledged Not Offset
Commodity derivative instruments, assets	$ 104	$ 2	$ 7	$ (62)	$ 51	$ -
Other assets	2	-	-	N/A	2	-
Total assets at fair value	$ 106	$ 2	$ 7	$ (62)	$ 53	$ -
Commodity derivative instruments, liabilities	$ 39	$ -	$ -	$ (39)	$ -	$ -
Embedded derivatives in commodity contracts[c]	-	-	32	$ -	32	-
Contingent consideration, liability[d]	-	-	317	N/A	317	-
Total liabilities at fair value	$ 39	$ -	$ 349	$ (39)	$ 349	$ -

(a) Represents the impact of netting assets, liabilities and cash collateral when a legal right of offset exists. As of December 31, 2016, cash collateral of $24 million was netted with mark-to-market derivative liabilities. As of December 31, 2015, cash collateral of $23 million was netted with mark-to-market derivative assets.

(b) We have no derivative contracts that are subject to master netting arrangements that are reflected gross on the balance sheet.

(c) Includes $13 million and $5 million classified as current as of December 31, 2016 and 2015, respectively.

(d) Includes $130 million and $196 million classified as current as of December 31, 2016 and 2015, respectively.

Commodity derivatives in Level 1 are exchange-traded contracts for crude oil and refined products measured at fair value with a market approach using the close-of-day settlement prices for the market. Commodity derivatives are covered under master netting agreements with an unconditional right to offset. Collateral deposits in futures commission merchant accounts covered by master netting agreements related to Level 1 commodity derivatives are classified as Level 1 in the fair value hierarchy.

Commodity derivatives in Level 2 include crude oil and natural gas swap contracts and are measured at fair value with a market approach. The valuations are based on the appropriate commodity prices and contain no significant unobservable inputs. LIBO Rates are an observable input for the measurement of these derivative contracts. The measurements for commodity contracts contain observable inputs in the form of forward prices based on WTI crude oil prices; and Columbia Appalachia, Henry Hub, PEPL and Houston Ship Channel natural gas prices.

Level 3 instruments include OTC NGL contracts and embedded derivatives in commodity contracts. The embedded derivative liability relates to a natural gas purchase agreement embedded in a keep-whole processing agreement. The fair value calculation for these Level 3 instruments at December 31, 2016 used significant unobservable inputs including: (1) NGL prices interpolated and extrapolated due to inactive markets ranging from $0.28 to $1.27 per gallon and (2) the probability of renewal of 50 percent for the first five-year term and 75 percent for the second five-year term of the gas purchase agreement and the related keep-whole processing agreement. For these contracts, increases in forward NGL prices result in a decrease in the fair value of the derivative assets and an increase in the fair value of the derivative liabilities. The forward prices for the individual NGL products generally increase or decrease in a positive correlation with one another. Increases or decreases in forward NGL prices result in an increase or decrease in the fair value of the embedded derivative. An increase in the probability of renewal would result in an increase in the fair value of the related embedded derivative liability.

The contingent consideration represents the fair value as of December 31, 2016 and 2015 of the remaining amount we expect to pay to BP related to the earnout provision associated with our 2013 acquisition of BP's refinery in Texas City, Texas and related logistics and marketing assets. We refer to these assets as the "Galveston Bay Refinery and Related Assets". The fair value of the remaining contingent consideration was estimated using an income approach and is therefore a Level 3 liability. The amount of cash to be paid under the arrangement is based on both a market-based crack spread and refinery throughput volumes for the months during which the earnout applies, as well as established thresholds that cap the annual and total payment. The earnout payment cannot exceed $250 million per year for the last three years of the arrangement, with the total cumulative payment capped at $700 million over the six-year period commencing in 2014. Any excess or shortfall from the annual cap for a current year's earnout calculation will not affect subsequent years' calculations. The fair value calculation used significant unobservable inputs including: (1) an estimate of forecasted monthly refinery throughput volumes; (2) an internal and external monthly crack spread forecast of approximately $13 per barrel; and (3) a range of risk-adjusted discount rates from five percent to 10 percent. An increase or decrease in forecasts for the crack spread or refinery throughput volumes may result in a corresponding increase or decrease in the fair value of the contingent consideration liability. Increases to the fair value as a result of increasing forecasts for both of these unobservable inputs, however, are limited as the earnout payment is subject to annual caps. An increase or decrease in the discount rate may result in a decrease or increase to the fair value of the contingent consideration liability, respectively. The fair value of the contingent consideration liability is reassessed each quarter, with changes in fair value recorded in cost of revenues. Through December 31, 2016, we have paid BP approximately $569 million in total leaving $131 million remaining under the total cap of $700 million.

The following is a reconciliation of the net beginning and ending balances recorded for net assets and liabilities classified as Level 3 in the fair value hierarchy.

(In millions)	2016	2015	2014
Beginning balance	$ 342	$ 478	$ 625
Contingent consideration payment[(a)]	(200)	(189)	(180)
Net derivative positions assumed - MarkWest Merger	-	31	-
Unrealized and realized losses included in net income	55	20	33
Settlements of derivative instruments	(7)	2	-
Ending balance	$ 190	$ 342	$ 478
The amount of total (gains) losses for the period included in earnings attributable to the change in unrealized (gains) losses relating to assets still held at the end of period:			
Derivative instruments	$ 32	$ (7)	$ -
Contingent consideration agreement	13	28	33
Total	$ 45	$ 21	$ 33

(a) On the consolidated statements of cash flows for 2016, 2015 and 2014, $164 million, $175 million and $172 million, respectively, of the contingent earnout payment to BP was included as a financing activity with the remainder included as an operating activity.

See Note 18 for the income statement impacts of our derivative instruments.

Fair Values – Nonrecurring

The following table shows the values of assets, by major category, measured at fair value on a nonrecurring basis in periods subsequent to their initial recognition.

	Year Ended December 31,					
	2016		2015		2014	
(In millions)	Fair Value	Impairment	Fair Value	Impairment	Fair Value	Impairment
Equity method investments	$ 42	$ 356	$ -	$ -	$ -	$ -
Goodwill	-	130	-	-	-	-
Property, plant and equipment, net	-	-	-	144	-	-
Other noncurrent assets	-	-	-	-	-	11

During the third quarter of 2016, Enbridge Energy Partners announced that its affiliate, North Dakota Pipeline, would withdraw certain pending regulatory applications for the Sandpiper pipeline project and that the project would be deferred indefinitely. These decisions were considered to indicate an impairment of the costs capitalized to date on the project. As the operator of North Dakota Pipeline and the entity responsible for maintaining its financial records, Enbridge completed a fixed asset impairment analysis as of August 31, 2016, in accordance with ASC Topic 360. Based on the estimated liquidation value of the fixed assets, an impairment charge was recorded by North Dakota Pipeline. Based on our 37.5 percent ownership of North Dakota Pipeline, we recognized approximately $267 million of this charge in the third quarter of 2016 through "Income (loss) from equity method investments" on the accompanying consolidated statements of income, which impaired virtually all of our $301 million investment in the project. Also, in accordance with ASC Topic 323, we completed an assessment to determine any additional equity method impairment charge to be recorded on our consolidated financial statements resulting from an other-than-temporary impairment. The result of this analysis indicated no additional charge was required to be recorded.

The fixed assets of North Dakota Pipeline related to the Sandpiper pipeline project consist primarily of project management and engineering costs, pipe, valves, motors and other equipment, land and easements. The fair value of fixed assets was estimated based on a market approach using the estimated price that would be received to sell pipe, land and other related equipment in its current condition, considering the current market conditions for sale of these assets and length of disposal period. The valuation considered a range of potential selling prices from various alternatives that could be used to dispose of these assets. As such, the fair value of the North Dakota Pipeline equity method investment and its underlying assets represents a Level 3 measurement. As a result, actual results may differ from the estimates and assumptions made for purposes of this impairment analysis. North Dakota Pipeline expects to dispose of these assets through orderly transactions.

During the second quarter of 2016, forecasts for Ohio Condensate, an equity method investment, were reduced in line with updated forecasts for customer requirements. As the operator of that entity responsible for maintaining its financial records, we completed a fixed asset impairment analysis as of June 30, 2016, in accordance with ASC Topic 360, to determine the potential fixed asset impairment charge. The resulting fixed asset impairment charge recorded within Ohio Condensate's financial statements was $96 million. Based on our 60 percent ownership of Ohio Condensate, approximately $58 million was recorded in the second quarter of 2016 in "Income (loss) from equity method investments" on the accompanying consolidated statements of income.

Our investment in Ohio Condensate, which was established at fair value in connection with the MarkWest Merger, exceeded its proportionate share of the underlying net assets. Therefore, in conjunction with the ASC Topic 360 impairment analysis, we completed an equity method impairment analysis in accordance with ASC Topic 323 to determine the potential additional equity method impairment charge to be recorded on our consolidated financial statements resulting from an other-than-temporary impairment. As a result, an additional impairment charge of approximately $31 million was recorded in the second quarter of 2016 in "Income (loss) from equity method investments" on the accompanying consolidated statements of income, which eliminated the basis differential established in connection with the MarkWest Merger.

The fair value of Ohio Condensate and its underlying assets was determined based upon applying the discounted cash flow method, which is an income approach, and the guideline public company method, which is a market approach. The discounted cash flow fair value estimate is based on known or knowable information at the interim measurement date. The significant assumptions that were used to develop the estimate of the fair value under the discounted cash flow method include management's best estimates of the expected future results using a probability weighted average set of cash flow forecasts and a discount rate of 11.2 percent. Fair value determinations require considerable judgment and are sensitive to changes in underlying assumptions and factors. As such, the fair value of the Ohio Condensate equity method investment and its underlying assets represents a Level 3 measurement. As a result, actual results may differ from the estimates and assumptions made for purposes of this impairment analysis.

See Note 16 for additional information on the goodwill impairment.

In the third quarter of 2015, we decided to cancel the ROUX project at our Garyville refinery. The work completed on the project through September 30, 2015 had no alternate use or net salvage value; therefore, we fully impaired the $144 million of cost capitalized for the project through that date. The fair value of our investment in the project was determined using an income approach and is classified as Level 3.

Based on the financial and operational status of a company in which we have an interest, we fully impaired our $11 million investment in that company in 2014. Our investment in this company was accounted for using the cost method and was included in our Refining & Marketing segment. The impairment charge is included in "Other income" on the accompanying consolidated statements of income. The fair value of our investment in this cost company was measured using an income approach. This measurement is classified as Level 3.

Fair Values – Reported

The following table summarizes financial instruments on the basis of their nature, characteristics and risk at December 31, 2016 and 2015, excluding the derivative financial instruments and contingent consideration reported above.

	December 31,			
	2016		2015	
(In millions)	Fair Value	Carrying Value	Fair Value	Carrying Value
Financial assets:				
Investments	$ 25	$ 2	$ 33	$ 2
Other	21	21	35	33
Total financial assets	$ 46	$ 23	$ 68	$ 35
Financial liabilities:				
Long-term debt[(a)]	$ 10,892	$ 10,297	$ 11,366	$ 11,628
Deferred credits and other liabilities	121	109	136	135
Total financial liabilities	$ 11,013	$ 10,406	$ 11,502	$ 11,763

(a) Excludes capital leases and debt issuance costs, however, includes amount classified as debt due within one year.

Our current assets and liabilities include financial instruments, the most significant of which are trade accounts receivable and payables. We believe the carrying values of our current assets and liabilities approximate fair value. Our fair value assessment incorporates a variety of considerations, including (1) the short-term duration of the instruments, (2) our investment-grade credit rating and (3) our historical incurrence of and expected future insignificance of bad debt expense, which includes an evaluation of counterparty credit risk.

Fair values of our financial assets included in investments and other financial assets and of our financial liabilities included in deferred credits and other liabilities are measured primarily using an income approach and most inputs are internally generated, which results in a Level 3 classification. Estimated future cash flows are discounted using a rate deemed appropriate to obtain the fair value. Other financial assets primarily consist of environmental remediation receivables. Deferred credits and other liabilities primarily consist of a liability resulting from a financing arrangement for the construction of the steam methane reformer ("SMR") at the Javelina gas processing and fractionation complex in Corpus Christi, Texas, insurance liabilities and environmental remediation liabilities.

Fair value of fixed-rate long-term debt is measured using a market approach, based upon the average of quotes for our debt from major financial institutions and a third-party valuation service. Because these quotes cannot be independently verified to the market, they are considered Level 3 inputs. Fair value of variable-rate long-term debt approximates the carrying value.

18. Derivatives

For further information regarding the fair value measurement of derivative instruments, including any effect of master netting agreements or collateral, see Note 17. See Note 2 for a discussion of the types of derivatives we use and the reasons for them. We do not designate any of our commodity derivative instruments as hedges for accounting purposes. Our interest rate derivative instruments that were terminated in 2012 had been designated as fair value accounting hedges.

The following table presents the gross fair values of derivative instruments, excluding cash collateral, and where they appear on the consolidated balance sheets as of December 31, 2016 and 2015:

(In millions)	December 31, 2015	
Balance Sheet Location	Asset	Liability
Commodity derivatives		
Other current assets	$ 113	$ 39
Other current liabilities[(a)]	-	5
Deferred credits and other liabilities[(a)]	-	27

(In millions)	December 31, 2016	
Balance Sheet Location	Asset	Liability
Commodity derivatives		
Other current assets	$ 688	$ 712
Other current liabilities[(a)]	-	13
Deferred credits and other liabilities[(a)]	-	47

(a) Includes embedded derivatives.

Derivatives not Designated as Accounting Hedges

Derivatives that are not designated as accounting hedges may include commodity derivatives used to hedge price risk on (1) inventories, (2) fixed price sales of refined products, (3) the acquisition of foreign-sourced crude oil, (4) the acquisition of ethanol for blending with refined products, (5) sale of NGLs, (6) the purchase of natural gas and (7) purchase of electricity.

The table below summarizes open commodity derivative contracts for crude oil and refined products as of December 31, 2016.

	Position	Total Barrels *(In thousands)*
Crude Oil[(a)]		
Exchange-traded	Long	53,028
Exchange-traded	Short	(52,373)
OTC	Short	(37)

(a) 98.7 percent of the exchange-traded contracts expire in the first quarter of 2017.

	Position	MMbtu
Natural Gas		
OTC	Long	297,017

	Position	Total Gallons *(In thousands)*
Refined Products[(a)]		
Exchange-traded	Long	196,434
Exchange-traded	Short	(221,970)
OTC	Short	(64,212)

(a) 100 percent of the exchange-traded contracts expire in the first quarter of 2017.

The following table summarizes the effect of all commodity derivative instruments in our consolidated statements of income:

(In millions)	Gain (Loss)		
Income Statement Location	2016	2015	2014
Sales and other operating revenues	$ (13)	$ 19	$ 37
Cost of revenues	(167)	294	456
Total	$ (180)	$ 313	$ 493

19. Debt

Our outstanding borrowings at December 31, 2016 and 2015 consisted of the following:

	December 31,	
(In millions)	2016	2015
Marathon Petroleum Corporation:		
Commercial paper	$ -	$ -
364-day bank revolving credit facility due July 2017	-	-
Trade receivables securitization facility due July 2019	-	-
Bank revolving credit facility due 2020	-	-
Term loan agreement due 2019	200	700
Senior notes, 2.700% due December 2018	600	600
Senior notes, 3.400% due December 2020	650	650
Senior notes, 5.125% due March 2021	1,000	1,000
Senior notes, 3.625%, due September 2024	750	750
Senior notes, 6.500%, due March 2041	1,250	1,250
Senior notes, 4.750%, due September 2044	800	800
Senior notes, 5.850% due December 2045	250	250
Senior notes, 5.000%, due September 2054	400	400
MPLX LP:		
MPLX term loan facility due 2019	250	250
MPLX bank revolving credit facility due 2020	-	877
MPLX senior notes, 5.500%, due February 2023	710	710
MPLX senior notes, 4.500%, due July 2023	989	989
MPLX senior notes, 4.875%, due December 2024	1,149	1,149
MPLX senior notes, 4.000%, due February 2025	500	500
MPLX senior notes, 4.875%, due June 2025	1,189	1,189
MarkWest senior notes, 4.500% – 5.500%, due 2023 – 2025	63	63
Capital lease obligations due 2016-2028	319	348
Total	11,069	12,475
Unamortized debt issuance costs	(44)	(51)
Unamortized discount[(a)]	(453)	(499)
Amounts due within one year	(28)	(29)
Total long-term debt due after one year	$ 10,544	$ 11,896

(a) Includes $420 million and $464 million discount as of December 31, 2016 and December 31, 2015, respectively, related to the difference at the time of the acquisition between the fair value and the principal amount of the assumed MarkWest debt.

The following table shows five years of scheduled debt payments.

(In millions)	
2017	$ 28
2018	630
2019	477
2020	683
2021	1,031

Commercial Paper

On February 26, 2016, we established a commercial paper program that allows us to have a maximum of $2 billion in commercial paper outstanding, with maturities up to 397 days from the date of issuance. We do not intend to have outstanding commercial paper borrowings in excess of available capacity under our bank revolving credit facilities. During 2016, we borrowed and repaid $1.26 billion under the commercial paper program. At December 31, 2016, we had no amounts outstanding under the commercial paper program.

MPC Bank Revolving Credit Facilities

On July 20, 2016, we entered into a credit agreement with a syndicate of lenders to replace our existing MPC bank revolving credit facility due in 2017. The new agreement provides for a four-year $2.5 billion bank revolving credit facility (our "four-year revolving credit facility") maturing on July 20, 2020. Additionally, we entered into a 364-day $1 billion bank revolving credit facility (our "364-day revolving credit facility" and together with our four-year revolving credit facility, our "revolving credit facilities") maturing on July 19, 2017.

Our four-year revolving credit facility includes letter of credit issuing capacity of up to $2.0 billion and swingline loan capacity of up to $100 million. We may increase our borrowing capacity under our four-year revolving credit facility by up to an additional $500 million, subject to certain conditions including the consent of the lenders whose commitments would be increased. In addition, the maturity date of the four-year revolving credit facility may be extended for up to two additional one-year periods subject to the approval of lenders holding a majority of the commitments then outstanding, provided that the commitments of any non-consenting lenders will terminate on the then-effective maturity date.

Borrowings under our revolving credit facilities bear interest, at our election, at either the Adjusted LIBO Rate (as defined in our revolving credit facilities) plus a margin or the Alternate Base Rate (as defined in our revolving credit facilities), plus a margin. We are charged various fees and expenses under our revolving credit facilities, including administrative agent fees, commitment fees on the unused portion of our borrowing capacity and fees related to issued and outstanding letters of credit. The applicable margin to the benchmark interest rates and the margin to the benchmark commitment fees payable under our revolving credit facilities fluctuate from time-to-time based on our credit ratings.

Our revolving credit facilities contain certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for arrangements of this type, including a financial covenant that requires us to maintain a ratio of Consolidated Net Debt to Total Capitalization (each as defined in our revolving credit facility) of no greater than 0.65 to 1.00 as of the last day of each fiscal quarter. Other covenants, among other things, restrict our ability to incur debt, create liens on our assets or enter into transactions with affiliates. As of December 31, 2016, we were in compliance with the covenants contained in the revolving credit facilities.

There were no borrowings or letters of credit outstanding at December 31, 2016.

Trade Receivables Securitization Facility

On July 20, 2016, we amended our trade receivables securitization facility ("trade receivables facility") to, among other things, reduce the capacity from $1 billion to $750 million and to extend the maturity date to July 19, 2019. The reduction in capacity reflects the lower refined product price environment.

The trade receivables facility consists of one of our wholly-owned subsidiaries, Marathon Petroleum Company LP ("MPC LP"), selling or contributing on an on-going basis all of its trade receivables (including trade receivables acquired from Marathon Petroleum Trading Canada LLC, a wholly-owned subsidiary of MPC LP), together with all related security and interests in the proceeds thereof, without recourse, to another wholly-owned, bankruptcy-remote special purpose subsidiary, MPC Trade Receivables Company LLC ("TRC"), in exchange for a combination of cash, equity and/or a subordinated note issued by TRC to MPC LP. TRC, in turn, has the ability to finance its purchase of the receivables from MPC LP by selling undivided ownership interests in qualifying trade receivables, together with all related security and interests in the proceeds thereof, without recourse, to the purchasing group in exchange for cash proceeds. The trade receivables facility also provides for the issuance of letters of credit up to $750 million, provided that the aggregate credit exposure of the purchasing group, including outstanding letters of credit, may not exceed the lesser of $750 million or the balance of our eligible trade receivables at any one time.

To the extent that TRC retains an ownership interest in the receivables it has purchased or received from MPC LP, such interest will be included in our consolidated financial statements solely as a result of the consolidation of the financial statements of TRC with those of MPC. The receivables sold or contributed to TRC are available first and foremost to satisfy claims of the creditors of TRC and are not available to satisfy the claims of creditors of MPC. TRC has granted a security interest in all of its assets to the purchasing group to secure its obligations under the Receivables Purchase Agreement.

Proceeds from the sale of undivided percentage ownership interests in qualifying receivables under the trade receivables facility will be reflected as debt on our consolidated balance sheet. We will remain responsible for servicing the receivables sold to the purchasing group. TRC pays floating-rate interest charges and usage fees on amounts outstanding under the trade receivables facility, if any, and certain other fees related to the administration of the facility and letters of credit that are issued and outstanding under the trade receivables facility.

The Receivables Purchase Agreement and Second Amended and Restated Receivables Sale Agreement include representations and covenants that we consider usual and customary for arrangements of this type. Trade receivables are subject to customary criteria, limits and reserves before being deemed to qualify for sale by TRC pursuant to the trade receivables facility. In addition, further purchases of qualified trade receivables under the trade receivables facility are subject to termination, and TRC may be subject to default fees, upon the occurrence of certain amortization events that are included in the Receivables Purchase Agreement, all of which we consider to be usual and customary for arrangements of this type. At December 31, 2016, we were in compliance with the covenants contained in the Receivables Purchase Agreement and Second Amended and Restated Receivables Sale Agreement.

During 2016, we borrowed $430 million under the trade receivables securitization facility at an average interest rate of 1.4 percent and repaid all of these borrowings. There were no borrowings or letters of credit outstanding under the trade receivables facility at December 31, 2016. As of December 31, 2016, eligible trade receivables supported borrowings and letter of credit issuances of $684 million.

MPC Term Loan Agreement

On August 26, 2014, we entered into a $700 million five-year senior unsecured term loan credit agreement ("term loan agreement") with a syndicate of lenders to fund a portion of the purchase price for the acquisition of

Hess' Retail Operations and Related Assets. The term loan was drawn in full on September 24, 2014. The term loan agreement matures on September 24, 2019 and may be prepaid at any time without premium or penalty. We pay certain customary fees under the term loan agreement, including an annual administrative fee to the administrative agent.

On September 30, 2016, we prepaid $500 million under the MPC term loan agreement with available cash on hand. As of December 31, 2016, $200 million in borrowings was outstanding under the term loan agreement.

Borrowings under the term loan agreement bear interest, at our election, at either the Adjusted LIBO Rate (as defined in the term loan agreement) plus a margin or the Alternate Base Rate (as defined in the term loan agreement) plus a margin. The applicable margin to the benchmark interest rates fluctuate from time-to-time based on our credit ratings. The borrowings under this facility during 2016 were at an average interest rate of 1.6 percent.

The term loan agreement contains representation and warranties, affirmative and negative covenants and events of default that are substantially similar to those contained in our revolving credit facilities, which we consider to be usual and customary for an agreement of this type. Among other things, our term loan agreement requires us to maintain, as of the last day of each fiscal quarter, a ratio of Consolidated Net Debt to Total Capitalization (as defined in the term loan agreement) of no greater than 0.65 to 1.00. As of December 31, 2016, we were in compliance with the covenants contained in the term loan agreement.

MPC Senior Notes

On December 14, 2015, we completed a public offering of $1.5 billion in aggregate principal amount of unsecured senior notes (the "new MPC senior notes"), consisting of $600 million aggregate principal amount of 2.700% senior notes due 2018, $650 million aggregate principal amount of 3.400% senior notes due 2020 and $250 million aggregate principal amount of 5.850% senior notes due 2045. The net proceeds from the offering of the new MPC senior notes were $1.49 billion, after deducting underwriting discounts and offering expenses.

We used a majority of the net proceeds from this offering to extinguish the $750 million aggregate principal amount of our 3.500% senior notes due 2016. During December 2015, we deposited $763 million with our senior notes trustee in full satisfaction of our obligations for the 3.500% senior notes due 2016. Under the terms of the senior notes indenture governing the 3.500% senior notes due 2016, our obligations related to these notes, including the payment of principal and interest to the maturity date, was discharged in full upon making such deposit. As a result, we recorded a loss on extinguishment of debt of $5 million. We used the remaining net proceeds from the new MPC senior notes for general corporate purposes.

Interest on each series of the new MPC senior notes is payable semi-annually in arrears on June 15 and December 15, commencing on June 15, 2016.

The new MPC senior notes are unsecured and unsubordinated obligations of MPC and rank equally with its other existing and future unsecured and unsubordinated indebtedness. The new MPC senior notes are structurally subordinate to the secured and unsecured debt of MPC's subsidiaries, including all debt of MPLX and its subsidiaries.

MPLX Credit Agreement

MPLX is party to a credit agreement, dated as of November 20, 2014, and amended as of October 27, 2015 ("MPLX credit agreement"), providing for a $2 billion bank revolving credit facility with a maturity date of December 4, 2020 and an outstanding $250 million term loan facility with a maturity date of November 20, 2019.

The MPLX credit agreement includes letter of credit issuing capacity of up to $250 million and swingline loan capacity of up to $100 million. The revolving borrowing capacity under the MPLX credit agreement may be

increased by up to an additional $500 million, subject to certain conditions, including the consent of the lenders whose commitments would increase. In addition, the maturity date of the bank revolving credit facility may be extended from time-to-time during its term to a date that is one year after the then-effective maturity date, subject to the approval of lenders holding the majority of the loans and commitments then outstanding, provided that the commitments of any non-consenting lenders will be terminated on the then-effective maturity date.

The maturity date for the term loan facility may be extended for up to two additional one-year periods subject to the consent of the lenders holding a majority of the outstanding term loan borrowings, provided that the portion of the term loan borrowings held by any non-consenting lenders will continue to be due and payable on the then-effective maturity date.

Borrowings under the MPLX credit agreement bear interest, at our election, at the Adjusted LIBO Rate or the Alternate Base Rate (as defined in the MPLX credit agreement) plus a specified margin. MPLX is charged various fees and expenses in connection with the agreement, including administrative agent fees, commitment fees on the unused portion of the borrowing capacity and fees with respect to issued and outstanding letters of credit. The applicable margins to the benchmark interest rates and the commitment fees payable under the MPLX credit agreement fluctuate from time-to-time based on MPLX's credit ratings.

The MPLX credit agreement includes certain representations and warranties, affirmative and restrictive covenants and events of default that we consider to be usual and customary for an agreement of this type, including a financial covenant that requires MPLX to maintain a ratio of Consolidated Total Debt as of the end of each fiscal quarter to Consolidated EBITDA (both as defined in the MPLX credit agreement) for the prior four fiscal quarters of no greater than 5.0 to 1.0 (or 5.5 to 1.0 for up to two fiscal quarters following certain acquisitions). Consolidated EBITDA is subject to adjustments for certain acquisitions completed and capital projects undertaken during the relevant period. Other covenants, among other things, restrict MPLX and certain of its subsidiaries from incurring debt, creating liens on its assets and entering into transactions with affiliates. As of December 31, 2016, MPLX was in compliance with the covenants contained in the MPLX credit agreement.

In connection with the closing of the MarkWest Merger, MarkWest's existing credit facility was terminated and the approximately $943 million outstanding under MarkWest's bank revolving credit facility was repaid with $850 million of borrowings under MPLX's bank revolving credit facility and $93 million in cash. During 2016, MPLX borrowed $434 million under the bank revolving credit facility, at an average interest rate of 1.9 percent, per annum, and repaid $1.31 billion of these borrowings. At December 31, 2016, MPLX had no outstanding borrowings and $3 million of letters of credit outstanding under the bank revolving credit facility, resulting in total unused loan availability of $2 billion. At December 31, 2016, MPLX had $250 million in borrowings outstanding under the term loan facility that bore interest at an average rate of 2.0 percent during 2016.

MPLX and MarkWest Senior Notes

In connection with the MarkWest Merger, MPLX assumed MarkWest's outstanding debt, which included $4.1 billion aggregate principal amount of senior notes outstanding. On December 22, 2015, approximately $4.04 billion aggregate principal amount of MarkWest's outstanding senior notes were exchanged for an aggregate principal amount of approximately $4.04 billion of new unsecured senior notes issued by MPLX and cash of $1 for each $1,000 of principal amount exchanged in an exchange offer and consent solicitation undertaken by MPLX and MarkWest.

The new MPLX senior notes consist of approximately $710 million aggregate principal amount of 5.500% senior notes due February 15, 2023, approximately $989 million aggregate principal amount of 4.500% senior notes due July 15, 2023, approximately $1.15 billion aggregate principal amount of 4.875% senior notes due December 1, 2024 and approximately $1.19 billion aggregate principal amount of 4.875% senior notes due June 1, 2025. Interest on each series of new MPLX senior notes is payable semi-annually in arrears on February 15th and

August 15th of each year with respect to the 5.500% 2023 senior notes, on January 15th and July 15th of each year with respect to the 4.500% 2023 senior notes and on June 1st and December 1st of each year with respect to the 4.875% 2024 senior notes and the 4.875% 2025 senior notes.

After giving effect to the exchange offer and consent solicitation referred to above, as of December 31, 2016, MarkWest had outstanding approximately $40 million aggregate principal amount of 5.500% senior notes due February 15, 2023, approximately $11 million aggregate principal amount of 4.500% senior notes due July 15, 2023, approximately $1 million aggregate principal amount of 4.875% senior notes due December 1, 2024 and approximately $11 million aggregate principal amount of 4.875% senior notes due June 1, 2025. Interest on each series of the MarkWest senior notes is payable semi-annually in arrears on February 15th and August 15th of each year with respect to the 5.500% 2023 senior notes, on January 15th and July 15th of each year with respect to the 4.500% 2023 senior notes and on June 1st and December 1st of each year with respect to the 4.875% 2024 senior notes and the 4.875% 2025 senior notes.

The new MPLX notes are unsecured senior obligations of MPLX and rank equally in right of payment with all of its other senior unsecured debt and are structurally subordinate to the secured and unsecured debt of MPLX's subsidiaries, including any debt of MarkWest that remains outstanding.

On February 12, 2015, MPLX completed a public offering of $500 million aggregate principal amount of four percent unsecured senior notes due February 15, 2025. The net proceeds, which were approximately $495 million after deducting underwriting discounts, were used to repay the amounts outstanding under the MPLX bank revolving credit facility, as well as for general partnership purposes. Interest is payable semi-annually in arrears on February 15th and August 15th of each year.

20. Supplemental Cash Flow Information

(In millions)	2016	2015	2014
Net cash provided by operating activities included:			
Interest paid (net of amounts capitalized)	$ 478	$ 272	$ 166
Net income taxes paid to taxing authorities	140	1,605	1,362
Non-cash investing and financing activities:			
Capital lease obligations increase	$ -	$ 1	$ -
Contribution of assets to joint venture[a]	272	-	-
Property, plant and equipment sold	-	5	4
Property, plant and equipment acquired	-	5	4
Acquisition:			
Fair value of MPLX units issued[b]	-	7,326	-
Payable to MPLX Class B unitholders	-	50	-

(a) Speedway's contribution of travel plaza locations to new joint venture with Pilot Flying J.

(b) See Note 5.

The consolidated statements of cash flows exclude changes to the consolidated balance sheets that did not affect cash. The following is a reconciliation of additions to property, plant and equipment to total capital expenditures:

(In millions)	2016	2015	2014
Additions to property, plant and equipment per consolidated statements of cash flows	$ 2,892	$ 1,998	$ 1,480
Non-cash additions to property, plant and equipment	-	5	4
Asset retirement expenditures[a]	6	1	2
Increase (decrease) in capital accruals	(127)	94	95
Total capital expenditures before acquisitions	2,771	2,098	1,581
Acquisitions[b]	(133)	11,397	2,744
Total capital expenditures	$ 2,638	$ 13,495	$ 4,325

[a] Included in All other, net – Operating activities on the consolidated statements of cash flows.

[b] 2016 includes adjustments to the fair values of property, plant and equipment, intangibles and goodwill acquired in connection with the MarkWest Merger. The 2015 acquisitions include the MarkWest Merger. The 2014 acquisitions include the acquisition of Hess' Retail Operations and Related Assets. The acquisition numbers above include property, plant and equipment, intangibles and goodwill. See Note 5.

21. Accumulated Other Comprehensive Loss

The following table shows the changes in accumulated other comprehensive loss by component. Amounts in parentheses indicate debits.

(In millions)	Pension Benefits	Other Benefits	Gain on Cash Flow Hedge	Workers Compensation	Total
Balance as of December 31, 2014	$ (217)	$ (104)	$ 4	$ 4	$ (313)
Other comprehensive income (loss) before reclassifications	(44)	31	-	(1)	(14)
Amounts reclassified from accumulated other comprehensive loss:					
Amortization – prior service credit[a]	(46)	(4)	-	-	(50)
– actuarial loss[a]	51	8	-	-	59
– settlement loss[a]	4	-	-	-	4
Tax effect	(3)	(1)	-	-	(4)
Other comprehensive income (loss)	(38)	34	-	(1)	(5)
Balance as of December 31, 2015	$ (255)	$ (70)	$ 4	$ 3	$ (318)

(In millions)	Pension Benefits	Other Benefits	Gain on Cash Flow Hedge	Workers Compensation	Total
Balance as of December 31, 2015	$ (255)	$ (70)	$ 4	$ 3	$ (318)
Other comprehensive income before reclassifications	22	64	-	-	86
Amounts reclassified from accumulated other comprehensive loss:					
Amortization – prior service credit[a]	(46)	(3)	-	-	(49)
– actuarial loss[a]	38	2	-	-	40
– settlement loss[a]	7	-	-	-	7
Other[b]	-	-	-	(1)	(1)
Tax effect	1	-	-	-	1
Other comprehensive income (loss)	22	63	-	(1)	84
Balance as of December 31, 2016	$ (233)	$ (7)	$ 4	$ 2	$ (234)

(a) These accumulated other comprehensive loss components are included in the computation of net periodic benefit cost. See Note 22.

(b) This amount was reclassified out of accumulated other comprehensive loss and is included in selling, general and administrative on the consolidated statements of income.

22. Defined Benefit Pension and Other Postretirement Plans

We have noncontributory defined benefit pension plans covering substantially all employees. Benefits under these plans have been based primarily on age, years of service and final average pensionable earnings. The years of service component of this formula was frozen as of December 31, 2009. Benefits for service beginning January 1, 2010 are based on a cash balance formula with an annual percentage of eligible pay credited based upon age and years of service. Eligible Speedway employees accrue benefits under a defined contribution plan for service years beginning January 1, 2010.

We also have other postretirement benefits covering most employees. Health care benefits are provided through comprehensive hospital, surgical and major medical benefit provisions subject to various cost-sharing features. Retiree life insurance benefits are provided to a closed group of retirees. Other postretirement benefits are not funded in advance.

Obligations and funded status – The accumulated benefit obligation for all defined benefit pension plans was $1,914 million and $1,918 million as of December 31, 2016 and 2015.

The following summarizes our defined benefit pension plans that have accumulated benefit obligations in excess of plan assets.

	December 31,	
(In millions)	2016	2015
Projected benefit obligations	$ 2,024	$ 1,997
Accumulated benefit obligations	1,914	1,918
Fair value of plan assets	1,659	1,570

The following summarizes the projected benefit obligations and funded status for our defined benefit pension and other postretirement plans:

(In millions)	Pension Benefits 2016	Pension Benefits 2015	Other Benefits 2016	Other Benefits 2015
Change in benefit obligations:				
Benefit obligations at January 1	$ 1,997	$ 2,075	$ 800	$ 812
Service cost	114	101	32	31
Interest cost	73	71	35	32
Actuarial (gain) loss	15	(63)	(101)	(63)
Benefits paid	(175)	(187)	(26)	(24)
Other[a]	-	-	-	12
Benefit obligations at December 31	2,024	1,997	740	800
Change in plan assets:				
Fair value of plan assets at January 1	1,570	1,744	-	-
Actual return on plan assets	145	(33)	-	-
Employer contributions	119	46	26	24
Benefits paid from plan assets	(175)	(187)	(26)	(24)
Fair value of plan assets at December 31	1,659	1,570	-	-
Funded status of plans at December 31	$ (365)	$ (427)	$ (740)	$ (800)
Amounts recognized in the consolidated balance sheets:				
Current liabilities	$ (18)	$ (19)	$ (32)	$ (29)
Noncurrent liabilities	(347)	(408)	(708)	(771)
Accrued benefit cost	$ (365)	$ (427)	$ (740)	$ (800)
Pretax amounts recognized in accumulated other comprehensive loss:[b]				
Net actuarial loss	$ 645	$ 723	$ 17	$ 120
Prior service credit	(276)	(323)	(6)	(9)

[a] Includes adjustments related to the MarkWest Merger in 2015.

[b] Amounts exclude those related to LOOP and Explorer, equity method investees with defined benefit pension and postretirement plans for which net losses of $16 million and less than $1 million were recorded in accumulated other comprehensive loss in 2016, reflecting our ownership share.

Components of net periodic benefit cost and other comprehensive loss – The following summarizes the net periodic benefit costs and the amounts recognized as other comprehensive loss for our defined benefit pension and other postretirement plans.

	Pension Benefits			Other Benefits		
(In millions)	2016	2015	2014	2016	2015	2014
Components of net periodic benefit cost:						
Service cost	$ 114	$ 101	$ 88	$ 32	$ 31	$ 27
Interest cost	73	71	74	35	32	33
Expected return on plan assets	(98)	(98)	(107)	-	-	-
Amortization – prior service credit	(46)	(46)	(46)	(3)	(4)	(4)
– actuarial loss	38	51	51	2	8	2
– settlement loss	7	4	96	-	-	-
Net periodic benefit cost[(a)]	$ 88	$ 83	$ 156	$ 66	$ 67	$ 58
Other changes in plan assets and benefit obligations recognized in other comprehensive loss (pretax):						
Actuarial (gain) loss	$ (33)	$ 69	$ 188	$ (101)	$ (63)	$ 86
Prior service cost[(b)]	-	-	-	-	13	-
Amortization of actuarial loss	(45)	(55)	(147)	(2)	(8)	(2)
Amortization of prior service cost	46	46	46	3	4	4
Other	-	-	-	-	-	-
Total recognized in other comprehensive loss	$ (32)	$ 60	$ 87	$ (100)	$ (54)	$ 88
Total recognized in net periodic benefit cost and other comprehensive loss	$ 56	$ 143	$ 243	$ (34)	$ 13	$ 146

(a) Net periodic benefit cost reflects a calculated market-related value of plan assets which recognizes changes in fair value over three years.

(b) Includes adjustments related to the MarkWest Merger in 2015.

Lump sum payments to employees retiring in 2016, 2015 and 2014 exceeded the plan's total service and interest costs expected for those years. Settlement losses are required to be recorded when lump sum payments exceed total service and interest costs. As a result, pension settlement expenses were recorded in 2016, 2015 and 2014 related to our cumulative lump sum payments made during those years.

The estimated net actuarial loss and prior service credit for our defined benefit pension plans that will be amortized from accumulated other comprehensive loss into net periodic benefit cost in 2017 are $35 million and $39 million, respectively. The estimated net actuarial loss and prior service credit for our other defined benefit postretirement plans that will be amortized from accumulated other comprehensive loss into net periodic benefit cost in 2017 is $2 million and $3 million, respectively.

Plan assumptions – The following summarizes the assumptions used to determine the benefit obligations at December 31, and net periodic benefit cost for the defined benefit pension and other postretirement plans for 2016, 2015 and 2014.

	Pension Benefits			Other Benefits		
	2016	2015	2014	2016	2015	2014
Weighted-average assumptions used to determine benefit obligation:						
Discount rate	3.90%	4.00%	3.65%	4.25%	4.50%	4.15%
Rate of compensation increase	5.00%	3.70%	3.70%	5.00%	3.70%	3.70%
Weighted-average assumptions used to determine net periodic benefit cost:						
Discount rate	3.80%	3.70%	4.05%	4.50%	4.30%	4.95%
Expected long-term return on plan assets[(a)]	6.50%	6.75%	7.00%	—%	—%	—%
Rate of compensation increase	5.00%	3.70%	3.70%	5.00%	3.70%	3.70%

(a) Effective January 1, 2017, the expected long-term rate of return on plan assets is 6.50 percent due to a continuation of a change in our primary plan investment strategy, which began January 1, 2014.

Expected long-term return on plan assets

The overall expected long-term return on plan assets assumption is determined based on an asset rate-of-return modeling tool developed by a third-party investment group. The tool utilizes underlying assumptions based on actual returns by asset category and inflation and takes into account our asset allocation to derive an expected long-term rate of return on those assets. Capital market assumptions reflect the long-term capital market outlook. The assumptions for equity and fixed income investments are developed using a building-block approach, reflecting observable inflation information and interest rate information available in the fixed income markets. Long-term assumptions for other asset categories are based on historical results, current market characteristics and the professional judgment of our internal and external investment teams.

Assumed health care cost trend

The following summarizes the assumed health care cost trend rates.

	December 31,		
	2016	2015	2014
Health care cost trend rate assumed for the following year:			
Medical: Pre-65	7.00%	7.50%	8.00%
Prescription drugs	9.00%	7.00%	7.00%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate):			
Medical: Pre-65	4.50%	5.00%	5.00%
Prescription drugs	4.50%	5.00%	5.00%
Year that the rate reaches the ultimate trend rate:			
Medical: Pre-65	2026	2021	2021
Prescription drugs	2026	2021	2021

Increases in the post-65 medical plan premium for the Marathon Petroleum Health Plan and the Marathon Petroleum Retiree Health Plan are the lower of the trend rate or four percent.

Assumed health care cost trend rates have a significant effect on the amounts reported for defined benefit retiree health care plans. A one percentage point change in assumed health care cost trend rates would have the following effects:

(In millions)	1-Percentage-Point Increase	1-Percentage-Point Decrease
Effect on total of service and interest cost components	$ 6	$ (5)
Effect on other postretirement benefit obligations	33	(29)

Plan investment policies and strategies

The investment policies for our pension plan assets reflect the funded status of the plans and expectations regarding our future ability to make further contributions. Long-term investment goals are to: (1) manage the assets in accordance with the legal requirements of all applicable laws; (2) diversify plan investments across asset classes to achieve an optimal balance between risk and return and between income and growth of assets through capital appreciation; and (3) source benefit payments primarily through existing plan assets and anticipated future returns.

The investment goals are implemented to manage the plans' funded status volatility and minimize future cash contributions. The asset allocation strategy will change over time in response to changes primarily in funded status, which is dictated by current and anticipated market conditions, the independent actions of our investment committee, required cash flows to and from the plans and other factors deemed appropriate. Such changes in asset allocation are intended to allocate additional assets to the fixed income asset class should the funded status improve. The fixed income asset class shall be invested in such a manner that its interest rate sensitivity correlates highly with that of the plans' liabilities. Other asset classes are intended to provide additional return with associated higher levels of risk. Investment performance and risk is measured and monitored on an ongoing basis through quarterly investment meetings and periodic asset and liability studies. At December 31, 2016, the primary plan's targeted asset allocation was 51 percent equity, private equity, real estate, and timber securities and 49 percent fixed income securities.

Fair value measurements

Plan assets are measured at fair value. The following provides a description of the valuation techniques employed for each major plan asset category at December 31, 2016 and 2015.

Cash and cash equivalents – Cash and cash equivalents include a collective fund serving as the investment vehicle for the cash reserves and cash held by third-party investment managers. The collective fund is valued at net asset value ("NAV") on a scheduled basis using a cost approach, and is considered a Level 2 asset. Cash and cash equivalents held by third-party investment managers are valued using a cost approach and are considered Level 2.

Equity – Equity investments includes common stock, mutual and pooled funds. Common stock investments are valued using a market approach, which are priced daily in active markets and are considered Level 1. Mutual and pooled equity funds are well diversified portfolios, representing a mix of strategies in domestic, international and emerging market strategies. Mutual funds are publicly registered, valued at NAV on a daily basis using a market approach and are considered Level 1 assets. Pooled funds are valued at NAV using a market approach and are considered Level 2.

Fixed Income – Fixed income investments include corporate bonds, U.S. dollar treasury bonds and municipal bonds. These securities are priced on observable inputs using a combination of market, income and cost approaches. These securities are considered Level 2 assets. Fixed income also includes a well diversified bond portfolio structured as a pooled fund. This fund is valued at NAV on a daily basis using a market approach and is considered Level 2.

Private Equity – Private equity investments include interests in limited partnerships which are valued using information provided by external managers for each individual investment held in the fund. These holdings are considered Level 3.

Real Estate – Real estate investments consist of interests in limited partnerships. These holdings are either appraised or valued using investment manager's assessment of assets held. These holdings are considered Level 3.

Other – Other investments include two limited liability companies ("LLCs") with no public market. The LLCs were formed to acquire timberland in the northwest U.S. These holdings are either appraised or valued using investment manager's assessment of assets held. These holdings are considered Level 3. Other investments classified as Level 1 include publicly traded depository receipts.

The following tables present the fair values of our defined benefit pension plans' assets, by level within the fair value hierarchy, as of December 31, 2016 and 2015.

	December 31, 2016			
(In millions)	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	$ -	$ 24	$ -	$ 24
Equity:				
Common stocks	71	-	-	71
Mutual funds	160	-	-	160
Pooled funds	-	451	-	451
Fixed income:				
Corporate	-	570	-	570
Government	-	90	-	90
Pooled funds	-	173	-	173
Private equity	-	-	60	60
Real estate	-	-	39	39
Other	2	-	19	21
Total investments, at fair value	$ 233	$ 1,308	$ 118	$ 1,659

	December 31, 2015			
(In millions)	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	$ -	$ 27	$ -	$ 27
Equity:				
Common stocks	57	-	-	57
Mutual funds	142	-	-	142
Pooled funds	-	399	-	399
Fixed income:				
Corporate	-	516	-	516
Government	-	103	-	103
Pooled funds	-	193	-	193
Private equity	-	-	62	62
Real estate	-	-	50	50
Other	2	-	19	21
Total investments, at fair value	$ 201	$ 1,238	$ 131	$ 1,570

The following is a reconciliation of the beginning and ending balances recorded for plan assets classified as Level 3 in the fair value hierarchy:

	2016			
(In millions)	Private Equity	Real Estate	Other	Total
Beginning balance	$ 62	$ 50	$ 19	$ 131
Actual return on plan assets:				
Realized	8	5	-	13
Unrealized	2	(3)	-	(1)
Purchases	2	1	-	3
Sales	(14)	(14)	-	(28)
Ending balance	$ 60	$ 39	$ 19	$ 118

	2015			
(In millions)	Private Equity	Real Estate	Other	Total
Beginning balance	$ 66	$ 57	$ 21	$ 144
Actual return on plan assets:				
Realized	12	6	-	18
Unrealized	(1)	(3)	(2)	(6)
Purchases	5	5	-	10
Sales	(20)	(15)	-	(35)
Ending balance	$ 62	$ 50	$ 19	$ 131

Cash Flows

Contributions to defined benefit plans – Our funding policy with respect to the funded pension plans is to contribute amounts necessary to satisfy minimum pension funding requirements, including requirements of the Pension Protection Act of 2006, plus such additional, discretionary, amounts from time to time as determined appropriate by management. In 2016, we made pension contributions totaling $119 million. We have no required funding for 2017, but may make voluntary contributions at our discretion. Cash contributions to be paid from our general assets for the unfunded pension and postretirement plans are estimated to be approximately $14 million and $32 million, respectively, in 2017.

Estimated future benefit payments – The following gross benefit payments, which reflect expected future service, as appropriate, are expected to be paid in the years indicated.

(In millions)	Pension Benefits	Other Benefits
2017	$ 174	$ 32
2018	177	35
2019	182	37
2020	165	39
2021	165	41
2022 through 2026	801	222

Contributions to defined contribution plans – We also contribute to several defined contribution plans for eligible employees. Contributions to these plans totaled $113 million, $94 million and $86 million in 2016, 2015 and 2014, respectively.

Multiemployer Pension Plan

We contribute to one multiemployer defined benefit pension plan under the terms of a collective-bargaining agreement that covers some of our union-represented employees. The risks of participating in this multiemployer plan are different from single-employer plans in the following aspects:

- Assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.
- If we choose to stop participating in the multiemployer plan, we may be required to pay that plan an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

Our participation in this plan for 2016, 2015 and 2014 is outlined in the table below. The "EIN" column provides the Employee Identification Number for the plan. The most recent Pension Protection Act zone status available in 2016 and 2015 is for the plan's year ended December 31, 2015 and December 31, 2014, respectively. The zone status is based on information that we received from the plan and is certified by the plan's actuary. Among other factors, plans in the red zone are generally less than 65 percent funded. The "FIP/RP Status Pending/ Implemented" column indicates a financial improvement plan or a rehabilitation plan has been implemented. The last column lists the expiration date of the collective-bargaining agreement to which the plan is subject. There have been no significant changes that affect the comparability of 2016, 2015 and 2014 contributions. Our portion of the contributions does not make up more than five percent of total contributions to the plan.

		Pension Protection Act Zone Status		FIP/RP Status Pending/	MPC Contributions (In millions)			Surcharge	Expiration Date of Collective - Bargaining
Pension Fund	EIN	2016	2015	Implemented	2016	2015	2014	Imposed	Agreement
Central States, Southeast and Southwest Areas Pension Plan[(a)]	36-6044243	Red	Red	Implemented	$ 4	$ 4	$ 4	No	January 31, 2019

(a) This agreement has a minimum contribution requirement of $303 per week per employee for 2017. A total of 280 employees participated in the plan as of December 31, 2016.

Multiemployer Health and Welfare Plan

We contribute to one multiemployer health and welfare plan that covers both active employees and retirees. Through the health and welfare plan employees receive medical, dental, vision, prescription and disability coverage. Our contributions to this plan totaled $6 million, $7 million and $6 million for 2016, 2015 and 2014, respectively.

23. Stock-Based Compensation Plans

Description of the Plans

Effective April 26, 2012, our employees and non-employee directors became eligible to receive equity awards under the Marathon Petroleum Corporation 2012 Incentive Compensation Plan ("MPC 2012 Plan"). The MPC

2012 Plan authorizes the Compensation Committee of our board of directors ("Committee") to grant non-qualified or incentive stock options, stock appreciation rights, stock awards (including restricted stock and restricted stock unit awards), cash awards and performance awards to our employees and non-employee directors. Under the MPC 2012 Plan, no more than 50 million shares of our common stock may be delivered and no more than 20 million shares of our common stock may be the subject of awards that are not stock options or stock appreciation rights. In the sole discretion of the Committee, 20 million shares of our common stock may be granted as incentive stock options. Shares issued as a result of awards granted under these plans are funded through the issuance of new MPC common shares.

Prior to April 26, 2012, our employees and non-employee directors were eligible to receive equity awards under the Marathon Petroleum Corporation 2011 Second Amended and Restated Incentive Compensation Plan ("MPC 2011 Plan").

Stock-based awards under the Plans

We expense all share-based payments to employees and non-employee directors based on the grant date fair value of the awards over the requisite service period, adjusted for estimated forfeitures.

Stock Options – We grant stock options to certain officer and non-officer employees. All of the stock options granted in 2016 fell under the MPC 2012 Plan. Stock options awarded under the MPC 2011 Plan and the MPC 2012 Plan represent the right to purchase shares of our common stock at its fair market value, which is the closing price of MPC's common stock on the date of grant. Stock options have a maximum term of ten years from the date they are granted, and vest over a requisite service period of three years. We use the Black Scholes option-pricing model to estimate the fair value of stock options granted, which requires the input of subjective assumptions.

Restricted Stock and Restricted Stock Units – We grant restricted stock and restricted stock units to employees and non-employee directors. In general, restricted stock and restricted stock units granted to employees vest over a requisite service period of three years. Restricted stock and restricted stock unit awards granted after 2011 to officers are subject to an additional one year holding period after the three-year vesting period. Restricted stock recipients who received grants in 2012 and after have the right to vote such stock; however, dividends are accrued and will be paid upon vesting. Restricted stock units granted to non-employee directors are considered to vest immediately at the time of the grant for accounting purposes, as they are non-forfeitable, but are not issued until the director's departure from the board of directors. Restricted stock unit recipients do not have the right to vote such shares and receive dividend equivalents payable upon vesting. The non-vested shares are not transferable and are held by our transfer agent. The fair values of restricted stock are equal to the market price of our common stock on the grant date.

Performance Units – We grant performance unit awards to certain officer employees. Performance units are dollar denominated. The target value of all performance units is $1.00, with actual payout up to $2.00 per unit (up to 200 percent of target). Performance units issued under the MPC 2012 Plan have a 36-month requisite service period. The payout value of these awards will be determined by the relative ranking of the total shareholder return ("TSR"*)* of MPC common stock compared to the TSR of a select group of peer companies, as well as the Standard & Poor's 500 Energy Index fund over an average of four measurement periods. These awards will be settled 25 percent in MPC common stock and 75 percent in cash. The number of shares actually distributed will be determined by dividing 25 percent of the final payout by the closing price of MPC common stock on the day the Committee certifies the final TSR rankings, or the next trading day if the certification is made outside of normal trading hours. The performance units paying out in cash are accounted for as liability awards and recorded at fair value with a mark-to-market adjustment made each quarter. The performance units that settle in shares are accounted for as equity awards.

Total Stock-Based Compensation Expense

The following table reflects activity related to our stock-based compensation arrangements:

(In millions)	2016	2015	2014
Stock-based compensation expense	$ 45	$ 42	$ 40
Tax benefit recognized on stock-based compensation expense	17	16	15
Cash received by MPC upon exercise of stock option awards	10	33	26
Tax benefit received for tax deductions for stock awards exercised	4	26	19

Stock Option Awards

The Black Scholes option-pricing model values used to value stock option awards granted were determined based on the following weighted average assumptions:

	2016	2015	2014
Weighted average exercise price per share	$ 35.27	$ 50.85	$ 42.51
Expected life in years	6.2	6.0	5.8
Expected volatility	38%	33%	36%
Expected dividend yield	3.0%	2.0%	1.9%
Risk-free interest rate	1.4%	1.7%	1.8%
Weighted average grant date fair value of stock option awards granted	$ 9.84	$ 13.44	$ 12.69

The expected life of stock options granted is based on historical data and represents the period of time that options granted are expected to be held prior to exercise. The 2016 assumption for expected volatility of our stock price reflects a weighting of 50 percent of our common stock implied volatility and 50 percent of our common stock historical volatility. The risk-free interest rate for periods within the expected life of the option is based on the U.S. Treasury yield curve in effect at the time of the grant.

The following is a summary of our common stock option activity in 2016:

	Number of of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Terms (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 31, 2015	8,724,631	$ 27.16		
Granted	1,474,177	35.27		
Exercised	(637,761)	18.78		
Forfeited, canceled or expired	(29,607)	42.91		
Outstanding at December 31, 2016	9,531,440	28.93		
Vested and expected to vest at December 31, 2016	9,518,269	28.90	5.4	$ 205
Exercisable at December 31, 2016	7,094,204	24.90	4.3	181

The intrinsic value of options exercised by MPC employees during 2016, 2015 and 2014 was $14 million, $60 million and $48 million, respectively.

As of December 31, 2016, unrecognized compensation cost related to stock option awards was $8 million, which is expected to be recognized over a weighted average period of 1.5 years.

Restricted Stock Awards

The following is a summary of restricted stock award activity of our common stock in 2016:

	Shares of Restricted Stock ("RS")		Restricted Stock Units ("RSU")	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Units	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	1,074,543	$ 47.70	513,220	$ 24.59
Granted	732,074	36.17	45,495	40.85
RS's Vested/RSU's Issued	(477,339)	46.26	(197,598)	21.62
Forfeited	(78,935)	47.53	-	-
Outstanding at December 31, 2016	1,250,343	41.51	361,117	28.26

Of the 361,117 restricted stock units outstanding, 343,327 are vested and have a weighted average grant date fair value of $27.25. These vested but unissued units are held by our non-employee directors and certain officers, are non-forfeitable and are issuable upon the director's departure from our board of directors or officers end of employment with the company.

The following is a summary of the values related to restricted stock and restricted stock unit awards held by MPC employees and non-employee directors:

	Restricted Stock		Restricted Stock Units	
	Intrinsic Value of Awards Vested During the Period (in millions)	Weighted Average Grant Date Fair Value of Awards Granted During the Period	Intrinsic Value of Awards Vested During the Period (in millions)	Weighted Average Grant Date Fair Value of Awards Granted During the Period
2016	$ 17	$ 36.17	$ 8	$ 40.85
2015	27	50.64	21	49.87
2014	28	43.82	-	42.95

As of December 31, 2016, unrecognized compensation cost related to restricted stock awards was $34 million, which is expected to be recognized over a weighted average period of 1.5 years. There was no material unrecognized compensation cost related to restricted stock unit awards.

Performance Unit Awards

The following table presents a summary of the 2016 activity for performance unit awards to be settled in shares:

	Number of Units	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2015	6,145,442	$ 0.92
Granted	2,329,500	0.57
Exercised	(1,904,792)	0.95
Canceled	(314,972)	0.93
Outstanding at December 31, 2016	6,255,178	0.78

The number of shares that would be issued upon target vesting, using the closing price of our common stock on December 31, 2016 would be 124,234 shares.

As of December 31, 2016, unrecognized compensation cost related to equity-classified performance unit awards was $2 million, which is expected to be recognized over a weighted average period of 1.5 years.

Performance units paying out in units have a grant date fair value calculated using a Monte Carlo valuation model, which requires the input of subjective assumptions. The following table provides a summary of these assumptions:

	2016	2015	2014
Risk-free interest rate	0.96%	0.95%	0.63%
Look-back period	2.83 years	2.84 years	2.84 years
Expected volatility	34.15%	30.38%	38.51%
Grant date fair value of performance units granted	$ 0.57	$ 0.95	$ 0.85

The risk-free interest rate for the remaining performance period as of the grant date is based on the U.S. Treasury yield curve in effect at the time of the grant. The look-back period reflects the remaining performance period at the grant date. The assumption for the expected volatility of our stock price reflects the average MPC common stock historical volatility.

MPLX Awards

Our wholly-owned subsidiary and the general partner of MPLX, MPLX GP LLC ("MPLX GP"), maintains a unit-based compensation plan for officers, directors and employees (including any other individual who may be considered an "employee" under a Registration Statement on Form S-8 or any successor form) of MPLX GP.

The MPLX 2012 Incentive Compensation Plan ("MPLX Plan") permits various types of equity awards including but not limited to grants of phantom units and performance units. Awards granted under the MPLX Plan will be settled with MPLX units. Compensation expense for these awards were not material to our consolidated financial statements for the years ended December 31, 2016, 2015 and 2014.

24. Leases

Lessee

We lease a wide variety of facilities and equipment under operating leases, including land and building space, office equipment, storage facilities and transportation equipment. Most long-term leases include renewal options and, in certain leases, purchase options. Future minimum commitments as of December 31, 2016, for capital lease obligations and for operating lease obligations having initial or remaining non-cancellable lease terms in excess of one year are as follows:

(In millions)	Capital Lease Obligations	Operating Lease Obligations
2017	$ 50	$ 254
2018	50	211
2019	45	198
2020	49	188
2021	45	170
Later years	206	569
Total minimum lease payments	445	$ 1,590
Less imputed interest costs	126	
Present value of net minimum lease payments	$ 319	

Operating lease rental expense was:

(In millions)	2016	2015	2014
Rental expense	$ 327	$ 331	$ 256

Lessor

MPLX has certain natural gas gathering, transportation and processing agreements in which it is considered to be the lessor under several implicit operating lease arrangements in accordance with US GAAP. MPLX's primary implicit lease operations relate to a natural gas gathering agreement in the Marcellus region for which it earns a fixed-fee for providing gathering services to a single producer using a dedicated gathering system. As the gathering system is expanded, the fixed-fee charged to the producer is adjusted to include the additional gathering assets in the lease. The primary term of the natural gas gathering arrangement expires in 2023 and will continue thereafter on a year to year basis until terminated by either party. Other significant implicit leases relate to a natural gas processing agreement in the Marcellus region and a natural gas processing agreement in the Southern Appalachia region for which MPLX earns minimum monthly fees for providing processing services to a single producer using a dedicated processing plant. The primary term of these natural gas processing agreements expire during 2023 and 2030.

Our revenue from implicit lease arrangements, excluding executory costs, totaled approximately $246 million, $16 million and $0 million in 2016, 2015 and 2014, respectively. The implicit lease arrangements related to the processing facilities contain contingent rental provisions whereby we receive additional fees if the producer customer exceeds the monthly minimum processed volumes. During the year ended December 31, 2016, we received $7 million in contingent lease payments and less than $1 million for the year ended December 31, 2015. The following is a schedule of minimum future rentals on the non-cancellable operating leases as of December 31, 2016:

(In millions)	
2017	$ 197
2018	200
2019	202
2020	201
2021	185
Later years	460
Total minimum lease payments	$ 1,445

The following schedule summarizes our investment in assets held for operating lease by major classes as of December 31, 2016:

(In millions)	
Natural gas gathering and NGL transportation pipelines and facilities	$ 650
Natural gas processing facilities	844
Construction in progress	219
Property, plant and equipment	1,713
Less accumulated depreciation	84
Total property, plant and equipment	$ 1,629

25. Commitments and Contingencies

We are the subject of, or a party to, a number of pending or threatened legal actions, contingencies and commitments involving a variety of matters, including laws and regulations relating to the environment. Some of these matters are discussed below. For matters for which we have not recorded an accrued liability, we are unable to estimate a range of possible loss because the issues involved have not been fully developed through pleadings and discovery. However, the ultimate resolution of some of these contingencies could, individually or in the aggregate, be material.

Environmental matters – We are subject to federal, state, local and foreign laws and regulations relating to the environment. These laws generally provide for control of pollutants released into the environment and require responsible parties to undertake remediation of hazardous waste disposal sites and certain other locations including presently or formerly owned or operated retail marketing sites. Penalties may be imposed for noncompliance.

At December 31, 2016 and 2015, accrued liabilities for remediation totaled $132 million and $163 million. It is not presently possible to estimate the ultimate amount of all remediation costs that might be incurred or the penalties if any that may be imposed. Receivables for recoverable costs from certain states, under programs to assist companies in clean-up efforts related to underground storage tanks at presently or formerly owned or operated retail marketing sites, were $58 million and $70 million at December 31, 2016 and 2015, respectively.

We are involved in a number of environmental enforcement matters arising in the ordinary course of business. While the outcome and impact on us cannot be predicted with certainty, management believes the resolution of these environmental matters will not, individually or collectively, have a material adverse effect on our consolidated results of operations, financial position or cash flows.

MarkWest Environmental Proceeding – In July 2015, representatives from the EPA and the United States Department of Justice conducted a raid on a pipeline launcher/receiver site of MarkWest Liberty Midstream & Resources, L.L.C., a wholly-owned subsidiary of MPLX ("MarkWest Liberty Midstream"), utilized for pipeline maintenance operations in Washington County, Pennsylvania pursuant to a search warrant issued by a magistrate of the United States District Court for the Western District of Pennsylvania. As part of this initiative, the U.S. Attorney's Office for the Western District of Pennsylvania, with the assistance of EPA's Criminal Investigation Division proceeded with an investigation of MarkWest's launcher/receiver, pipeline and compressor station operations. In response to the investigation, MarkWest initiated independent studies which demonstrated that there was no risk to worker safety and no threat of public harm associated with MarkWest's launcher/receiver operations. These findings were supported by a subsequent inspection and review by the Occupational Safety and Health Administration. After providing these studies, and other substantial documentation related to MarkWest's pipeline and compressor stations, and arranging site visits and conducting several meetings with the government's representatives, on September 13, 2016, the U.S. Attorney's Office for the Western District of Pennsylvania rendered a declination decision, dropping its criminal investigation and declining to pursue charges in this matter.

MarkWest Liberty Midstream continues to discuss with the EPA and the State of Pennsylvania civil enforcement allegations associated with permitting or other related regulatory obligations for its launcher/receiver and compressor station facilities in the region. In connection with these discussions, MarkWest Liberty Midstream received an initial proposal from the EPA to settle all civil claims associated with this matter for the combination of a proposed cash penalty of approximately $2.4 million and proposed supplemental environmental projects with an estimated cost of approximately $3.6 million. MarkWest Liberty Midstream will be submitting a response asserting that this action involves novel issues surrounding primarily minor source emissions from facilities that the agencies themselves considered de minimis were not the subject of regulation and consequently that the settlement proposal is excessive. MarkWest will continue to negotiate with the EPA regarding the amount and scope of the proposed settlement.

Other Lawsuits – In May 2015, the Kentucky attorney general filed a lawsuit against our wholly-owned subsidiary, MPC LP, in the United States District Court for the Western District of Kentucky asserting claims under federal and state antitrust statutes, the Kentucky Consumer Protection Act, and state common law. The complaint, as amended in July 2015, alleges that MPC LP used deed restrictions, supply agreements with customers and exchange agreements with competitors to unreasonably restrain trade in areas within Kentucky and seeks declaratory relief, unspecified damages, civil penalties, restitution and disgorgement of profits. At this early stage, the ultimate outcome of this litigation remains uncertain, and neither the likelihood of an unfavorable outcome nor the ultimate liability, if any, can be determined, and we are unable to estimate a reasonably possible loss (or range of loss) for this matter. We intend to vigorously defend ourselves in this matter.

In May 2007, the Kentucky attorney general filed a lawsuit against us and Marathon Oil in state court in Franklin County, Kentucky for alleged violations of Kentucky's emergency pricing and consumer protection laws following Hurricanes Katrina and Rita in 2005. The lawsuit alleges that we overcharged customers by $89 million during September and October 2005. The complaint seeks disgorgement of these sums, as well as penalties, under Kentucky's emergency pricing and consumer protection laws. We are vigorously defending this litigation. We believe that this is the first lawsuit for damages and injunctive relief under the Kentucky emergency pricing laws to progress this far and it contains many novel issues. In May 2011, the Kentucky attorney general amended his complaint to include a request for immediate injunctive relief as well as unspecified damages and penalties related to our wholesale gasoline pricing in April and May 2011 under statewide price controls that were activated by the Kentucky governor on April 26, 2011 and which have since expired. The court denied the attorney general's request for immediate injunctive relief, and the remainder of the 2011 claims likely will be resolved along with those dating from 2005. If the lawsuit is resolved unfavorably in its entirety, it could materially impact our consolidated results of operations, financial position or cash flows. However, management does not believe the ultimate resolution of this litigation will have a material adverse effect.

We are also a party to a number of other lawsuits and other proceedings arising in the ordinary course of business. While the ultimate outcome and impact to us cannot be predicted with certainty, we believe that the resolution of these other lawsuits and proceedings will not have a material adverse effect on our consolidated financial position, results of operations or cash flows.

Guarantees – We have provided certain guarantees, direct and indirect, of the indebtedness of other companies. Under the terms of most of these guarantee arrangements, we would be required to perform should the guaranteed party fail to fulfill its obligations under the specified arrangements. In addition to these financial guarantees, we also have various performance guarantees related to specific agreements.

Guarantees related to indebtedness of equity method investees – We hold interests in an offshore oil port, LOOP, and a crude oil pipeline system, LOCAP. Both LOOP and LOCAP have secured various project financings with throughput and deficiency agreements. Under the agreements, we are required to advance funds if the investees are unable to service their debt. Any such advances are considered prepayments of future transportation charges. The duration of the agreements vary but tend to follow the terms of the underlying debt, which extend through 2037. Our maximum potential undiscounted payments under these agreements for the debt principal totaled $172 million as of December 31, 2016.

We hold an interest in a refined products pipeline through our investment in Centennial, and have guaranteed our portion of the payment of Centennial's principal, interest and prepayment costs, if applicable, under a Master Shelf Agreement, which is scheduled to expire in 2024. The guarantee arose in order for Centennial to obtain adequate financing. Our maximum potential undiscounted payments under this agreement for debt principal totaled $29 million as of December 31, 2016.

In connection with our 50 percent ownership in Crowley Ocean Partners, we have agreed to conditionally guarantee our portion of the obligations of the joint venture and its subsidiaries under a senior secured term loan agreement. The term loan agreement provides for loans of up to $325 million to finance the acquisition of four product tankers. MPC's liability under the guarantee for each vessel is conditioned upon the occurrence of certain events, including if we cease to maintain an investment grade credit rating or the charter for the relevant product tanker ceases to be in effect and is not replaced by a charter with an investment grade company on certain defined commercial terms. As of December 31, 2016, our maximum potential undiscounted payments under this agreement for debt principal totaled $163 million.

In connection with our 50 percent indirect interest in Crowley Blue Water Partners, we have agreed to provide a conditional guarantee of up to 50 percent of its outstanding debt balance in the event there is no charter agreement in place with an investment grade customer for the entity's three vessels as well as other financial support in certain circumstances. The maximum exposure under these arrangements is 50 percent of the amount of the debt, which was $142 million as of December 31, 2016.

Marathon Oil indemnifications – In conjunction with the Spinoff, we have entered into arrangements with Marathon Oil providing indemnities and guarantees with recorded values of $2 million as of December 31, 2016, which consist of unrecognized tax benefits related to MPC, its consolidated subsidiaries and the RM&T Business operations prior to the Spinoff which are not already reflected in the unrecognized tax benefits described in Note 12, and other contingent liabilities Marathon Oil may incur related to taxes. Furthermore, the separation and distribution agreement and other agreements with Marathon Oil to effect the Spinoff provide for cross-indemnities between Marathon Oil and us. In general, Marathon Oil is required to indemnify us for any liabilities relating to Marathon Oil's historical oil and gas exploration and production operations, oil sands mining operations and integrated gas operations, and we are required to indemnify Marathon Oil for any liabilities relating to Marathon Oil's historical refining, marketing and transportation operations. The terms of these indemnifications are indefinite and the amounts are not capped.

Other guarantees – We have entered into other guarantees with maximum potential undiscounted payments totaling $82 million as of December 31, 2016, which consist primarily of a commitment to contribute cash to an equity method investee for certain catastrophic events, up to $50 million per event, in lieu of procuring insurance coverage and leases of assets containing general lease indemnities and guaranteed residual values.

General guarantees associated with dispositions – Over the years, we have sold various assets in the normal course of our business. Certain of the related agreements contain performance and general guarantees, including guarantees regarding inaccuracies in representations, warranties, covenants and agreements, and environmental and general indemnifications that require us to perform upon the occurrence of a triggering event or condition. These guarantees and indemnifications are part of the normal course of selling assets. We are typically not able to calculate the maximum potential amount of future payments that could be made under such contractual provisions because of the variability inherent in the guarantees and indemnities. Most often, the nature of the guarantees and indemnities is such that there is no appropriate method for quantifying the exposure because the underlying triggering event has little or no past experience upon which a reasonable prediction of the outcome can be based.

Contractual commitments and contingencies – At December 31, 2016 and 2015, our contractual commitments to acquire property, plant and equipment and advance funds to equity method investees totaled $899 million and $1.6 billion. The contractual commitments at December 31, 2016 includes $131 million of contingent consideration associated with the acquisition of the Galveston Bay Refinery and Related Assets. The contractual commitments at December 31, 2015 included the $331 million contingent consideration associated with the acquisition of the Galveston Bay Refinery and Related Assets, $630 million for contributions to North Dakota Pipeline and $69 million for contributions to Crowley Ocean Partners. See Note 17 for additional information on the contingent consideration.

Certain natural gas processing and gathering arrangements require us to construct natural gas processing plants, natural gas gathering pipelines and NGL pipelines and contain certain fees and charges if specified construction milestones are not achieved for reasons other than force majeure. In certain cases, certain producer customers may have the right to cancel the processing arrangements if there are significant delays that are not due to force majeure. As of December 31, 2016, management does not believe there are any indications that we will not be able to meet the construction milestones, that force majeure does not apply, or that such fees and charges will otherwise be triggered.

26. Subsequent Events

On February 6, 2017, MPLX announced that its wholly-owned subsidiary, MarkWest, and Antero Midstream Partners L.P. ("Antero Midstream") formed a strategic joint venture, Sherwood Midstream LLC, to support the development of Antero Resources Corporation's extensive Marcellus Shale acreage in the prolific rich-gas corridor of West Virginia. In connection with this transaction, MarkWest contributed approximately $134 million of assets currently under construction at the Sherwood Complex and Antero Midstream made an initial capital contribution of approximately $154 million.

On February 10, 2017, MPLX completed a public offering of $1.25 billion aggregate principal amount of 4.125% unsecured senior notes due March 2027 and $1.0 billion aggregate principal amount of 5.200% unsecured senior notes due March 2047. MPLX intends to use the net proceeds from this offering for general partnership purposes, which may include, from time to time, acquisitions (including the previously announced planned dropdown of assets from MPC) and capital expenditures.

On February 13, 2017, MPLX announced that it had entered into an asset purchase agreement with Enbridge Pipelines (Ozark) LLC ("Enbridge Ozark"), under which an affiliate of Pipe Line Holdings has agreed to purchase the Ozark pipeline for approximately $220 million from Enbridge Ozark. The Ozark pipeline is a 433-mile, 22-inch crude oil pipeline originating in Cushing, Oklahoma, and terminating in Wood River, Illinois, capable of transporting approximately 230 mbpd. The purchase transaction is expected to close in the first quarter of 2017, subject to customary closing conditions, including regulatory approvals.

Selected Quarterly Financial Data (Unaudited)

	2016				2015			
(In millions, except per share data)	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.	1st Qtr.	2nd Qtr.	3rd Qtr.	4th Qtr.
Revenues	$12,755	$16,811	$16,618	$17,155	$17,191	$20,537	$18,716	$15,607
Income from operations	75	1,315	435	553	1,470	1,335	1,549	338
Net income (loss)	(78)	783	219	289	903	839	958	168
Net income attributable to MPC	1	801	145	227	891	826	948	187
Net income attributable to MPC per share:[a]								
Basic	$ 0.003	$ 1.51	$ 0.28	$ 0.43	$ 1.63	$ 1.52	$ 1.77	$ 0.35
Diluted	0.003	1.51	0.27	0.43	1.62	1.51	1.76	0.35
Dividends paid per share	0.32	0.32	0.36	0.36	0.25	0.25	0.32	0.32

(a) We completed a two-for-one stock split in June 2015. All historical per share data has been retroactively restated on a post-split basis.

Supplementary Statistics (Unaudited)

(In millions)	2016	2015	2014
Income from Operations by segment			
Refining & Marketing[(a)]	$ 1,543	$ 4,086	$ 3,538
Speedway[(a)]	734	673	544
Midstream[(b)]	871	380	342
Items not allocated to segments:			
Corporate and other unallocated items[(b)]	(277)	(299)	(277)
Pension settlement expenses	(7)	(4)	(96)
Impairment[(c)]	(486)	(144)	–
Income from operations	$ 2,378	$ 4,692	$ 4,051
Capital Expenditures and Investments[(d)(e)]			
Refining & Marketing	$ 1,101	$ 1,045	$ 1,043
Speedway	303	501	2,981
Midstream	1,521	14,545	604
Corporate and Other[(f)]	144	192	110
Total	$ 3,069	$ 16,283	$ 4,738

(a) In 2016, the Refining & Marketing and Speedway segments include an inventory LCM benefit of $345 million and $25 million, respectively. In 2015, the Refining & Marketing and Speedway segments include an inventory LCM charge of $345 million and $25 million, respectively.

(b) Included in the Midstream segment for 2016, 2015 and 2014 are $11 million, $20 million and $19 million of corporate overhead expenses attributable to MPLX. The remaining corporate overhead expenses are not currently allocated to other segments, but instead reported in corporate and other unallocated items.

(c) 2016 relates to impairments of goodwill and equity method investments. 2015 relates to the cancellation of the Residual Oil Upgrader Expansion project. See Notes 15, 16 and 17 to the audited consolidated financial statements.

(d) Capital expenditures include changes in capital accruals.

(e) Includes $13.85 billion in 2015 for the MarkWest Merger and $2.71 billion in 2014 for the acquisition of Hess' Retail Operations and Related Assets. See Note 5.

(f) Includes capitalized interest of $63 million, $37 million and $27 million for 2016, 2015 and 2014, respectively.

Supplementary Statistics (Unaudited)

	2016	2015	2014
MPC Consolidated Refined Product Sales Volumes (mbpd)[(a)]	2,269	2,301	2,138
Refining & Marketing Operating Statistics			
Refining & Marketing refined product sales volume (mbpd)[(b)]	2,259	2,289	2,125
Refining & Marketing gross margin (dollars per barrel)[(c)(d)]	$ 11.26	$ 15.25	$ 15.05
Crude oil capacity utilization percent[(e)]	95	99	95
Refinery throughputs (mbpd):[(f)]			
Crude oil refined	1,699	1,711	1,622
Other charge and blendstocks	151	177	184
Total	1,850	1,888	1,806
Sour crude oil throughput percent	60	55	52
WTI-priced crude oil throughput percent	19	20	19
Refined product yields (mbpd):[(f)]			
Gasoline	900	913	869
Distillates	617	603	580
Propane	35	36	35
Feedstocks and special products	241	281	276
Heavy fuel oil	32	31	25
Asphalt	58	55	54
Total	1,883	1,919	1,839
Refinery direct operating costs (dollars per barrel):[(g)]			
Planned turnaround and major maintenance	$ 1.83	$ 1.13	$ 1.80
Depreciation and amortization	1.47	1.39	1.41
Other manufacturing[(h)]	4.09	4.15	4.86
Total	$ 7.39	$ 6.67	$ 8.07
Refining & Marketing Operating Statistics By Region – Gulf Coast			
Refinery throughputs (mbpd):[(i)]			
Crude oil refined	1,039	1,060	991
Other charge and blendstocks	195	184	182
Total	1,234	1,244	1,173
Sour crude oil throughput percent	73	68	64
WTI-priced crude oil throughput percent	8	6	3
Refined product yields (mbpd):[(i)]			
Gasoline	514	534	508
Distillates	399	392	368
Propane	26	26	23
Feedstocks and special products	286	286	274
Heavy fuel oil	21	15	13
Asphalt	15	16	13
Total	1,261	1,269	1,199
Refinery direct operating costs (dollars per barrel):[(g)]			
Planned turnaround and major maintenance	$ 2.09	$ 0.81	$ 1.82
Depreciation and amortization	1.14	1.09	1.15
Other manufacturing[(h)]	3.70	3.88	4.73
Total	$ 6.93	$ 5.78	$ 7.70

Supplementary Statistics (Unaudited)

	2016	2015	2014
Refining & Marketing Operating Statistics By Region – Midwest			
Refinery throughputs (mbpd):[i]			
Crude oil refined	660	651	631
Other charge and blendstocks	39	39	45
Total	699	690	676
Sour crude oil throughput percent	40	34	33
WTI-priced crude oil throughput percent	38	43	44
Refined product yields (mbpd):[i]			
Gasoline	386	379	361
Distillates	218	211	212
Propane	11	12	13
Feedstocks and special products	35	38	43
Heavy fuel oil	12	17	13
Asphalt	43	39	41
Total	705	696	683
Refinery direct operating costs (dollars per barrel):[g]			
Planned turnaround and major maintenance	$ 1.15	$ 1.64	$ 1.66
Depreciation and amortization	1.88	1.83	1.78
Other manufacturing[h]	4.29	4.36	4.76
Total	$ 7.32	$ 7.83	$ 8.20
Speedway Operating Statistics[j]			
Convenience stores at period-end[k]	2,733	2,766	2,746
Gasoline and distillate sales (millions of gallons)	6,094	6,038	3,942
Gasoline & distillate gross margin (dollars per gallon)[d][l]	$ 0.1656	$ 0.1823	$ 0.1775
Merchandise sales (in millions)	$ 5,007	$ 4,879	$ 3,611
Merchandise gross margin (in millions)	$ 1,435	$ 1,368	$ 975
Merchandise gross margin percent	28.7%	28.0%	27.0%
Same store gasoline sales volume (period over period)	(0.4)%	(0.3)%	(0.7)%
Same store merchandise sales (period over period)[m]	3.2%	4.1%	5.0%
Midstream Operating Statistics			
Crude oil and refined product pipeline throughputs (mbpd)[n]	2,311	2,191	2,119
Gathering system throughput (MMcf/d)[o]	3,275	3,075	
Natural gas processed (MMcf/d)[o]	5,761	5,468	
C2 (ethane) + NGLs (natural gas liquids) fractionated (mbpd)[o]	335	307	

(a) Total average daily volumes of refined product sales to wholesale, branded and retail customers.

(b) Includes intersegment sales.

(c) Sales revenue less cost of refinery inputs and purchased products, divided by total refinery throughputs.

(d) Excludes the lower of cost or market adjustment.

(e) Based on calendar day capacity, which is an annual average that includes downtime for planned maintenance and other normal operating activities.

(f) Excludes inter-refinery volumes of 83 mbpd, 46 mbpd and 43 mbpd for 2016, 2015 and 2014, respectively.

(g) Per barrel of total refinery throughputs.

(h) Includes utilities, labor, routine maintenance and other operating costs.

(i) Includes inter-refinery transfer volumes.

(j) Includes the impact of Hess' Retail Operations and Related Assets from the September 30, 2014 acquisition date.

(k) Decrease in 2016 was primarily due to the contribution of 41 travel centers to the Pilot joint venture.

(l) The price paid by consumers less the cost of refined products, including transportation, consumer excise taxes and bankcard processing fees, divided by gasoline and distillate sales volume.

(m) Excludes cigarettes.

(n) On owned common-carrier pipelines, excluding equity method investments.

(o) Includes the results of the MarkWest assets beginning on the Dec. 4, 2015 acquisition date. Includes amounts related to unconsolidated equity method investments on a 100% basis.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

An evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13(a)-15(e) and 15(d)-15(e) under the Securities Exchange Act of 1934, as amended) was carried out under the supervision and with the participation of our management, including our chief executive officer and chief financial officer. Based upon that evaluation, the chief executive officer and chief financial officer concluded that the design and operation of these disclosure controls and procedures were effective as of December 31, 2016, the end of the period covered by this Annual Report on Form 10-K.

Internal Control over Financial Reporting and Changes in Internal Control over Financial Reporting

During the fourth quarter ended December 31, 2016, we completed the integration of MarkWest into our internal control environment. See Item 8. Financial Statements and Supplementary Data – Management's Report on Internal Control over Financial Reporting and – Report of Independent Registered Public Accounting Firm, which reports are incorporated herein by reference.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information concerning our directors required by this item is incorporated by reference to the material appearing under the sub-heading “Proposal No. 1 – Election of Class III Directors” located under the heading “Proposals of the Board” in our Proxy Statement for the 2017 Annual Meeting of Shareholders. Information concerning our executive officers is included in Part I, Item 1 of this Annual Report on Form 10-K.

Our board of directors has established the Audit Committee and determined our “Audit Committee Financial Expert.” The related information required by this item is incorporated by reference to the material appearing under the sub-headings “The Board of Directors” and “Audit Committee Financial Expert” located under the heading “The Board of Directors and Corporate Governance” in our Proxy Statement for the 2017 Annual Meeting of Shareholders.

We have adopted a Code of Ethics for Senior Financial Officers, which applies to our Chief Executive Officer, Chief Financial Officer, Vice President and Controller, Treasurer and other persons performing similar functions. It is available on our website at http://ir.marathonpetroleum.com by selecting “Corporate Governance” and clicking on “Code of Ethics for Senior Financial Officers.”

Section 16(a) Beneficial Ownership Reporting Compliance

Information regarding compliance with Section 16(a) of the Securities Exchange Act of 1934 is set forth under the caption “Section 16(a) Beneficial Ownership Reporting Compliance” in our Proxy Statement for the 2017 Annual Meeting of Shareholders, which is incorporated herein by reference.

Item 11. Executive Compensation

Information required by this item is incorporated by reference to the material appearing under the headings “Compensation Discussion and Analysis,” “Compensation-Based Risk Assessment” and “Executive Compensation;” under the sub-headings “Compensation Committee” and “Compensation Committee Interlocks and Insider Participation” located under the heading “The Board of Directors and Corporate Governance;” and under the headings “Compensation of Directors” and “Compensation Committee Report” in our Proxy Statement for the 2017 Annual Meeting of Shareholders.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information concerning security ownership of certain beneficial owners and management required by this item is incorporated by reference to the material appearing under the headings "Security Ownership of Certain Beneficial Owners" and "Security Ownership of Directors and Executive Officers" in our Proxy Statement for the 2017 Annual Meeting of Shareholders.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information as of December 31, 2016 with respect to shares of our common stock that may be issued under the MPC 2012 Plan and the MPC 2011 Plan:

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights[a]	Weighted-average exercise price of outstanding options, warrants and rights[b]	Number of securities remaining available for future issuance under equity compensation plans[c]
Equity compensation plans approved by stockholders	10,141,025	$ 28.93	43,002,076
Equity compensation plan not approved by stockholders	-	-	-
Total	10,141,025	N/A	43,002,076

[a] Includes the following:

1) 9,531,440 stock options granted pursuant to the MPC 2012 Plan and the MPC 2011 Plan and not forfeited, cancelled or expired as of December 31, 2016.
2) 361,117 restricted stock units granted pursuant to the MPC 2012 Plan and the MPC 2011 Plan for shares unissued and not forfeited, cancelled or expired as of December 31, 2016.
3) 248,468 shares as the maximum potential number of shares that could be issued in settlement of performance units outstanding as of December 31, 2016 pursuant to the MPC 2012 Plan, based on the closing price of our common stock on December 31, 2016 of $50.35 per share. The number of shares reported for this award vehicle may overstate dilution. See Note 23 for more information on performance unit awards granted under the MPC 2012 Plan.

In addition to the awards reported above, 1,250,343 shares of restricted stock have been issued pursuant to the MPC 2012 Plan and were outstanding as of December 31, 2016.

[b] Restricted stock, restricted stock units and performance units are not taken into account in the weighted-average exercise price as such awards have no exercise price.

[c] Reflects the shares available for issuance pursuant to the MPC 2012 Plan. All granting authority under the MPC 2011 Plan was revoked following the approval of the MPC 2012 Plan by shareholders on April 25, 2012. No more than 17,199,310 of the shares reported in this column may be issued for awards other than stock options or stock appreciation rights. The number of shares reported in this column assumes 248,468 as the maximum potential number of shares that could be issued pursuant to the MPC 2012 Plan in settlement of performance units outstanding as of December 31, 2016, based on the closing price of our common stock on December 31, 2016, of $50.35 per share. The number of shares assumed for this award vehicle may understate the number of shares available for issuance pursuant to the MPC 2012 Plan. See Note 23 for more information on performance unit awards granted pursuant to the MPC 2012 Plan. Shares related to grants made pursuant to the MPC 2012 Plan that are forfeited, cancelled or expire unexercised become immediately available for issuance under the MPC 2012 Plan.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information required by this item is incorporated by reference to the material appearing under the heading "Certain Relationships and Related Person Transactions," and under the sub-heading "Board and Committee Independence" under the heading "The Board of Directors and Corporate Governance" in our Proxy Statement for the 2017 Annual Meeting of Shareholders.

Item 14. Principal Accountant Fees and Services

Information required by this item is incorporated by reference to the material appearing under the heading "Independent Registered Public Accounting Firm's Fees, Services and Independence" in our Proxy Statement for the 2017 Annual Meeting of Shareholders.

PART IV

Item 15. Exhibits and Financial Statement Schedules

A. Documents Filed as Part of the Report

1. Financial Statements (see Part II, Item 8. of this Annual Report on Form 10-K regarding financial statements)
2. Financial Statement Schedules

   Financial statement schedules required under SEC rules but not included in this Annual Report on Form 10-K are omitted because they are not applicable or the required information is contained in the consolidated financial statements or notes thereto.

3. Exhibits:

		Incorporated by Reference					
Exhibit Number	Exhibit Description	Form	Exhibit	Filing Date	SEC File No.	Filed Herewith	Furnished Herewith
2	**Plan of Acquisition, Reorganization, Arrangement, Liquidation or Succession**						
2.1 †	Separation and Distribution Agreement, dated as of May 25, 2011, among Marathon Oil Corporation, Marathon Oil Company and Marathon Petroleum Corporation	10	2.1	5/26/2011	001-35054		
2.2 †	Purchase and Sale Agreement, dated as of October 7, 2012, by and among BP Products North America Inc. and BP Pipelines (North America) Inc., as the Sellers and Marathon Petroleum Company LP, as the Buyer	8-K	2.1	10/9/2012	001-35054		
2.3 †	Purchase Agreement by and between Speedway LLC and Hess Corporation, dated as of May 21, 2014	8-K	2.1	5/27/2014	001-35054		
2.4 †	Amendment No. 1 effective as of September 30, 2014, to the Purchase Agreement by and between Speedway LLC and Hess Corporation, dated as of May 21, 2014	8-K	2.2	10/6/2014	001-35054		
2.5 †	Agreement and Plan of Merger, dated as of July 11, 2015, by and among MPLX LP, Sapphire Holdco LLC, MPLX GP LLC, MarkWest Energy Partners, L.P. and, for certain limited purposes set forth therein, Marathon Petroleum Corporation.	8-K	2.1	7/16/2015	001-35054		
2.6	Amendment to Agreement and Plan of Merger, dated as of November 10, 2015, by and among MPLX LP, Sapphire Holdco LLC, MPLX GP LLC, MarkWest Energy Partners, L.P. and Marathon Petroleum Corporation.	8-K	2.1	11/12/2015	001-35054		
2.7	Amendment Number 2 to Agreement and Plan of Merger, dated as of November 16, 2015, by and among MPLX LP, Sapphire Holdco LLC, MPLX GP LLC, MarkWest Energy Partners, L.P. and Marathon Petroleum Corporation.	8-K	2.1	11/17/2015	001-35054		
3	**Articles of Incorporation and Bylaws**						
3.1	Restated Certificate of Incorporation of Marathon Petroleum Corporation	8-K	3.1	6/22/2011	001-35054		
3.2	Amended and Restated Bylaws of Marathon Petroleum Corporation					X	
4	**Instruments Defining the Rights of Security Holders, Including Indentures**						

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
4.1	Indenture dated as of February 1, 2011 between Marathon Petroleum Corporation and The Bank of New York Mellon Trust Company, N.A., as Trustee	10	4.1	5/26/2011	001-35054		
4.2	Form of the terms of the 3 1/2% Senior Notes due 2016, 5 1/8% Senior Notes due 2021 and 6 1/2% Senior Notes due 2041 of Marathon Petroleum Corporation (including Form of Notes)	10	4.2	5/26/2011	001-35054		
4.3	First Supplemental Indenture, dated as of September 5, 2014, by and between Marathon Petroleum Corporation and The Bank of New York Mellon Trust Company, N.A., as trustee (including Form of Notes)	10-Q	4.1	11/3/2014	001-35054		
4.4	Second Supplemental Indenture, dated as of December 14, 2015, by and between Marathon Petroleum Corporation and the Bank of New York Mellon Trust Company, N.A., as trustee (including Form of Notes)	8-K	4.1	12/14/2015	001-35054		
4.5	Indenture, dated February 12, 2015, between MPLX LP and The Bank of New York Mellon Trust Company, N.A., as Trustee	8-K	4.1	2/12/2015	001-35714		
4.6	First Supplemental Indenture, dated February 12, 2015, between MPLX LP and The Bank of New York Mellon Trust Company, N.A., as Trustee (including Form of Notes)	8-K	4.2	2/12/2015	001-35714		
4.7	Second Supplemental Indenture, dated as of December 22, 2015, by and between MPLX LP and the Bank of New York Mellon Trust Company, N.A. (including Form of Note)	8-K	4.2	12/22/2015	001-35714		
4.8	Third Supplemental Indenture, dated as of December 22, 2015, by and between MPLX LP and the Bank of New York Mellon Trust Company, N.A. (including Form of Note)	8-K	4.3	12/22/2015	001-35714		
4.9	Fourth Supplemental Indenture, dated as of December 22, 2015, by and between MPLX LP and the Bank of New York Mellon Trust Company, N.A. (including Form of Note)	8-K	4.4	12/22/2015	001-35714		
4.10	Fifth Supplemental Indenture, dated as of December 22, 2015, by and between MPLX LP and the Bank of New York Mellon Trust Company, N.A. (including Form of Note)	8-K	4.5	12/22/2015	001-35714		
4.11	Registration Rights Agreement dated as of December 22, 2015 by and among MPLX LP, MPLX GP LLC, and each of Citigroup Global Markets Inc., J.P. Morgan Securities LLC and Merrill Lynch, Pierce, Fenner & Smith Incorporated	8-K	4.1	12/22/2015	001-35714		
10	**Material Contracts**						
10.1	Tax Sharing Agreement dated as of May 25, 2011 by and among Marathon Oil Corporation, Marathon Petroleum Corporation and MPC Investment LLC	10	10.1	5/26/2011	001-35054		
10.2	Employee Matters Agreement dated as of May 25, 2011 by and between Marathon Oil Corporation and Marathon Petroleum Corporation	10	10.2	5/26/2011	001-35054		
10.3	Amendment to Employee Matters Agreement, dated as of June 30, 2011 by and between Marathon Oil Corporation and Marathon Petroleum Corporation	8-K	10.1	7/1/2011	001-35054		
10.4	Receivables Purchase Agreement, dated as of December 18, 2013, by and among MPC Trade Receivables Company, LLC, Marathon Petroleum Company LP, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, as administrative agent and sole lead arranger, certain committed purchasers and conduit purchasers that are parties thereto from time to time and certain other parties thereto from time to time as managing agents and letter of credit issuers.	8-K	10.1	12/23/2013	001-35054		

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.5	Second Amended and Restated Receivables Sale Agreement, dated as of December 18, 2013, by and between Marathon Petroleum Company LP and MPC Trade Receivables Company LLC	8-K	10.2	12/23/2013	001-35054		
10.6	$2,500,000,000 Four-Year Credit Agreement, dated July 20, 2016, by and among Marathon Petroleum Corporation, as borrower, JPMorgan Chase Bank, N.A., as administrative agent, each of JPMorgan Chase Bank, N.A., Citigroup Global Markets Inc., Barclays Bank PLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Mizuho Bank, Ltd., The Bank of Tokyo-Mitsubishi UFJ, Ltd., UBS Securities LLC, and Wells Fargo Securities, LLC, as joint lead arrangers and joint bookrunners, Citigroup Global Markets Inc., as syndication agent, each of Bank of America, N.A., Barclays Bank PLC, Mizuho Bank, Ltd., The Bank of Tokyo-Mitsubishi UFJ, Ltd., UBS Securities LLC, and Wells Fargo Bank, National Association, as documentation agents, and several other commercial lending institutions that are party thereto.	8-K	10.1	7/26/2016	001-35054		
10.7	$1,000,000,000 364-Day Revolving Credit Agreement, dated July 20, 2016, by and among Marathon Petroleum Corporation, as borrower, JPMorgan Chase Bank, N.A., as administrative agent, each of JPMorgan Chase Bank, N.A., Citigroup Global Markets Inc., Barclays Bank PLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Mizuho Bank, Ltd., The Bank of Tokyo-Mitsubishi UFJ, Ltd., UBS Securities LLC, and Wells Fargo Securities, LLC, as joint lead arrangers and joint bookrunners, Citigroup Global Markets Inc., as syndication agent, each of Bank of America, N.A., Barclays Bank PLC, Mizuho Bank, Ltd., The Bank of Tokyo-Mitsubishi UFJ, Ltd., UBS Securities LLC, and Wells Fargo Bank, National Association, as documentation agents, and several other commercial lending institutions that are party thereto.	8-K	10.2	7/26/2016	001-35054		
10.8	Credit Agreement, dated as of November 20, 2014, among MPLX LP, as borrower, Citibank, N.A., as administrative agent, each of Citigroup Global Markets Inc., Wells Fargo Securities, LLC, Barclays Bank PLC, J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporate and RBS Securities Inc., as joint lead arrangers and joint bookrunners, Wells Fargo Bank, N.A., as syndication agent, and each of Bank of America, N.A., Barclays Bank PLC, JPMorgan Chase Bank, N.A., and The Royal Bank of Scotland PLC, as documentation agents, and the other lenders and issuing banks that are parties thereto.	8-K	10.1	11/26/2014	001-35054		
10.9	Contribution, Conveyance and Assumption Agreement, dated as of October 31, 2012, among MPLX LP, MPLX GP LLC, MPLX Operations LLC, MPC Investment LLC, MPLX Logistics Holdings LLC, Marathon Pipe Line LLC, MPL Investment LLC, MPLX Pipe Line Holdings LP and Ohio River Pipe Line LLC.	8-K	10.1	11/6/2012	001-35054		
10.10	Omnibus Agreement, dated as of October 31, 2012, among Marathon Petroleum Corporation, Marathon Petroleum Company LP, MPL Investment LLC, MPLX Operations LLC, MPLX Terminal and Storage LLC, MPLX Pipe Line Holdings LP, Marathon Pipe Line LLC, Ohio River Pipe Line LLC, MPLX LP and MPLX GP LLC.	8-K	10.2	11/6/2012	001-35054		
10.11*	Marathon Petroleum Corporation Second Amended and Restated 2011 Incentive Compensation Plan	S-3	4.3	12/7/2011	333-175286		

Exhibit Number	Exhibit Description	Incorporated by Reference Form	Exhibit	Filing Date	SEC File No.	Filed Herewith	Furnished Herewith
10.12*	Marathon Petroleum Corporation Policy for Recoupment of Annual Cash Bonus Amounts	10-K	10.10	2/29/2012	001-35054		
10.13*	Marathon Petroleum Corporation Deferred Compensation Plan for Non-Employee Directors	10-K	10.13	2/28/2013	001-35054		
10.14*	Marathon Petroleum Amended and Restated Excess Benefit Plan					X	
10.15*	Marathon Petroleum Amended and Restated Deferred Compensation Plan	10-K	10.13	2/29/2012	001-35054		
10.16*	Marathon Petroleum Corporation Executive Tax, Estate, and Financial Planning Program	10-K	10.14	2/29/2012	001-35054		
10.17*	Speedway Excess Benefit Plan	10-K	10.15	2/29/2012	001-35054		
10.18*	Speedway Deferred Compensation Plan	10-K	10.16	2/29/2012	001-35054		
10.19*	Form of Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan – Section 16 Officer Restricted Stock Award Agreement (3 year pro rata vesting)	8-K	10.4	7/7/2011	001-35054		
10.20*	Form of Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan – Section 16 Officer Restricted Stock Award Agreement (3 year cliff vesting)	8-K	10.5	7/7/2011	001-35054		
10.21*	Form of Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan Nonqualified Stock Option Award Agreement – Section 16 Officer	8-K	10.6	7/7/2011	001-35054		
10.22*	Form of Marathon Petroleum Corporation 2011 Incentive Compensation Plan Supplemental Restricted Stock Award Agreement – Section 16 Officer	8-K	10.1	12/7/2011	001-35054		
10.23*	Form of Marathon Petroleum Corporation 2011 Incentive Compensation Plan Supplemental Nonqualified Stock Option Award Agreement – Section 16 Officer	8-K	10.2	12/7/2011	001-35054		
10.24*	Form of Marathon Petroleum Corporation 2011 Incentive Compensation Plan Supplemental Restricted Stock Unit Award Agreement – Non-Employee Director	10-K	10.22	2/29/2012	001-35054		
10.25*	Form of Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan – Performance Unit Award Agreement	10-K	10.23	2/29/2012	001-35054		
10.26*	Marathon Petroleum Corporation Amended and Restated Executive Change in Control Severance Benefits Plan	10-K	10.26	2/28/2013	001-35054		
10.27 * `	Form of Marathon Petroleum Corporation Performance Unit Award Agreement – 2012-2014 Performance Cycle	10-Q	10.3	5/9/2012	001-35054		
10.28*	Form of Marathon Petroleum Corporation Restricted Stock Award Agreement – Officer	10-Q	10.4	5/9/2012	001-35054		
10.29*	Form of Marathon Petroleum Corporation Nonqualified Stock Option Award Agreement – Officer	10-Q	10.5	5/9/2012	001-35054		
10.30*	Marathon Petroleum Corporation 2012 Incentive Compensation Plan	S-8	4.3	4/27/2012	333-181007		
10.31*	Marathon Petroleum Annual Cash Bonus Program					X	
10.32*	MPC Non-Employee Director Phantom Unit Award Policy	10-K	10.32	2/28/2013	001-35054		
10.33*	Form of Marathon Petroleum Corporation Performance Unit Award Agreement – 2013-2015 Performance Cycle	10-Q	10.1	5/9/2013	001-35054		

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.34*	Form of Marathon Petroleum Corporation Restricted Stock Award Agreement – Officer	10-Q	10.2	5/9/2013	001-35054		
10.35*	Form of Marathon Petroleum Corporation Nonqualified Stock Option Award Agreement – Officer	10-Q	10.3	5/9/2013	001-35054		
10.36*	MPLX LP – Form of MPC Officer Phantom Unit Award Agreement	10-Q	10.4	5/9/2013	001-35054		
10.37*	MPLX LP – Form of MPC Officer Performance Unit Award Agreement – 2013-2015 Performance Cycle	10-Q	10.5	5/9/2013	001-35054		
10.38*	Amendment to Certain Outstanding MPC Restricted Stock Award Agreements and Performance Unit Award Agreements of Garry L. Peiffer	10-K	10.38	2/28/2014	001-35054		
10.39*	Form of Marathon Petroleum Corporation Performance Unit Award Agreement – 2014-2016 Performance Cycle	10-Q	10.1	5/5/2014	001-35054		
10.40	Term Loan Agreement, dated August 26, 2014, by and among Marathon Petroleum Corporation, as borrower, The Royal Bank of Scotland PLC, as administrative agent, each of RBS Securities Inc., The Bank of Tokyo-Mitsubishi UFJ, Ltd. Barclays Bank PLC, Citigroup Global Markets Inc., and Morgan Stanley Senior Funding, Inc., as joint lead arrangers and joint bookrunners. The Bank of Tokyo-Mitsubishi UFJ, Ltd., as syndication agent, each of Barclays Bank PLC, Citigroup Global Markets Inc. and Morgan Stanley Senior Funding, Inc., as documentation agents, and several other commercial lending institutions that are parties thereto	8-K	10.1	8/29/2014	001-35054		
10.41*	First Amendment to the Marathon Petroleum Corporation Amended and Restated 2011 Incentive Compensation Plan	10-Q	10.1	8/3/2015	001-35054		
10.42*	First Amendment to the Marathon Petroleum Corporation 2012 Incentive Compensation Plan	10-Q	10.2	8/3/2015	001-35054		
10.43	Amendment Agreement, dated as of October 27, 2015, to Credit Agreement, dated November 20, 2014 by and among MPLX LP, Citibank, N.A., Wells Fargo Bank, National Association, and the other institutions named on the signature pages thereto.	8-K	10.1	11/2/2015	001-35054		
10.44*	Retention Agreement, by and between Marathon Petroleum Company LP and Randy S. Nickerson, dated November 13, 2015	10-K	10.44	2/26/2016	001-35054		
10.45*	Marathon Petroleum Thrift Plan					X	
10.46	Loan Agreement, by and between MPLX LP and MPC Investment LLC, dated December 4, 2015	8-K	10.1	12/10/2015	001-35054		
10.47	First Amendment to Receivables Purchase Agreement, dated July 20, 2016, by and among MPC Trade Receivables Company LLC, Marathon Petroleum Company LP, The Bank of Tokyo-Mitsubishi UFJ., Ltd., New York Branch, as administrative agent and sole lead arranger, certain committed purchasers and conduit purchasers that are parties thereto from time to time and certain other parties thereto from time to time as managing agents and letter of credit issuers.	8-K	10.3	7/26/2016	001-35054		
10.48	Form of Marathon Petroleum Corporation Performance Unit Award Agreement	10-Q	10.1	5/2/2016	001-35054		
10.49	Form of Marathon Petroleum Corporation Restricted Stock Award Agreement – Officer	10-Q	10.2	5/2/2016	001-35054		

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith	Furnished Herewith
		Form	Exhibit	Filing Date	SEC File No.		
10.50	Form of Marathon Petroleum Corporation Nonqualified Stock Option Award Agreement – Officer	10-Q	10.3	5/2/2016	001-35054		
10.51	Form of MPLX LP Performance Unit Award Agreement – Marathon Petroleum Corporation Officer	10-Q	10.4	5/2/2016	001-35054		
10.52	Form of MPLX LP Phantom Unit Award Agreement – Marathon Petroleum Corporation Officer	10-Q	10.5	5/2/2016	001-35054		
12.1	Computation of Ratio of Earnings to Fixed Charges					X	
14.1	Code of Ethics for Senior Financial Officers					X	
21.1	List of Subsidiaries					X	
23.1	Consent of Independent Registered Public Accounting Firm					X	
24.1	Power of Attorney of Directors and Officers of Marathon Petroleum Corporation					X	
31.1	Certification of Chief Executive Officer pursuant to Rule 13(a)-14 and 15(d)-14 under the Securities Exchange Act of 1934.					X	
31.2	Certification of Chief Financial Officer pursuant to Rule 13(a)-14 and 15(d)-14 under the Securities Exchange Act of 1934.					X	
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350.						X
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350.						X
101.INS	XBRL Instance Document.					X	
101.SCH	XBRL Taxonomy Extension Schema.					X	
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.					X	
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.					X	
101.DEF	XBRL Taxonomy Extension Definition Linkbase.					X	
101.LAB	XBRL Taxonomy Extension Label Linkbase.					X	

† The exhibits and schedules have been omitted pursuant to Item 601(b)(2) of Regulation S-K and will be provided to the Securities and Exchange Commission upon request.

* Indicates management contract or compensatory plan, contract or arrangement in which one or more directors or executive officers of the Registrant may be participants.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

February 24, 2017

MARATHON PETROLEUM CORPORATION

By: /s/ John J. Quaid

John J. Quaid
Vice President and Controller

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on February 24, 2017 on behalf of the registrant and in the capacities indicated.

Signature	Title
/s/ Gary R. Heminger Gary R. Heminger	Chairman of the Board, President and Chief Executive Officer (principal executive officer)
/s/ Timothy T. Griffith Timothy T. Griffith	Senior Vice President and Chief Financial Officer (principal financial officer)
/s/ John J. Quaid John J. Quaid	Vice President and Controller (principal accounting officer)
* Abdulaziz F. Alkhayyal	Director
* Evan Bayh	Director
* Charles E. Bunch	Director
* David A. Daberko	Director
* Steven A. Davis	Director
* Donna A. James	Director
* James E. Rohr	Director
* Frank M. Semple	Director

Signature	Title
* John W. Snow	Director
* J. Michael Stice	Director
* John P. Surma	Director

* The undersigned, by signing his name hereto, does sign and execute this report pursuant to the Power of Attorney executed by the above-named directors and officers of the registrant, which is being filed herewith on behalf of such directors and officers.

By: /s/ Gary R. Heminger February 24, 2017

Gary R. Heminger
Attorney-in-Fact

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CORPORATE INFORMATION

Corporate Headquarters
539 South Main St.
Findlay, OH 45840

Marathon Petroleum Corporation Website
www.marathonpetroleum.com

Investor Relations Office
539 South Main St.
Findlay, OH 45840
MPCInvestorRelations@marathonpetroleum.com

Lisa Wilson, Director
Investor Relations
(419) 421-2071

Denice Myers, Manager
Investor Relations
(419) 421-2965

Doug Wendt, Manager
Investor Relations
(419) 421-2423

Notice of Annual Meeting
The 2017 Annual Meeting of Shareholders will be held in Findlay, Ohio, on April 26, 2017.

Independent Accountants
PricewaterhouseCoopers LLP
406 Washington Street, Suite 200
Toledo, OH 43604

Stock Exchange Listing
New York Stock Exchange

Common Stock Symbol
MPC

Principal Stock Transfer Agent
Computershare
Shareholder correspondence should be mailed to:
P.O. Box 30170
College Station, TX 77842-3170
Overnight correspondence should be mailed to:
211 Quality Circle, Suite 210
College Station, TX 77845
(866) 820-7494 (toll free – U.S., Canada, Puerto Rico)
(781) 575-2176 (other non-U.S. jurisdictions)
web.queries@computershare.com

Annual Report on Form 10-K
Additional copies of the Marathon Petroleum Corporation 2016 Annual Report may be obtained by contacting:
Public Affairs
539 South Main St.
Findlay, OH 45840
(419) 421-3577

Dividends
Dividends on common stock, as may be declared by the board of directors, are typically paid mid-month in March, June, September and December.

Dividend Checks Not Received / Electronic Deposit
If you do not receive your dividend check on the appropriate payment date, we suggest that you wait at least 10 days after the payment date to allow for any delay in mail delivery. After that time, advise Computershare by phone or in writing to issue a replacement check. You may contact Computershare to authorize electronic deposit of your dividends into your bank account.

Dividend Reinvestment and Direct Stock Purchase Plan
The Dividend Reinvestment and Direct Stock Purchase Plan provides stockholders with a convenient way to purchase additional shares of Marathon Petroleum Corporation common stock through investment of cash dividends or through optional cash payments. Stockholders of record can request a copy of the Plan Prospectus and an authorization form from Computershare. Beneficial holders should contact their brokers.

Book-entry Form of Stock Ownership
Marathon Petroleum Corporation exclusively maintains book-entry form of stockholder ownership. Account statements issued by stock transfer agent, Computershare, shall serve as stockholders' record of ownership. Questions regarding stock ownership should be directed to Computershare.

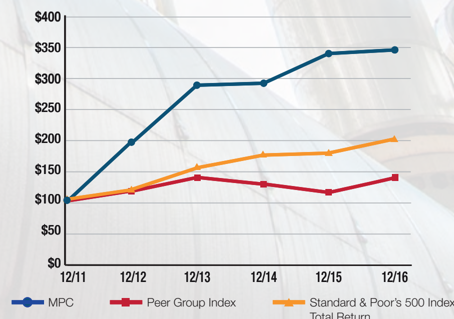
Taxpayer Identification Number
Federal law requires that each stockholder provide a certified taxpayer identification number (TIN) for his/her stockholder account. For individual stockholders, your TIN is your Social Security number. If you do not provide a certified TIN, Computershare may be required to withhold 28 percent for federal income taxes from your dividends.

Address Change
It is important that you notify Computershare immediately, by phone, in writing or by fax, when you change your address. Seasonal addresses can be entered for your account.

Stock Return Performance Graph
The following performance graph compares the cumulative total return, assuming the reinvestment of dividends, of a $100 investment in our common stock from Dec. 31, 2011, to Dec. 31, 2016, compared to the cumulative total return of a $100 investment in the S&P 500 Index and an index of peer companies (selected by us) for the same period. Our peer group consists of the following companies that engage in domestic refining operations: BP plc, Royal Dutch Shell plc, Chevron Corporation, HollyFrontier Corporation, Phillips 66 (ConocoPhillips prior to May 1, 2012), Tesoro Corporation, ExxonMobil Corporation, and Valero Energy Corporation.

The following performance graph is not "soliciting material" and will not be deemed to be filed with the Securities and Exchange Commission (SEC) or incorporated by reference into any of MPC's filings with the SEC, except to the extent that we specifically incorporate it by reference into any such filings.

Comparison of Cumulative Total Return
on $100 Invested in MPC Common Stock
on Dec. 31, 2011 vs. S&P 500 Index and Peer Group Index



On back cover: MPC's refinery in Robinson, Illinois

Marathon Petroleum Corporation

MARATHON PETROLEUM CORPORATION
539 South Main St.
Findlay, OH 45840

Disclosures Regarding Forward-Looking Statements

This summary annual report wrap includes forward-looking statements. You can identify our forward-looking statements by words such as "anticipate," "believe," "design," "estimate," "expect," "forecast," "goal," "guidance," "imply," "intend," "objective," "opportunity," "outlook," "plan," "position," "pursue," "prospective," "predict," "project," "potential," "seek," "strategy," "target," "could," "may," "should," "would," "will" or other similar expressions that convey the uncertainty of future events or outcomes. We have based our forward-looking statements on our current expectations, estimates and projections about our industry and our company. We caution that these statements are not guarantees of future performance and you should not rely unduly on them, as they involve risks, uncertainties and assumptions that we cannot predict. In addition, we have based many of these forward-looking statements on assumptions about future events that may prove to be inaccurate. While our management considers these assumptions to be reasonable, they are inherently subject to significant business, economic, competitive, regulatory and other risks, contingencies and uncertainties, most of which are difficult to predict and many of which are beyond our control. Accordingly, our actual results may differ materially from the future performance that we have expressed or forecast in our forward-looking statements. In accordance with "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, we have included in our attached Form 10-K for the year ended Dec. 31, 2016, cautionary language identifying important factors, though not necessarily all such factors, that could cause future outcomes to differ materially from those set forth in the forward-looking statements.