Annual Report

2016

Martin Marietta, an American-based company and a member of the S&P 500 Index, is a leading supplier of aggregates and heavy building materials, with operations spanning 26 states, Canada and the Bahamas. Dedicated teams at Martin Marietta supply the resources for the roads, sidewalks and foundations on which we live. Martin Marietta's Magnesia Specialties business provides a full range of magnesium oxide, magnesium hydroxide and dolomitic lime products.

Production and Sales

Magnesia Specialties Manufacturing Facilities

Cement Production Plants

Foundation. Transformation. Value.

Letter to Shareholders . . . 2-5

Financial Highlights . . . 6

Statement of Financial Responsibility and Management's Report on Internal Control Over Financial Reporting . . . 7

Report of Independent Registered Public Accounting Firm – PricewaterhouseCoopers LLP . . . 8

Report of Independent Registered Public Accounting Firm – Ernst & Young LLP . . . 9

Consolidated Statements of Earnings . . . 10

Consolidated Statements of Comprehensive Earnings . . . 11

Consolidated Balance Sheets . . . 12

Consolidated Statements of Cash Flows . . . 13

Consolidated Statements of Total Equity . . . 14

Notes to Financial Statements . . . 15-40

Management's Discussion & Analysis of Financial Condition & Results of Operations . . . 41-87

Quarterly Performance . . . 88

Five Year Selected Financial Data . . . 89

Common Stock Performance Graph . . . 90

Principal Operating Elements & Corporate Directory . . . 91-94

General Information . . . 95

C. Howard Nye

***Fortune* magazine named Martin Marietta one of the World's 100 Fastest Growing Companies.**

PREPARATION, PLANNING AND PERFORMANCE LEAD TO RECORD YEAR

To Our Shareholders:

The future belongs to those who prepare for it. While an age-old maxim, it is nonetheless an entirely appropriate summation on the state of our Company. Indeed, looking at Martin Marietta's performance in 2016, one can easily say that we generated record-setting results because of the prudent and deliberate steps and preparation we undertook years ago.

Plan for the Best, Prepare for the Worst

While many viewed the Great Recession of 2008-2009 as the beginning of the end and predicted a downward spiral equal to or greater than the Depression of the 1930s, we believed history would not wholly repeat itself and we began diligently preparing for the future recovery. We believed demographics, geography and discipline would prevail and that our nation would experience an economic recovery, later if not sooner, particularly in the high-growth corridors in which we have built much of our business. It was not that we were especially prescient, but we saw that our country's infrastructure was in dire need of fixing or replacing; we recognized that a growing population in the majority of the markets in which we operate would need homes, schools and stores; and we believed that government – local, state and national – would stimulate job growth and bring the economy back on a growth track. Thus, we looked for obvious, and not-so-obvious, opportunities that would enable us not only to weather and survive the Great Recession better than most, but more importantly to thrive and benefit from any forthcoming recovery.

And find those opportunities we did. Over the recent past, we significantly added to our asset base, completed a transformative acquisition, strategically entered new markets and regions that we believed had both near- and long-term dynamic growth potential, and similarly exited markets that we believed were not as attractive using those same criteria. The result: in September 2016 *Fortune* magazine named Martin Marietta one of the World's 100 Fastest Growing Companies. While this recognition is gratifying, what we're most pleased by is **how** we've grown. Our Company has not been focused on getting bigger, but rather getting better by adherence to our careful planning and doing things the Martin Marietta way. Accordingly, throughout this dynamic period, one constant remained – Martin Marietta's culture. Our cultural foundation is best evidenced by the Company's steadfast commitment to employee safety. We have continued to systematically elevate safety standards for both our acquired and heritage operations. Why? Not only is it the right thing to do for our employees' well-being, but it also fosters meaningful engagement in our many communities. It's one more vital element that further validates the social license we have to conduct our business while we help build a better world and deliver increasing shareholder value.

All of these factors, driven by a solid execution of our long-term strategic plan (known internally as our Strategic Operating Analysis and Review, or SOAR), not only led to our ability to establish new records for sales and profits in 2016, but also positioned us extremely well to continue to capitalize on the expected expansion of our nation's economic base, especially growth in spending on infrastructure projects and on residential and nonresidential construction.

Preparation and Disciplined Execution Yields Performance

Before looking too far ahead, let's focus on what preparation and disciplined execution yielded last year. Specifically, Martin Marietta's 2016 financial and operating results can be summarized as follows:

- Net sales of $3.6 billion (compared with $3.3 billion in 2015)
- Gross profit of $909 million (compared with $722 million)
- Earnings from operations of $667 million (compared with $479 million)
- Net earnings of $425 million (compared with $289 million)
- Earnings per diluted share of $6.63 (compared with $4.29)
  - An increase of 55 percent on a sales increase of 9 percent

Undoubtedly our results may be credited in part to the improved overall economy; however, much of the gains have to be attributed to bold, yet disciplined, preparation for this recovery. Surely, as I have referenced in prior communications, we are seeing a slow-but-steady improvement in the economy and the beginning of a meaningful uptick in residential, non-residential and infrastructure activity, especially in those geographic areas where we hold leading market positions. That said, this particular recovery is not like most others; it's been considerably more muted. Still, despite what many see as anemic growth in our country's GDP and employment numbers, our industry is performing better than other sectors of the economy, and within our sector, Martin Marietta is the clear leader in almost every key metric.

Targeted, Attractive and Growing Markets

Our "headline results" cited above deserve a closer examination to appreciate the breadth and depth of our performance. In 2016, every business throughout our Company made meaningful contributions to our profits. The Southeast Group and the West Group saw gross profit increase 67 percent and 35 percent, respectively. Notably too, the accelerating recovery in North Carolina and South Carolina contributed to the 19 percent gain in the Mid-America Group's gross profit.

As we have pointed out when speaking to investors who want a better understanding of our macroeconomic model, one critical economic factor is job creation. Clearly, this economic recovery was not characterized by a rapid acceleration of job growth. Steady employment growth, however, remains a stimulus for construction activity and has been instrumental in spurring demand for our products. For the twelve-months ended December 31, 2016, the United States added 2.2 million jobs, and over the past five years, the country added over 12 million jobs. Importantly for Martin Marietta, many of the regions we serve led the nation in job growth, including Texas, Colorado, North Carolina, Georgia and Florida. How is this affecting our financial performance and outlook? Positively!

Discipline Translates to Improved Margins

In the past year, our aggregates product line volume growth of nearly 1.5 percent reflected increases in both residential and non-residential demand. Importantly though, we achieved these results in the face of some uncontrollable headwinds, notably various Texas Department of Transportation, or TXDOT, project delays, reduced energy-sector shipments, lower railroad ballast demand and the effect of abnormally wet weather leading to challenging operating and market conditions, including 2016's fourth-quarter impact from Hurricane Matthew. Yet our ability to deliver growth despite the effects of external factors underscores the power of our planning and the strength of our business model. Overall, we are benefitting from an improving economy, and our ability to generate greater profitability from a modest increase in product shipment volume is a testament to how efficiently our teams run the business. For example, in 2016, we translated a 7.3 percent increase in aggregates product line pricing, in combination with our disciplined cost controls, into a 26 percent increase in consolidated gross profit and a 330-basis-point improvement in consolidated gross profit margin (excluding freight and delivery revenues).

Infrastructure shipments, which represented 39 percent of aggregates product line volume in 2016, faced several temporary challenges. We did not anticipate any meaningful benefit in 2016 from the passage in December 2015 of the $305 billion *Fixing America's Surface Transportation Act* (FAST Act); but we expect the FAST Act to contribute notably to our volume in 2017 and future years. What was not expected last year were project delays, primarily at TXDOT, and continued heavy rainfall in several parts of the country we serve. The former issue has now been largely resolved, but the latter, as ever, is up to Mother Nature.

The nonresidential market accounted for 32 percent of aggregates product line shipments. The Mid-America Group and the Southeast Group both showed gains over last year, but the West Group was negatively impacted by weather deferrals and lower energy-sector demand.

The residential market accounted for 21 percent of aggregates product line shipments, with the greatest gains coming from the Mid-America and West Groups. However, looking at the macro picture, even with 1.17 million housing starts in 2016, starts are well below historical rates. Housing starts in 2017 are expected to increase as we return to more normalized levels of residential construction activity. Importantly, several of our top markets in core Martin Marietta states are projected to be among the strongest markets nationally. Finally, the ChemRock/Rail end-use accounted for the remaining 8 percent of aggregates product line volume. This volume was below the 2015 level and principally reflects reduced ballast shipments driven by lower energy-related demand, which in turn impacts rail transportation.

Despite the modest volume growth compared with 2015, overall aggregates product line pricing increased across our business. The overall price increase of 7.3 percent was in line with our expectations and, along with our cost controls, enabled our aggregates product line to achieve a nearly 27 percent gross margin (excluding freight and delivery revenues), an increase of 230-basis-points compared with prior year.

Our Cement business generated $364.4 million of net sales and $120.1 million of gross profit, a 16 percent improvement. Excluding the results of the California cement operations divested in 2015, the Cement business achieved a 500-basis-point increase in gross margin (excluding freight and delivery revenues) to 33 percent. Strong efficiency gains at our two cement plants in Texas were the main catalyst for the improved profits.

The ready mixed concrete product line benefitted from strong demand, higher pricing and improved operating conditions. Volumes increased nearly 27 percent and average selling price increased 8.3 percent, enabling us to achieve a 450-basis-point improvement in gross margin (excluding freight and delivery revenues). Notably, the gross profit of the Texas business more than doubled, while gross profit in the Colorado business improved 49 percent.

Magnesia Specialties once again delivered record performance, generating net sales of $238.0 million and $89.5 million of gross profit, reflecting a 300-basis-point improvement in gross margin (excluding freight and delivery revenues).

Solid execution of our strategic plan led to new records for sales and profits in 2016 and positioned us extremely well to continue to capitalize on the expected expansion of our nation's economic base.

Building Shareholder Value

Our ability to consistently deliver value for shareholders, customers and others is aided immeasurably by our information systems, and, for the third year in a row, the Company was on the *InformationWeek Elite 100* – a list of the top business technology innovators in the United States. Finishing eight spots higher than in 2015, Martin Marietta has now been included on this prestigious list (and its predecessor *InformationWeek 500* ranking) for 15 consecutive years. Ours is the only company in 2016's list representing the "metals and natural resources" industry. This ranking reflects the Company's approach to technology integration, when, in just one year, Martin Marietta integrated two business management software systems and dozens of applications; on-boarded and trained over 2,000 new employees; transitioned and served over 3,400 new customers; and connected over 179 new sites to our network. Greater connectivity creates greater value.

As you might expect from our strong performance and disciplined strategy, the Company continues to achieve new heights of financial strength in terms of both liquidity and capital resources. Cash provided by operations was $678.7 million (compared with $573.2 million in 2015) and our capital expenditures were $404 million (compared with $327 million in 2015) as we continue to invest in our plant, property and equipment.

I am particularly pleased that our record-setting performance meaningfully benefitted our investors. Since announcing our share repurchase authorization in February 2015, Martin Marietta has repurchased 4.9 million shares and, including the payment of dividends, returned nearly $1 billion dollars of value to our shareholders. This does not reflect capital appreciation on our shares, which in 2016 increased 64 percent and placed us as the 9th best performer in the S&P 500.

Our Commitment

As meaningful as these types of returns are to all of Martin Marietta's stakeholders, so too are the things our Company does, every day, to improve the hundreds of communities, big and small, in which we live and work. To better relay that important and enduring commitment, we completed and issued the Company's second annual sustainability report. "*Building Solid Foundations – Partnering for Stronger Communities*" represents our latest publication sharing Martin Marietta's sustainability story from the perspective of our hard-working, dedicated employees. From our world-class safety programs and performance, to our targeted and intentional support of housing, hunger reduction and healthcare, to environmental programs that reduce our impact and ensure operational excellence, we have a solid foundation and an exciting opportunity from which to build. If you want to know more about Martin Marietta's accomplishments in this important area, I invite you to read our report on our website.

By almost any meaningful measure, 2016 was an outstanding year. But, as is often asked: "What have you done for me lately?" As I mentioned at the start of this letter, the future belongs to those who prepare. For us, the short- and longer-term future looks very promising. We expect residential and nonresidential construction activity will continue to grow and expand. Infrastructure spending on the federal, state and local levels will be a major boost for America and for our Company. There are not too many areas where you can find bipartisan support in government these days. However, there is almost unanimous agreement that our country needs to invest substantial monies on our highways, bridges, roads, streets, airports, broader transportation systems and other public facilities. I can promise you though, whatever the days, weeks, months and years ahead may bring, Martin Marietta is prepared. And that makes me and our team excited about the future of our Company.

None of what I am privileged to report to you in this letter and in the material that follows would be possible without the incredible dedication of our more than eight thousand employees and the advice, counsel and involvement of our Board of Directors. On their behalf, I thank you for your continued support.

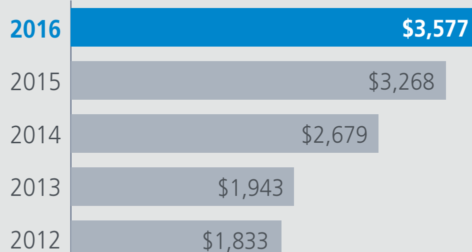
Respectfully,

C. Howard Nye, *Chairman, President and Chief Executive Officer*
February 24, 2017

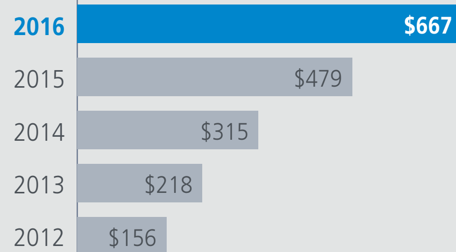
FINANCIAL HIGHLIGHTS

(add 000, except per share)	2016	2015
Total revenues	**$ 3,818,749**	$ 3,539,570
Net sales[1]	**$ 3,576,767**	$ 3,268,116
Earnings from operations	**$ 667,321**	$ 479,416
Net earnings attributable to Martin Marietta	**$ 425,386**	$ 288,792
Diluted earnings per common share	**$ 6.63**	$ 4.29
Cash dividends per common share	**$ 1.64**	$ 1.60
Common shares outstanding at December 31	**63,176**	64,479

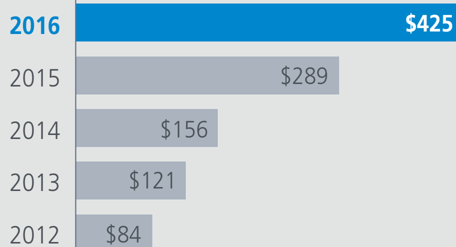
NET SALES[1] (in millions)



EARNINGS FROM OPERATIONS (in millions)



NET EARNINGS ATTRIBUTABLE TO MARTIN MARIETTA (in millions)



TOTAL RETURN (INCLUSIVE OF DIVIDENDS)
(as of December 31, 2016)

	Martin Marietta Common Stock	S&P 500 Index	S&P 500 Materials Index
1 Yr.	63.7%	12.0%	16.7%
3 Yr.	128.9%	29.0%	14.3%
5 Yr.	214.6%	98.2%	65.0%
10 Yr.	148.0%	95.7%	80.1%

[1] Net sales exclude freight and delivery revenues; such revenues are included in total revenues in the Consolidated Statements of Earnings on page 10.

STATEMENT OF FINANCIAL RESPONSIBILITY AND MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management's Statement of Responsibility

The management of Martin Marietta Materials, Inc. ("Martin Marietta" or "Corporation"), is responsible for the consolidated financial statements, the related financial information contained in this 2016 Annual Report and the establishment and maintenance of adequate internal control over financial reporting. The consolidated balance sheets for Martin Marietta, at December 31, 2016 and 2015, and the related consolidated statements of earnings, comprehensive earnings, total equity and cash flows for each of the three years in the period ended December 31, 2016, include amounts based on estimates and judgments and have been prepared in accordance with accounting principles generally accepted in the United States applied on a consistent basis.

A system of internal control over financial reporting is designed to provide reasonable assurance, in a cost-effective manner, that assets are safeguarded, transactions are executed and recorded in accordance with management's authorization, accountability for assets is maintained and financial statements are prepared and presented fairly in accordance with accounting principles generally accepted in the United States. Internal control systems over financial reporting have inherent limitations and may not prevent or detect misstatements. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

The Corporation operates in an environment that establishes an appropriate system of internal control over financial reporting and ensures that the system is maintained, assessed and monitored on a periodic basis. This internal control system includes examinations by internal audit staff and oversight by the Audit Committee of the Board of Directors.

The Corporation's management recognizes its responsibility to foster a strong ethical climate. Management has issued written policy statements that document the Corporation's business code of ethics. The importance of ethical behavior is regularly communicated to all employees through the distribution of the *Code of Ethical Business Conduct* booklet and through ongoing education and review programs designed to create a strong commitment to ethical business practices.

The Audit Committee of the Board of Directors, which consists of four independent, nonemployee directors, meets periodically and separately with management, the independent auditors and the internal auditors to review the activities of each. The Audit Committee meets standards established by the Securities and Exchange Commission and the New York Stock Exchange as they relate to the composition and practices of audit committees.

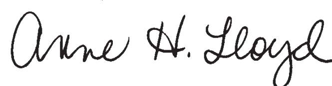
Management's Report on Internal Control over Financial Reporting

The management of Martin Marietta is responsible for establishing and maintaining adequate control over financial reporting. Management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2016. In making this assessment, management used the criteria set forth in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) ("COSO"). Based on management's assessment under the framework in *Internal Control – Integrated Framework*, management concluded that the Corporation's internal control over financial reporting was effective as of December 31, 2016.

In making this assessment of internal control over financial reporting as of December 31, 2016, management has excluded the internal controls of its newly-acquired Ratliff ready mixed concrete operations, which are included in the consolidated financial statements for the period ended December 31, 2016 and constituted approximately 1% of consolidated total assets as of December 31, 2016 and approximately 1% of net sales for the year ended December 31, 2016.

The 2016 consolidated financial statements and effectiveness of internal control over financial reporting have been audited by PricewaterhouseCoopers, LLP, an independent registered public accounting firm, whose report appears on the following page.

C. Howard Nye
Chairman, President and Chief Executive Officer
February 24, 2017



Anne H. Lloyd
Executive Vice President and Chief Financial Officer

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To Board of Directors and Shareholders of Martin Marietta Materials, Inc.

In our opinion, the accompanying consolidated balance sheet as of December 31, 2016 and the related consolidated statements of earnings, comprehensive earnings, total equity, and cash flows for the year then ended present fairly, in all material respects, the financial position of Martin Marietta Materials, Inc. and its subsidiaries at December 31, 2016, and the results of their operations and their cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the index appearing under Item 15(a)(2) as of and for the year ended December 31, 2016 presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. 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 and financial statement schedule, 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, on the financial statement schedule, and on the Company's internal control over financial reporting based on our integrated audit. We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit 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 audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides 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.

As described in the Management's Report on Internal Control over Financial Reporting, management has excluded Ratliff Ready-Mix, L.P. from its assessment of internal control over financial reporting as of December 31, 2016 because it was acquired by the Company in a purchase business combination during 2016. We have also excluded Ratliff Ready-Mix, L.P. from our audit of internal control over financial reporting. Ratliff Ready-Mix, L.P. is a wholly-owned subsidiary whose total assets and net sales each represent approximately 1% of the related consolidated financial statement amounts as of and for the year ended December 31, 2016.

/s/ PricewaterhouseCoopers LLP

Raleigh, North Carolina
February 24, 2017

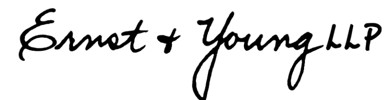
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To Board of Directors and Shareholders of Martin Marietta Materials, Inc.

We have audited the accompanying consolidated balance sheets of Martin Marietta Materials, Inc. as of December 31, 2015 and the related consolidated statements of earnings, comprehensive earnings, total equity and cash flows for each of the two years in the period ended December 31, 2015. These financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on these financial statements based on our 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 audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Martin Marietta Materials, Inc. at December 31, 2015 and the consolidated results of its operations and its cash flows for each of the two years in the period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles.



Raleigh, North Carolina
February 24, 2017

(add 000, except per share)	**2016**	2015	2014
Net Sales	**$ 3,576,767**	$ 3,268,116	$ 2,679,095
Freight and delivery revenues	**241,982**	271,454	278,856
Total revenues	**3,818,749**	3,539,570	2,957,951
Cost of sales	**2,667,801**	2,546,349	2,156,735
Freight and delivery costs	**241,982**	271,454	278,856
Total cost of revenues	**2,909,783**	2,817,803	2,435,591
Gross Profit	**908,966**	721,767	522,360
Selling, general and administrative expenses	**248,005**	218,234	169,245
Acquisition-related expenses, net	**1,683**	8,464	42,891
Other operating (income) and expenses, net	**(8,043)**	15,653	(4,649)
Earnings from Operations	**667,321**	479,416	314,873
Interest expense	**81,677**	76,287	66,057
Other nonoperating income, net	**(21,384)**	(10,672)	(362)
Earnings from continuing operations before taxes on income	**607,028**	413,801	249,178
Taxes on income	**181,584**	124,863	94,847
Earnings from Continuing Operations	**425,444**	288,938	154,331
Loss on discontinued operations, net of related tax benefit of $0, $0 and $40, respectively	**–**	–	(37)
Consolidated net earnings	**425,444**	288,938	154,294
Less: Net earnings (loss) attributable to noncontrolling interests	**58**	146	(1,307)
Net Earnings Attributable to Martin Marietta	**$ 425,386**	$ 288,792	$ 155,601
Net Earnings (Loss) Attributable to Martin Marietta			
Earnings from continuing operations	**$ 425,386**	$ 288,792	$ 155,638
Discontinued operations	**–**	–	(37)
	$ 425,386	$ 288,792	$ 155,601
Net Earnings Attributable to Martin Marietta Per Common Share (see Note A)			
– Basic from continuing operations attributable to common shareholders	**$ 6.66**	$ 4.31	$ 2.73
– Discontinued operations attributable to common shareholders	**–**	–	–
	$ 6.66	$ 4.31	$ 2.73
– Diluted from continuing operations attributable to common shareholders	**$ 6.63**	$ 4.29	$ 2.71
– Discontinued operations attributable to common shareholders	**–**	–	–
	$ 6.63	$ 4.29	$ 2.71
Weighted-Average Common Shares Outstanding			
– Basic	**63,610**	66,770	56,854
– Diluted	**63,861**	67,020	57,088

The notes on pages 15 through 40 are an integral part of these financial statements.

(add 000)	2016	2015	2014
Consolidated Net Earnings	**$ 425,444**	$ 288,938	$ 154,294
Other comprehensive (loss) earnings, net of tax:			
Defined benefit pension and postretirement plans:			
Net loss arising during period, net of tax of $(19,734), $(4,530) and $(39,752), respectively	**(31,620)**	(7,101)	(62,767)
Amortization of prior service credit, net of tax of $(617), $(731) and $(1,108), respectively	**(992)**	(1,149)	(1,702)
Amortization of actuarial loss, net of tax of $4,437, $6,551 and $1,490, respectively	**7,138**	10,299	2,289
Amount recognized in net periodic pension cost due to settlement, net of tax of $44	**71**	–	–
Amount recognized in net periodic pension cost due to special plan termination benefits, net of tax of $293 and $811, respectively	**471**	1,274	–
	(24,932)	3,323	(62,180)
Foreign currency translation loss	**(898)**	(3,542)	(624)
Amortization of terminated value of forward starting interest rate swap agreements into interest expense, net of tax of $541, $509 and $470, respectively	**826**	771	718
	(25,004)	552	(62,086)
Consolidated comprehensive earnings	**400,440**	289,490	92,208
Less: Comprehensive earnings (loss) attributable to noncontrolling interests	**119**	161	(1,348)
Comprehensive Earnings Attributable to Martin Marietta	**$ 400,321**	$ 289,329	$ 93,556

The notes on pages 15 through 40 are an integral part of these financial statements.

CONSOLIDATED BALANCE SHEETS at December 31

Assets (add 000)	2016	2015
Current Assets:		
Cash and cash equivalents	**$ 50,038**	$ 168,409
Accounts receivable, net	**457,910**	410,921
Inventories, net	**521,624**	469,141
Other current assets	**56,813**	33,164
Total Current Assets	**1,086,385**	1,081,635
Property, plant and equipment, net	**3,423,395**	3,156,000
Goodwill	**2,159,337**	2,068,235
Operating permits, net	**442,202**	444,725
Other intangibles, net	**69,110**	65,827
Other noncurrent assets	**120,476**	141,189
Total Assets	**$ 7,300,905**	$ 6,957,611

Liabilities and Equity (add 000, except parenthetical share data)	2016	2015
Current Liabilities:		
Bank overdraft	**$ –**	$ 10,235
Accounts payable	**178,598**	164,718
Accrued salaries, benefits and payroll taxes	**47,428**	30,939
Pension and postretirement benefits	**9,293**	8,168
Accrued insurance and other taxes	**60,093**	62,781
Current maturities of long-term debt	**180,036**	18,713
Other current liabilities	**71,140**	71,104
Total Current Liabilities	**546,588**	366,658
Long-term debt	**1,506,153**	1,550,061
Pension, postretirement and postemployment benefits	**248,086**	224,538
Deferred income taxes, net	**663,019**	583,459
Other noncurrent liabilities	**194,469**	172,718
Total Liabilities	**3,158,315**	2,897,434
Equity:		
Common stock ($0.01 par value; 100,000,000 shares authorized; 63,176,000 and 64,479,000 shares outstanding at December 31, 2016 and 2015, respectively)	**630**	643
Preferred stock ($0.01 par value; 10,000,000 shares authorized; no shares outstanding)	**–**	–
Additional paid-in capital	**3,334,461**	3,287,827
Accumulated other comprehensive loss	**(130,687)**	(105,622)
Retained earnings	**935,574**	874,436
Total Shareholders' Equity	**4,139,978**	4,057,284
Noncontrolling interests	**2,612**	2,893
Total Equity	**4,142,590**	4,060,177
Total Liabilities and Equity	**$ 7,300,905**	$ 6,957,611

The notes on pages 15 through 40 are an integral part of these financial statements.

(add 000)	2016	2015	2014
Cash Flows from Operating Activities:			
Consolidated net earnings	**$ 425,444**	$ 288,938	$ 154,294
Adjustments to reconcile consolidated net earnings to net cash provided by operating activities:			
Depreciation, depletion and amortization	**285,253**	263,587	222,746
Stock-based compensation expense	**20,481**	13,589	8,993
Loss (gains) on divestitures and sales of assets	**410**	14,093	(52,297)
Deferred income taxes	**67,050**	85,225	50,292
Excess tax benefits from stock-based compensation transactions	**(6,792)**	–	(2,508)
Other items, net	**(17,730)**	(5,972)	4,795
Changes in operating assets and liabilities, net of effects of acquisitions and divestitures:			
Accounts receivable, net	**(25,072)**	12,309	(16,650)
Inventories, net	**(47,381)**	(21,525)	(12,020)
Accounts payable	**(8,116)**	(40,053)	5,303
Other assets and liabilities, net	**(14,893)**	(37,040)	18,710
Net Cash Provided by Operating Activities	**678,654**	573,151	381,658
Cash Flows from Investing Activities:			
Additions to property, plant and equipment	**(387,267)**	(318,232)	(232,183)
Acquisitions, net	**(178,768)**	(43,215)	(189)
Cash received in acquisition	**4,246**	63	59,887
Proceeds from divestitures and sales of assets	**6,476**	448,122	121,985
Payment of railcar construction advances	**(82,910)**	(25,234)	(14,513)
Reimbursement of railcar construction advances	**82,910**	25,234	14,513
Repayments from affiliate	**–**	1,808	1,175
Net Cash (Used for) Provided By Investing Activities	**(555,313)**	88,546	(49,325)
Cash Flows from Financing Activities:			
Borrowings of long-term debt	**560,000**	230,000	868,762
Repayments of long-term debt	**(449,306)**	(244,704)	(1,057,289)
Debt issuance costs	**(2,300)**	–	(2,782)
Change in bank overdraft	**(10,235)**	10,052	(2,373)
Payments on capital lease obligations	**(3,364)**	(6,616)	(3,075)
Dividends paid	**(105,036)**	(107,462)	(91,304)
Distributions to owners of noncontrolling interests	**(400)**	(325)	(800)
Contributions by noncontrolling interests to joint venture	**44**	–	–
Repurchase of common stock	**(259,228)**	(519,962)	–
Purchase of remaining interest in existing subsidiaries	**–**	–	(19,480)
Issuances of common stock	**21,321**	37,078	39,714
Excess tax benefits from stock-based compensation transactions	**6,792**	–	2,508
Net Cash Used for Financing Activities	**(241,712)**	(601,939)	(266,119)
Net (Decrease) Increase in Cash and Cash Equivalents	**(118,371)**	59,758	66,214
Cash and Cash Equivalents, beginning of year	**168,409**	108,651	42,437
Cash and Cash Equivalents, end of year	**$ 50,038**	$ 168,409	$ 108,651

The notes on pages 15 through 40 are an integral part of these financial statements.

(add 000, except per share data)	Shares of Common Stock	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Earnings	Retained Earnings	Total Shareholders' Equity	Non-controlling Interests	Total Equity
Balance at December 31, 2013	46,261	$ 461	$ 432,792	$ (44,114)	$ 1,148,738	$ 1,537,877	$ 37,042	$ 1,574,919
Consolidated net earnings (loss)	–	–	–	–	155,601	155,601	(1,307)	154,294
Other comprehensive loss	–	–	–	(62,045)	–	(62,045)	(41)	(62,086)
Dividends declared ($1.60 per common share)	–	–	–	–	(91,304)	(91,304)	–	(91,304)
Issuances of common stock, stock options and stock appreciation rights for TXI acquisition	20,309	203	2,751,670	–	–	2,751,873	–	2,751,873
Issuances of common stock for stock award plans	723	7	41,765	–	–	41,772	–	41,772
Stock-based compensation expense	–	–	8,993	–	–	8,993	–	8,993
Distributions to owners of noncontrolling interests	–	–	–	–	–	–	(800)	(800)
Purchase of subsidiary shares from noncontrolling interest	–	–	8,399	–	–	8,399	(33,312)	(24,913)
Balance at December 31, 2014	67,293	$ 671	$3,243,619	$ (106,159)	$ 1,213,035	$ 4,351,166	$ 1,582	$ 4,352,748
Consolidated net earnings	–	–	–	–	288,792	288,792	146	288,938
Other comprehensive earnings	–	–	–	537	–	537	15	552
Dividends declared ($1.60 per common share)	–	–	–	–	(107,462)	(107,462)	–	(107,462)
Issuances of common stock for stock award plans	471	5	30,619	–	–	30,624	–	30,624
Repurchases of common stock	(3,285)	(33)	–	–	(519,929)	(519,962)	–	(519,962)
Stock-based compensation expense	–	–	13,589	–	–	13,589	–	13,589
Noncontrolling interest acquired from business combination	–	–	–	–	–	–	1,475	1,475
Distributions to owners of noncontrolling interests	–	–	–	–	–	–	(325)	(325)
Balance at December 31, 2015	64,479	$ 643	$ 3,287,827	$ (105,622)	$ 874,436	$ 4,057,284	$ 2,893	$ 4,060,177
Consolidated net earnings	**–**	**–**	**–**	**–**	**425,386**	**425,386**	**58**	**425,444**
Other comprehensive earnings	**–**	**–**	**–**	**(25,065)**	**–**	**(25,065)**	**61**	**(25,004)**
Dividends declared ($1.64 per common share)	**–**	**–**	**–**	**–**	**(105,036)**	**(105,036)**	**–**	**(105,036)**
Issuances of common stock for stock award plans	**285**	**3**	**26,109**	**–**	**–**	**26,112**	**–**	**26,112**
Repurchases of common stock	**(1,588)**	**(16)**	**–**	**–**	**(259,212)**	**(259,228)**	**–**	**(259,228)**
Stock-based compensation expense	**–**	**–**	**20,481**	**–**	**–**	**20,481**	**–**	**20,481**
Distributions to owners of noncontrolling interest	**–**	**–**	**–**	**–**	**–**	**–**	**(400)**	**(400)**
Contribution from owners of noncontrolling interest	**–**	**–**	**44**	**–**	**–**	**44**	**–**	**44**
Balance at December 31, 2016	**63,176**	**$ 630**	**$3,334,461**	**$ (130,687)**	**$ 935,574**	**$ 4,139,978**	**$ 2,612**	**$ 4,142,590**

The notes on pages 15 through 40 are an integral part of these financial statements.

Note A: Accounting Policies

Organization. Martin Marietta Materials, Inc., (the "Corporation" or "Martin Marietta") is engaged principally in the construction aggregates business. The aggregates product line includes crushed stone, sand and gravel, and is used for the construction of infrastructure, nonresidential and residential projects. Aggregates products are also used for railroad ballast, and in agricultural, utility and environmental applications. These aggregates products, along with the Corporation's aggregates-related downstream product lines, namely heavy building materials such as asphalt products, ready mixed concrete and road paving construction services, are sold and shipped from a network of more than 400 quarries, distribution facilities and plants to customers in 29 states, Canada, the Bahamas and the Caribbean Islands. The aggregates and aggregates-related downstream product lines are reported collectively as the "Aggregates business." As of December 31, 2016, the Aggregates business contains the following reportable segments: Mid-America Group, Southeast Group and West Group. The Mid-America Group operates in Indiana, Iowa, northern Kansas, Kentucky, Maryland, Minnesota, Missouri, eastern Nebraska, North Carolina, Ohio, South Carolina, Virginia, Washington and West Virginia. The Southeast Group has operations in Alabama, Florida, Georgia, Tennessee, Nova Scotia and the Bahamas. The West Group operates in Arkansas, Colorado, southern Kansas, Louisiana, western Nebraska, Nevada, Oklahoma, Texas, Utah and Wyoming. The following states accounted for 73% of the Aggregates business' 2016 net sales: Texas, Colorado, North Carolina, Iowa and Georgia.

The Cement segment produces Portland and specialty cements at two plants in Texas. Similar to the Aggregates business, cement is used in infrastructure projects, nonresidential and residential construction, and the railroad, agricultural, utility and environmental industries.

The Magnesia Specialties segment, with production facilities in Ohio and Michigan, produces magnesia-based chemicals products used in industrial, agricultural and environmental applications, and dolomitic lime sold primarily to customers in the steel industry.

Use of Estimates. The preparation of the Corporation's consolidated financial statements in conformity with accounting principles generally accepted in the United States requires management to make certain estimates and assumptions about future events. These estimates and the underlying assumptions affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities and reported amounts of revenues and expenses. Such estimates include the valuation of accounts receivable, inventories, goodwill, intangible assets and other long-lived assets and assumptions used in the calculation of taxes on income, retirement and other postemployment benefits, and the allocation of the purchase price to the fair values of assets acquired and liabilities assumed as part of business combinations. These estimates and assumptions are based on management's judgment. Management evaluates estimates and assumptions on an ongoing basis using historical experience and other factors, including the current economic environment, and adjusts such estimates and assumptions when facts and circumstances dictate. Changes in credit, equity and energy markets and changes in construction activity increase the uncertainty inherent in certain estimates and assumptions. As future events and their effects cannot be determined with precision, actual results could differ significantly from estimates. Changes in estimates, including those resulting from continuing changes in the economic environment, are reflected in the consolidated financial statements for the period in which the change in estimate occurs.

Basis of Consolidation. The consolidated financial statements include the accounts of the Corporation and its wholly-owned and majority-owned subsidiaries. Partially-owned affiliates are either consolidated or accounted for at cost or as equity investments, depending on the level of ownership interest or the Corporation's ability to exercise control over the affiliates' operations. Intercompany balances and transactions have been eliminated in consolidation.

Revenue Recognition. Total revenues include sales of materials and services provided to customers, net of discounts or allowances, if any, and include freight and delivery costs billed to customers. Revenues for product sales are recognized when risks associated with ownership have passed to unaffiliated customers. Typically, this occurs when finished products are shipped. Revenues derived from the road paving business are recognized using the percentage-of-completion method under the revenue-cost approach. Under the revenue-cost approach, recognized contract revenue equals the total estimated contract revenue multiplied by the percentage of completion. Recognized costs equal the total estimated contract cost multiplied by the percentage of completion. The percentage of completion is determined by costs incurred to date as a percentage of total costs estimated for the project.

Freight and Delivery Costs. Freight and delivery costs represent pass-through transportation costs incurred and paid by the Corporation to third-party carriers to deliver products to customers. These costs are then billed to the customers.

Cash and Cash Equivalents. Cash equivalents are comprised of highly-liquid instruments with original maturities of three months or less from the date of purchase. The Corporation manages its cash and cash equivalents to ensure short-term operating cash needs are met and excess funds are managed efficiently. The Corporation subsidizes shortages in operating cash through credit facilities. The Corporation utilizes excess cash to either pay down credit facility borrowings or invest in money market funds, money market demand deposit accounts or Eurodollar time deposit accounts. Money market demand deposits and Eurodollar time deposit accounts are exposed to bank solvency risk. Money market demand deposit accounts are FDIC insured up to $250,000. The Corporation's deposits in bank funds generally exceed the $250,000 FDIC insurance limit. The Corporation's cash management policy prohibits cash and cash equivalents over $100,000,000 to be maintained at any one bank.

Customer Receivables. Customer receivables are stated at cost. The Corporation does not typically charge interest on customer accounts receivables. The Corporation records an allowance for doubtful accounts, which includes a provision for probable losses based on historical write offs and a specific reserve for accounts greater than $50,000 deemed at risk. The Corporation writes off customer receivables as bad debt expense when it becomes apparent based upon customer facts and circumstances that such amounts will not be collected.

Inventories Valuation. Inventories are stated at the lower of cost or net realizable value. Costs for finished products and in process inventories are determined by the first-in, first-out method. The Corporation records an allowance for finished product inventories in excess of sales for a twelve-month period, as measured by historical sales. The Corporation also establishes an allowance for expendable parts over five years old and supplies over one year old.

Post-production stripping costs, which represent costs of removing overburden and waste materials to access mineral deposits, are a component of inventory production costs and recognized in cost of sales in the same period as the revenue from the sale of the inventory.

Properties and Depreciation. Property, plant and equipment are stated at cost.

The estimated service lives for property, plant and equipment are as follows:

Class of Assets	Range of Service Lives
Buildings	5 to 20 years
Machinery & Equipment	2 to 20 years
Land Improvements	5 to 15 years

The Corporation begins capitalizing quarry development costs at a point when reserves are determined to be proven or probable, economically mineable and when demand supports investment in the market. Capitalization of these costs ceases when production commences. Capitalized quarry development costs are classified as land improvements.

The Corporation reviews relevant facts and circumstances to determine whether to capitalize or expense pre-production stripping costs when additional pits are developed at an existing quarry. If the additional pit operates in a separate and distinct area of the quarry, these costs are capitalized as quarry development costs and depreciated over the life of the uncovered reserves. Additionally, a separate asset retirement obligation is created for additional pits when the liability is incurred. Once a pit enters the production phase, all post-production stripping costs are charged to inventory production costs as incurred.

Mineral reserves and mineral interests acquired in connection with a business combination are valued using an income approach over the life of the reserves.

Depreciation is computed over estimated service lives, principally by the straight-line method. Depletion of mineral reserves is calculated over proven and probable reserves by the units-of-production method on a quarry-by-quarry basis.

Property, plant and equipment are reviewed for impairment whenever facts and circumstances indicate that the carrying amount of an asset may not be recoverable. An impairment loss is recognized if expected future undiscounted cash flows over the estimated remaining service life of the related asset are less than the asset's carrying value.

Repair and Maintenance Costs. Repair and maintenance costs that do not substantially extend the life of the Corporation's plant and equipment are expensed as incurred.

Goodwill and Intangible Assets. Goodwill represents the excess purchase price paid for acquired businesses over the estimated fair value of identifiable assets and liabilities. Other intangibles represent amounts assigned principally to contractual agreements and are amortized ratably over periods based on related contractual terms.

The Corporation's reporting units, which represent the level at which goodwill is tested for impairment, are based on the geographic regions of the Aggregates business. Additionally, the Cement business is a separate reporting unit. Goodwill is allocated to each reporting unit based on the location of acquisitions and divestitures at the time of consummation.

The carrying values of goodwill and other indefinite-lived intangible assets are reviewed annually, as of October 1, for impairment. An interim review is performed between annual tests if facts or circumstances indicate potential impairment. The carrying value of other amortizable intangibles is reviewed if facts and circumstances indicate potential impairment. If a review indicates the carrying value is impaired, a charge is recorded.

Retirement Plans and Postretirement Benefits. The Corporation sponsors defined benefit retirement plans and also provides other postretirement benefits. The Corporation recognizes the funded status, defined as the difference between the fair value of plan assets and the benefit obligation, of its pension plans and other postretirement benefits as an asset or liability on the consolidated balance sheets. Actuarial gains or losses that arise during the year are not recognized as net periodic benefit cost in the same year, but rather are recognized as a component of accumulated other comprehensive earnings or loss. Those amounts are amortized over the participants' average remaining service period and recognized as a component of net periodic benefit cost. The amount amortized is determined using a corridor approach and represents the excess over 10% of the greater of the projected benefit obligation or pension plan assets.

Stock-Based Compensation. The Corporation has stock-based compensation plans for employees and its Board of Directors. The Corporation recognizes all forms of stock-based payments to employees, including stock options, as compensation expense. The compensation expense is the fair value of the awards at the measurement date and is recognized over the requisite service period.

The fair value of restricted stock awards, incentive compensation awards and Board of Directors' fees paid in the form of common stock are based on the closing price of the Corporation's common stock on the awards' respective grant dates. The fair value of performance stock awards based on total shareholder return is determined by a Monte Carlo simulation methodology.

In 2016, the Corporation did not issue any stock options. For stock options issued prior to 2016, the Corporation uses the accelerated expense recognition method. The accelerated recognition method requires stock options that vest ratably to be divided into tranches. The expense for each tranche is allocated to its particular vesting period.

The Corporation uses the lattice valuation model to determine the fair value of stock option awards. The lattice valuation model takes into account employees' exercise patterns based on changes in the Corporation's stock price and other variables. The period of time for which options are expected to be outstanding, or expected term of the option, is a derived output of the lattice valuation model. The Corporation considers the following factors when estimating the expected term of options: vesting period of the award, expected volatility of the underlying stock, employees' ages and external data.

Key assumptions used in determining the fair value of the stock options awarded in 2015 and 2014 were:

	2015	2014
Risk-free interest rate	2.20%	2.50%
Dividend yield	1.20%	1.50%
Volatility factor	36.10%	35.30%
Expected term	8.5 years	8.5 years

Based on these assumptions, the weighted-average fair value of each stock option granted was $57.71 and $43.42 for 2015 and 2014, respectively.

The risk-free interest rate reflects the interest rate on zero-coupon U.S. government bonds, available at the time each option was granted, having a remaining life approximately equal to the option's expected life. The dividend yield represents the dividend rate expected to be paid over the option's expected life. The Corporation's volatility factor measures the amount by which its stock price is expected to fluctuate during the expected life of the option and is based on historical stock price changes. Forfeitures are required to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The Corporation estimates forfeitures and will ultimately recognize compensation cost only for those stock-based awards that vest.

For restricted stock awards and incentive stock awards granted prior to 2016, the Corporation recognizes income tax benefits resulting from the payment of dividend equivalents on unvested stock-based payments as an increase to additional paid-in capital and includes them in the pool of excess tax benefits. For awards granted in 2016, dividend equivalents are not paid unless the award vests.

Environmental Matters. The Corporation records a liability for an asset retirement obligation at fair value in the period in which it is incurred. The asset retirement obligation is recorded at the acquisition date of a long-lived tangible asset if the fair value can be reasonably estimated. A corresponding amount is capitalized as part of the asset's carrying amount. The fair value is affected by management's assumptions regarding the scope of the work required, inflation rates and quarry closure dates.

Further, the Corporation records an accrual for other environmental remediation liabilities in the period in which it is probable that a liability has been incurred and the appropriate amounts can be estimated reasonably. Such accruals are adjusted as further information develops or circumstances change. These costs are not discounted to their present value or offset for potential insurance or other claims or potential gains from future alternative uses for a site.

Income Taxes. Deferred income taxes, net, on the consolidated balance sheets reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes, net of valuation allowances.

Uncertain Tax Positions. The Corporation recognizes a tax benefit when it is more-likely-than-not, based on the technical merits, that a tax position would be sustained upon examination by a taxing authority. The amount to be recognized is measured as the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement with a taxing authority that has full knowledge of all relevant information. The Corporation's unrecognized tax benefits are recorded in other liabilities on the consolidated balance sheets or as an offset to the deferred tax asset for tax carryforwards where available.

The Corporation records interest accrued in relation to unrecognized tax benefits as income tax expense. Penalties, if incurred, are recorded as operating expenses in the consolidated statements of earnings.

Sales Taxes. Sales taxes collected from customers are recorded as liabilities until remitted to taxing authorities and therefore are not reflected in the consolidated statements of earnings.

Research and Development Costs. Research and development costs are charged to operations as incurred.

Start-Up Costs. Noncapital start-up costs for new facilities and products are charged to operations as incurred.

Warranties. The Corporation's construction contracts contain warranty provisions covering defects in equipment, materials, design or workmanship that generally run from nine months to one year after project completion. Due to the nature of its projects, including contract owner inspections of the work both during construction and prior to acceptance, the Corporation has not experienced material warranty costs for these short-term warranties and therefore does not believe an accrual for these costs is necessary. Certain product lines carry longer warranty periods, for which the Corporation has accrued an estimate of warranty cost based on experience with the type of work and any known risks relative to the project. These costs were not material to the Corporation's consolidated results of operations for the years ended December 31, 2016, 2015 and 2014.

Consolidated Comprehensive Earnings and Accumulated Other Comprehensive Loss. Consolidated comprehensive earnings for the Corporation consist of consolidated net earnings, adjustments for the funded status of pension and postretirement benefit plans, foreign currency translation adjustments and the amortization of the value of terminated forward starting interest rate swap agreements into interest expense, and are presented in the Corporation's consolidated statements of comprehensive earnings.

Accumulated other comprehensive loss consists of unrealized gains and losses related to the funded status of the pension and postretirement benefit plans, foreign currency translation and the unamortized value of terminated forward starting interest rate swap agreements, and is presented on the Corporation's consolidated balance sheets.

The components of the changes in accumulated other comprehensive loss and related cumulative noncurrent deferred tax assets are as follows:

years ended December 31 (add 000)	Pension and Postretirement Benefit Plans	Foreign Currency	Unamortized Value of Terminated Forward Starting Interest Rate Swap	Total
		2016		
Accumulated other comprehensive loss at beginning of period	**$ (103,380)**	**$ (264)**	**$ (1,978)**	**$ (105,622)**
Other comprehensive loss before reclassifications, net of tax	**(31,678)**	**(898)**	**–**	**(32,576)**
Amounts reclassified from accumulated other comprehensive loss, net of tax	**6,685**	**–**	**826**	**7,511**
Other comprehensive (loss) earnings, net of tax	**(24,993)**	**(898)**	**826**	**(25,065)**
Accumulated other comprehensive loss at end of period	**$ (128,373)**	**$ (1,162)**	**$ (1,152)**	**$ (130,687)**
Cumulative noncurrent deferred tax assets at end of period	**$ 82,044**	**$ –**	**$ 749**	**$ 82,793**
		2015		
Accumulated other comprehensive (loss) earnings at beginning of period	$ (106,688)	$ 3,278	$ (2,749)	$ (106,159)
Other comprehensive loss before reclassifications, net of tax	(7,116)	(3,542)	–	(10,658)
Amounts reclassified from accumulated other comprehensive loss, net of tax	10,424	–	771	11,195
Other comprehensive earnings (loss), net of tax	3,308	(3,542)	771	537
Accumulated other comprehensive loss at end of period	$ (103,380)	$ (264)	$ (1,978)	$ (105,622)
Cumulative noncurrent deferred tax assets at end of period	$ 66,467	$ –	$ 1,290	$ 67,757
		2014		
Accumulated other comprehensive (loss) earnings at beginning of period	$ (44,549)	$ 3,902	$ (3,467)	$ (44,114)
Other comprehensive loss before reclassifications, net of tax	(62,726)	(624)	–	(63,350)
Amounts reclassified from accumulated other comprehensive loss, net of tax	587	–	718	1,305
Other comprehensive (loss) earnings, net of tax	(62,139)	(624)	718	(62,045)
Accumulated other comprehensive (loss) earnings at end of period	$ (106,688)	$ 3,278	$ (2,749)	$ (106,159)
Cumulative noncurrent deferred tax assets at end of period	$ 68,568	$ –	$ 1,799	$ 70,367

Reclassifications out of accumulated other comprehensive loss are as follows:

years ended December 31 (add 000)	**2016**	2015	2014	**Affected line items in the consolidated statements of earnings**
Pension and postretirement benefit plans				
Special plan termination benefit	**$ 764**	$ 2,085	$ –	
Settlement charge	**115**	–	–	
Amortization of:				
Prior service credit	**(1,609)**	(1,880)	(2,810)	
Actuarial loss	**11,575**	16,850	3,779	
	10,845	17,055	969	Cost of sales; Selling, general & administrative expenses
Tax effect	**(4,160)**	(6,631)	(382)	Taxes on income
Total	**$ 6,685**	$10,424	$ 587	
Unamortized value of terminated forward starting interest rate swap				
Additional interest expense	**$ 1,367**	$ 1,280	$ 1,188	Interest expense
Tax effect	**(541)**	(509)	(470)	Taxes on income
Total	**$ 826**	$ 771	$ 718	

Earnings Per Common Share. The Corporation computes earnings per share ("EPS") pursuant to the two-class method. The two-class method determines EPS for each class of common stock and participating securities according to dividends or dividend equivalents and their respective participation rights in undistributed earnings. The Corporation pays nonforfeitable dividend equivalents during the vesting period on its restricted stock awards and incentive stock awards made prior to 2016, which results in these being considered participating securities.

The numerator for basic and diluted earnings per common share is net earnings attributable to Martin Marietta, reduced by dividends and undistributed earnings attributable to the Corporation's unvested restricted stock awards and incentive stock awards issued prior to 2016. The denominator for basic earnings per common share is the weighted-average number of common shares outstanding during the period. Diluted earnings per common share are computed assuming that the weighted-average number of common shares is increased by the conversion, using the treasury stock method, of awards issued to employees and nonemployee members of the Corporation's Board of Directors under certain stock-based compensation arrangements if the conversion is dilutive.

The following table reconciles the numerator and denominator for basic and diluted earnings per common share:

years ended December 31 (add 000)	**2016**	2015	2014
Net earnings from continuing operations attributable to Martin Marietta	**$ 425,386**	$288,792	$155,638
Less: Distributed and undistributed earnings attributable to unvested awards	**1,775**	1,252	647
Basic and diluted net earnings attributable to common shareholders from continuing operations attributable to Martin Marietta	**423,611**	287,540	154,991
Basic and diluted net loss attributable to common shareholders from discontinued operations	**–**	–	(37)
Basic and diluted net earnings attributable to common shareholders attributable to Martin Marietta	**$ 423,611**	$287,540	$154,954
Basic weighted-average common shares outstanding	**63,610**	66,770	56,854
Effect of dilutive employee and director awards	**251**	250	234
Diluted weighted-average common shares outstanding	**63,861**	67,020	57,088

New Accounting Pronouncements. The Financial Accounting Standards Board ("FASB") issued an accounting standard update on accounting for stock compensation. The new standard is effective January 1, 2017 and requires all excess tax benefits and tax deficiencies to be recorded as income tax benefit or expense in the income statement in the period the awards vest or are settled as a discrete item. Additionally, any excess tax benefits will be reflected as an operating activity in the statement of cash flows. Further, any shares withheld for personal income taxes will be classified as a financing activity in the statement of cash flows. Although the adoption of the new standard does not have a cumulative effect, it will create volatility in the Corporation's income tax rate in periods when share-based compensation awards either vest or are exercised.

The FASB issued an accounting standard update that amends the accounting guidance on revenue recognition. The new standard intends to provide a more robust framework for addressing revenue issues, improve comparability of revenue recognition practices and improve disclosure requirements. The new standard is effective January 1, 2018 and can be applied on a full retrospective or modified retrospective approach. The Corporation has completed its initial assessment of the provisions of the new standard and, at this time, does not expect the impact to be material to its results of operations.

The FASB issued an accounting standard update on accounting for leases. The new standard requires lease rights and obligations arising from lease contracts, including existing and new arrangements, to be recognized as assets and liabilities on the balance sheet. The standard also requires additional disclosures by lessees and contains targeted changes to accounting by lessors. The new standard is effective January 1, 2019, with early adoption permitted. The guidance is required to be adopted at the earliest period presented using a modified retrospective approach. The Corporation is currently assessing the impact of the updated standard on the Corporation's financial statements. The Corporation believes the updated standard will have a material effect on its balance sheet but has not quantified the impact at this time.

The FASB issued an accounting standard update on the classification of certain cash receipts and payments in the statement of cash flows intended to reduce diversity in practice. The guidance is effective January 1, 2018, with early adoption permitted. The guidance is to be applied retrospectively to all periods presented, but may be applied prospectively if retrospective application would be impracticable. The Corporation is currently evaluating the effect of the standard on its consolidated statements of cash flows.

Note B: Goodwill and Other Intangible Assets

The following table shows the changes in goodwill by reportable segment and in total:

December 31 (add 000)	Mid-America Group	Southeast Group	West Group	Cement	Total
			2016		
Balance at beginning of period	**$281,403**	**$50,346**	**$871,220**	**$865,266**	**$2,068,235**
Acquisitions	**–**	**–**	**91,174**	**–**	**91,174**
Divestitures	**–**	**–**	**(72)**	**–**	**(72)**
Balance at end of period	**$281,403**	**$50,346**	**$962,322**	**$865,266**	**$2,159,337**
			2015		
Balance at beginning of period	$282,117	$50,346	$852,436	$883,900	$2,068,799
Acquisitions	–	–	8,464	–	8,464
Adjustments to purchase price allocations	–	–	15,538	(18,634)	(3,096)
Divestitures	(714)	–	(5,218)	–	(5,932)
Balance at end of period	$281,403	$50,346	$871,220	$865,266	$2,068,235

Intangible assets subject to amortization consist of the following:

December 31 (add 000)	Gross Amount	Accumulated Amortization	Net Balance
		2016	
Noncompetition agreements	**$ 6,274**	**$ (6,106)**	**$ 168**
Customer relationships	**45,755**	**(13,636)**	**32,119**
Operating permits	**455,095**	**(19,493)**	**435,602**
Use rights and other	**16,946**	**(9,239)**	**7,707**
Trade names	**12,800**	**(5,681)**	**7,119**
Total	**$ 536,870**	**$ (54,155)**	**$ 482,715**
		2015	
Noncompetition agreements	$ 6,274	$ (6,069)	$ 205
Customer relationships	35,805	(10,448)	25,357
Operating permits	450,419	(12,294)	438,125
Use rights and other	16,746	(8,030)	8,716
Trade names	12,800	(3,408)	9,392
Total	$ 522,044	$ (40,249)	$ 481,795

Intangible assets deemed to have an indefinite life and not being amortized consist of the following:

December 31 (add 000)	Aggregates Business	Cement	Magnesia Specialties	Total
		2016		
Operating permits	**$ 6,600**	**$ –**	**$ –**	**$ 6,600**
Use rights	**10,015**	**9,137**	**–**	**19,152**
Trade names	**280**	**–**	**2,565**	**2,845**
Total	**$16,895**	**$ 9,137**	**$ 2,565**	**$ 28,597**
		2015		
Operating permits	$ 6,600	$ –	$ –	$ 6,600
Use rights	10,175	9,137	–	19,312
Trade names	280	–	2,565	2,845
Total	$17,055	$ 9,137	$ 2,565	$ 28,757

During 2016, the Corporation acquired $15,134,000 of intangibles, consisting of the following:

(add 000, except year data)	Amount	Weighted-average amortization period
Subject to amortization:		
Customer relationships	$ 9,950	10.3 years
Operating permits	4,984	40.6 years
Other	200	1.5 years
Total	$ 15,134	20.2 years

Total amortization expense for intangible assets for the years ended December 31, 2016, 2015 and 2014 was $13,922,000, $13,962,000 and $9,311,000, respectively.

The estimated amortization expense for intangible assets for each of the next five years and thereafter is as follows:

(add 000)	
2017	$ 14,375
2018	13,417
2019	12,107
2020	11,727
2021	11,021
Thereafter	420,068
Total	$ 482,715

Note C: Business Combinations

In the first quarter 2016, the Corporation acquired the outstanding stock of Rocky Mountain Materials and Asphalt, Inc. and Rocky Mountain Premix, Inc. The acquisition provides more than 500 million tons of mineral reserves and expands the Corporation's presence along the Front Range of the Rocky Mountains, home to 80% of Colorado's population. The acquired operations are reported through the West Group. The Corporation has recorded preliminary fair values of the assets acquired and liabilities assumed; however, the transaction purchase consideration is subject to a normal post-closing working capital adjustment. Therefore, the measurement period for accounts receivable and goodwill remains open as of December 31, 2016.

During the third quarter 2016, the Corporation acquired the remaining interest in Ratliff Ready-Mix, L.P. ("Ratliff"), which operates ready mixed concrete plants in central Texas. These operations are reported in the West Group. Prior to the acquisition, the Corporation owned a 40% interest in Ratliff which was accounted for under the equity method. The Corporation was required to remeasure the existing 40% interest in Ratliff at fair value upon closing of the transaction, resulting in a gain of $5,863,000, which is recorded in other nonoperating income, net. The Corporation recorded preliminary fair values of the assets acquired and liabilities assumed; however, certain amounts are subject to change upon review of the seller's final tax return. Therefore, the measurement period for deferred income tax accounts and goodwill remains open as of December 31, 2016.

The impact of these acquisitions on the operating results was not considered material; therefore, pro forma financial information is not included.

Note D: Accounts Receivable, Net

December 31 (add 000)	**2016**	2015
Customer receivables	**$ 456,508**	$ 408,551
Other current receivables	**7,668**	9,310
	464,176	417,861
Less allowances	**(6,266)**	(6,940)
Total	**$ 457,910**	$ 410,921

Of the total accounts receivable, net, balances, $2,578,000 and $3,794,000 at December 31, 2016 and 2015, respectively, were due from unconsolidated affiliates.

Note E: Inventories, Net

December 31 (add 000)	2016	2015
Finished products	**$ 479,291**	$ 433,649
Products in process and raw materials	**61,171**	55,194
Supplies and expendable parts	**116,024**	110,882
	656,486	599,725
Less allowances	**(134,862)**	(130,584)
Total	**$ 521,624**	$ 469,141

Note F: Property, Plant and Equipment, Net

December 31 (add 000)	2016	2015
Land and land improvements	**$ 915,158**	$ 865,700
Mineral reserves and interests	**1,114,560**	1,001,295
Buildings	**151,115**	144,076
Machinery and equipment	**3,766,975**	3,473,826
Construction in progress	**167,722**	128,301
	6,115,530	5,613,198
Less accumulated depreciation, depletion and amortization	**(2,692,135)**	(2,457,198)
Total	**$ 3,423,395**	$ 3,156,000

The gross asset value and accumulated amortization for machinery and equipment recorded under capital leases at December 31 were as follows:

(add 000)	2016	2015
Machinery and equipment under capital leases	**$ 23,117**	$ 19,379
Less accumulated amortization	**(8,077)**	(5,102)
Total	**$ 15,040**	$ 14,277

Depreciation, depletion and amortization expense related to property, plant and equipment was $268,935,000, $246,874,000 and $211,242,000 for the years ended December 31, 2016, 2015 and 2014, respectively. Depreciation, depletion and amortization expense includes amortization of machinery and equipment under capital leases.

Interest cost of $3,543,000, $5,832,000 and $8,033,000 was capitalized during 2016, 2015 and 2014, respectively.

At December 31, 2016 and 2015, $58,332,000 and $58,937,000, respectively, of the Aggregates business' net property, plant and equipment were located in foreign countries, namely the Bahamas and Canada.

Note G: Long-Term Debt

December 31 (add 000)	2016	2015
6.6% Senior Notes, due 2018	**$ 299,483**	$ 299,113
7% Debentures, due 2025	**124,090**	124,002
6.25% Senior Notes, due 2037	**227,975**	227,917
4.25% Senior Notes, due 2024	**395,252**	394,690
Floating Rate Notes, due 2017, interest rate of 2.10% and 1.71% at December 31, 2016 and 2015, respectively	**299,033**	298,868
Term Loan Facility, interest rate of 1.86% at December 31, 2015	**–**	222,521
Revolving Facility, due 2021, interest rate of 1.86% at December 31, 2016	**160,000**	–
Trade Receivable Facility, interest rate of 1.34% at December 31, 2016	**180,000**	–
Other notes	**356**	1,663
Total	**1,686,189**	1,568,774
Less current maturities	**(180,036)**	(18,713)
Long-term debt	**$ 1,506,153**	$ 1,550,061

The Corporation's 6.6% Senior Notes due 2018, 7% Debentures due 2025, 6.25% Senior Notes due 2037, 4.25% Senior Notes due 2024 and Floating Rate Notes due 2017 (collectively, the "Senior Notes") are senior unsecured obligations of the Corporation, ranking equal in right of payment with the Corporation's existing and future unsubordinated indebtedness. Upon a change-of-control repurchase event and a resulting below-investment-grade credit rating, the Corporation would be required to make an offer to repurchase all outstanding Senior Notes, with the exception of the 7% Debentures due 2025, at a price in cash equal to 101% of the principal amount of the Senior Notes, plus any accrued and unpaid interest to, but not including, the purchase date.

The Senior Notes are carried net of original issue discount, which is being amortized by the effective interest method over the life of the issue. The Senior Notes are redeemable prior to their respective maturity dates at a make-whole redemption price. The principal amount, effective interest rate and maturity date for the Corporation's Senior Notes are as follows:

	Principal Amount (add 000)	Effective Interest Rate	Maturity Date
6.6% Senior Notes	$300,000	6.81%	April 15, 2018
7% Debentures	$125,000	7.12%	December 1, 2025
6.25% Senior Notes	$230,000	6.45%	May 1, 2037
4.25% Senior Notes	$400,000	4.25%	July 2, 2024
Floating Rate Notes	$300,000	Three-month LIBOR+1.10%	June 30, 2017

In connection with the issuance of its $300,000,000 Floating Rate Senior Notes due 2017 (the "Floating Rate Notes") and its $400,000,000 4.25% Senior Notes due 2024 (the "4.25% Senior Notes"), the Corporation entered into an indenture, between the Corporation and Regions Bank, as trustee, and a Registration Rights Agreement, among the Corporation, Deutsche Bank Securities, Inc. and J.P. Morgan Securities, LLC, as representatives of the several initial purchasers named in Schedule I to the purchase agreement. The Floating Rate Notes bear interest at a rate equal to the three-month London Interbank Offered Rate ("LIBOR") plus 1.10% and may not be redeemed prior to maturity. The 4.25% Senior Notes may be redeemed in whole or in part prior to their maturity at a make-whole redemption price. During the last 3 months prior to maturity, the 4.25% Senior Notes can be redeemed at par plus accrued and unpaid interest.

On December 5, 2016, the Corporation entered into a new credit agreement with JPMorgan Chase Bank, N.A., as Administrative Agent, Branch Banking and Trust Company ("BB&T"), Deutsche Bank Securities, Inc., SunTrust Bank, and Wells Fargo Bank, N.A., as Co-Syndication Agents, and the lenders party thereto (the "Credit Agreement"), which provides for a $700,000,000 five-year senior unsecured revolving facility (the "Revolving Facility"). Borrowings under the Revolving Facility bear interest, at the Corporation's option, at rates based upon LIBOR or a base rate, plus, for each rate, a margin determined in accordance with a ratings-based pricing grid. The Revolving Facility replaced the Corporation's credit agreement dated as of November 9, 2013 with JPMorgan Chase Bank, N.A., as Administrative Agent, BB&T, Deutsche Bank Securities, Inc., SunTrust Bank, and Wells Fargo Bank, N.A., as Co-Syndication Agents, and the lenders party thereto (the "Former Credit Agreement"). The Former Credit Agreement had provided for a term loan and a revolving facility under which $210,937,500 and $0, respectively, were outstanding prior to entering into the Revolving Facility. The Revolving Facility is syndicated with the following banks:

Lender (add 000)	**Revolving Facility Commitment**
JPMorgan Chase Bank, N.A.	$ 92,800
BB&T	92,800
Deutsche Bank AG New York Branch	92,800
SunTrust Bank	92,800
Wells Fargo Bank, N.A.	92,800
PNC Bank, National Association	62,000
Regions Bank	62,000
The Northern Trust Company	62,000
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	30,000
Comerica Bank	20,000
Total	$ 700,000

The Corporation's Credit Agreement requires the Corporation's ratio of consolidated net debt-to-consolidated earnings before interest, taxes, depreciation, depletion and amortization ("EBITDA"), as defined, for the trailing-twelve months (the "Ratio") to not exceed 3.50x as of the end of any fiscal quarter, provided that the Corporation may exclude from the Ratio debt incurred in connection with certain acquisitions during the quarter or the three preceding quarters so long as the Ratio calculated without such exclusion does not exceed 3.75x. Additionally, if no amounts are outstanding under both the Revolving Facility and the trade receivable securitization facility (discussed later), consolidated debt, including debt for which the Corporation is a co-borrower (see Note N), may be reduced by the Corporation's unrestricted cash and cash equivalents in excess of $50,000,000, such reduction not to exceed $200,000,000, for purposes of the covenant calculation. The Corporation was in compliance with this Ratio at December 31, 2016.

The Revolving Facility expires on December 5, 2021, with any outstanding principal amounts, together with interest accrued thereon, due in full on that date. Available borrowings under the Revolving Facility are reduced by any outstanding letters of credit issued by the Corporation under the Revolving Facility. At December 31, 2016 and 2015, the Corporation had $2,507,000 of outstanding letters of credit issued under the Revolving Facility. The Corporation paid the bank group an upfront loan commitment fee that is being amortized over the life of the Revolving Facility. The Revolving Facility includes an annual facility fee.

The Corporation, through a wholly-owned special-purpose subsidiary, has a trade receivable securitization facility (the "Trade Receivable Facility"). On September 28, 2016, the Corporation amended the Trade Receivable Facility to increase the borrowing capacity from $250,000,000 to $300,000,000 and extend the maturity to September 27, 2017. The Trade Receivable Facility, with SunTrust Bank, Regions Bank, PNC Bank, N.A., The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, and certain other lenders that may become a party to the facility from time to time, is backed by eligible trade receivables, as defined. Borrowings are limited to the lesser of the facility limit or the borrowing base, as defined, of $333,302,000 and $282,258,000 at December 31, 2016 and 2015, respectively. These receivables are originated by the Corporation and then sold or contributed to the wholly-owned special-purpose subsidiary. The Corporation continues to be responsible for the servicing and administration of the receivables purchased by the wholly-owned special-purpose subsidiary. Borrowings under the Trade Receivable Facility bear interest at a rate equal to one-month LIBOR plus 0.725%, subject to change in the event that this rate no longer reflects the lender's cost of lending. The Trade Receivable Facility contains a cross-default provision to the Corporation's other debt agreements.

The Corporation's long-term debt maturities for the five years following December 31, 2016, and thereafter are:

(add 000)	
2017	$ 180,035
2018	299,534
2019	55
2020	60
2021	459,098
Thereafter	747,407
Total	$ 1,686,189

The Corporation's $300,000,000 Floating Rate Notes mature June 30, 2017. The Corporation has classified these obligations as noncurrent long-term debt on the consolidated balance sheets as it has the intent to refinance the notes on a long-term basis. For the debt maturity schedule, the notes are included in 2021.

The Corporation has a $5,000,000 short-term line of credit. No amounts were outstanding under this line of credit at December 31, 2016 or 2015.

Accumulated other comprehensive loss includes the unamortized value of terminated forward starting interest rate swap agreements. For the years ended December 31, 2016, 2015 and 2014, the Corporation recognized $1,367,000, $1,280,000 and $1,188,000, respectively, as additional interest expense. The ongoing amortization of the terminated value of the forward starting interest rate swap agreements will increase annual interest expense by approximately $1,400,000 until the maturity of the 6.6% Senior Notes in 2018.

Note H: Financial Instruments

The Corporation's financial instruments include temporary cash investments, accounts receivable, notes receivable, bank overdraft, accounts payable, publicly-registered long-term notes, debentures and other long-term debt.

Temporary cash investments are placed primarily in money market funds and money market demand deposit accounts with the following financial institutions: BB&T, Comerica Bank and Regions Bank. The Corporation's cash equivalents have maturities of less than three months. Due to the short maturity of these investments, they are carried on the consolidated balance sheets at cost, which approximates fair value.

Accounts receivable are due from a large number of customers, primarily in the construction industry, and are dispersed across wide geographic and economic regions. However, accounts receivable are more heavily concentrated in certain states, namely Texas, Colorado, North Carolina, Iowa and Georgia. The estimated fair values of accounts receivable approximate their carrying amounts.

Notes receivable are primarily promissory notes with customers and are not publicly traded. Management estimates that the fair value of notes receivable approximates its carrying amount.

The bank overdraft represents amounts to be funded to financial institutions for checks that have cleared the bank. The estimated fair value of the bank overdraft approximates its carrying value.

Accounts payable represent amounts owed to suppliers and vendors. The estimated fair value of accounts payable approximates its carrying amount due to the short-term nature of the payables.

The carrying values and fair values of the Corporation's long-term debt were $1,686,189,000 and $1,752,338,000, respectively, at December 31, 2016 and $1,568,774,000 and $1,625,193,000, respectively, at December 31, 2015. The estimated fair value of the Corporation's publicly-registered long-term debt was estimated based on Level 2 of the fair value hierarchy using quoted market prices. The estimated fair values of other borrowings, which primarily represent variable-rate debt, approximate their carrying amounts as the interest rates reset periodically.

Note I: Income Taxes

The components of the Corporation's tax expense (benefit) on income from continuing operations are as follows:

years ended December 31 (add 000)	2016	2015	2014
Federal income taxes:			
Current	**$ 97,975**	$ 20,627	$ 35,313
Deferred	**68,899**	85,295	46,616
Total federal income taxes	**166,874**	105,922	81,929
State income taxes:			
Current	**15,189**	18,153	10,307
Deferred	**(1,149)**	930	3,376
Total state income taxes	**14,040**	19,083	13,683
Foreign income taxes:			
Current	**1,064**	99	1,262
Deferred	**(394)**	(241)	(2,027)
Total foreign income taxes	**670**	(142)	(765)
Total taxes on income	**$181,584**	$124,863	$ 94,847

The increase in 2016 federal current tax expense is primarily attributable to an increase in earnings; while, in comparison to 2015, the benefit from the utilization of net operating loss ("NOL") carryforwards acquired in the 2014 purchase of TXI lowered current tax expense. The utilization of NOL carryforwards primarily attributed to the increase in federal deferred tax expense in 2015, although some benefits were also recognized in 2016 and 2014. For the years ended December 31, 2016, 2015 and 2014, the benefit related to the utilization of federal NOL carryforwards, reflected in current tax expense, was $11,852,000, $156,554,000 and $16,940,000, respectively.

For the years ended December 31, 2016 and 2014, excess tax benefits attributable to stock-based compensation transactions that were recorded to shareholders' equity amounted to $6,792,000 and $2,508,000, respectively. For the year ended December 31, 2015, the realized tax benefit for stock-based compensation transactions was $871,000 less than the amounts estimated during the vesting periods, resulting in a decrease in the pool of excess tax credits.

For the year ended December 31, 2016, foreign pretax earnings were $3,865,000. For the years ended December 31, 2015 and 2014, foreign pretax loss was $1,175,000 and $10,557,000, respectively.

The Corporation's effective income tax rate on continuing operations varied from the statutory United States income tax rate because of the following permanent tax differences:

years ended December 31	2016	2015	2014
Statutory tax rate	**35.0%**	35.0%	35.0%
(Reduction) increase resulting from:			
Effect of statutory depletion	**(5.4)**	(7.8)	(9.6)
State income taxes, net of federal tax benefit	**1.5**	3.0	3.6
Domestic production deduction	**(2.0)**	(0.1)	(0.9)
Transfer pricing	**–**	–	(0.2)
Goodwill write off	**–**	0.4	3.9
Foreign tax rate differential	**(0.1)**	–	1.3
Disallowed compensation	**0.2**	0.2	3.7
Transaction costs	**0.1**	–	2.4
Other items	**0.6**	(0.5)	(1.1)
Effective income tax rate	**29.9%**	30.2%	38.1%

For income tax purposes, the statutory depletion deduction is calculated as a percentage of sales, subject to certain limitations. Due to these limitations, the impact of changes in the sales volumes and earnings may not proportionately affect the Corporation's statutory depletion deduction and the corresponding impact on the effective income tax rate on continuing operations. The growth in non-depletable income has resulted in a reduced impact on the effective income tax rate related to the statutory depletion deduction.

The state tax impact on the effective income tax rate has decreased due to changes in apportionment of taxable income to states with lower tax rates and the reduction in certain states' statutory tax rates.

The Corporation is entitled to receive a 9% tax deduction related to income from domestic (i.e., United States) production activities. The deduction reduced income tax expense and increased consolidated net earnings by $13,583,000, or $0.21 per diluted share, in 2016; $222,000, or less than $0.01 per diluted share, in 2015; and $3,239,000, or $0.05 per diluted share, in 2014. The impact on the 2015 and 2014 effective income tax rate was limited by the significant utilization of NOL carryforwards.

In 2015 and 2014, the Corporation wrote off goodwill not deductible for income tax purposes as part of the sale of certain operations. In addition, the Corporation incurred certain compensation and transaction expenses, primarily in 2014 in connection with the TXI acquisition, that are not deductible for income tax purposes and therefore increased the effective income tax rate.

The principal components of the Corporation's deferred tax assets and liabilities are as follows:

December 31 (add 000)	**Deferred Assets (Liabilities)**	
	2016	2015
Deferred tax assets related to:		
Employee benefits	**$ 61,462**	$ 56,302
Inventories	**71,490**	75,907
Valuation and other reserves	**38,206**	42,857
Net operating loss carryforwards	**10,507**	11,448
Accumulated other comprehensive loss	**82,793**	67,757
AMT credit carryforward	**2,771**	48,197
Gross deferred tax assets	**267,229**	302,468
Valuation allowance on deferred tax assets	**(8,521)**	(8,967)
Total net deferred tax assets	**258,708**	293,501
Deferred tax liabilities related to:		
Property, plant and equipment	**(635,576)**	(593,767)
Goodwill and other intangibles	**(268,999)**	(266,436)
Other items, net	**(17,152)**	(16,757)
Total deferred tax liabilities	**(921,727)**	(876,960)
Net deferred tax liability	**$ (663,019)**	$ (583,459)

The increase in the net deferred tax liability is primarily a result of deferred taxes recorded in conjunction with stock acquisitions and the utilization of Alternative Minimum Tax ("AMT") credit carryforwards.

Deferred tax assets for employee benefits result from the temporary differences between the deductions for pension and postretirement obligations, incentive compensation and stock-based compensation transactions. For financial reporting purposes, such amounts are expensed based on authoritative accounting guidance. For income tax purposes, amounts related to pension and postretirement obligations and incentive compensation are deductible as funded. Amounts related to stock-based compensation transactions are deductible for income tax purposes upon vesting or exercise of the underlying award.

The Corporation had domestic federal and state NOL carryforwards of $220,532,000 (federal $0; state $220,532,000) and $273,251,000 (federal $33,863,000; state $239,388,000) at December 31, 2016 and 2015, respectively. These carryforwards have various expiration dates through 2036. At December 31, 2016 and 2015, deferred tax assets associated with these carryforwards were $10,507,000 and $11,448,000, respectively, net of unrecognized tax benefits, for which valuation allowances of $8,303,000 and $8,690,000, respectively, were recorded. The Corporation recorded a $3,714,000 valuation reserve in 2015 for certain domestic NOL carryforwards, which was driven by the sale of the California cement operations. The Corporation also had domestic tax credit carryforwards of $1,441,000 and $3,179,000 at December 31, 2016 and 2015, respectively, which expire in 2018. At December 31, 2016 and 2015, deferred tax assets associated with these carryforwards were $937,000 and $2,509,000, respectively, net of unrecognized tax benefits, for which valuation allowances of $218,000 and $277,000, respectively, were recorded. At December 31, 2016, the Corporation also had an AMT credit carryforward of $17,192,000, which does not expire. The deferred tax asset associated with this carryforward, net of unrecognized tax benefits, was $2,771,000.

Deferred tax liabilities for property, plant and equipment result from accelerated depreciation methods being used for income tax purposes as compared with the straight-line method for financial reporting purposes.

Deferred tax liabilities related to goodwill and other intangibles reflect the cessation of goodwill amortization for financial reporting purposes, while amortization continues for income tax purposes.

The Corporation provides deferred taxes, as required, on the undistributed net earnings of all non-U.S. subsidiaries for which the indefinite reversal criterion has not been met. The Corporation expects to reinvest permanently the earnings from its wholly-owned Canadian subsidiary and accordingly, has not provided deferred taxes on the subsidiary's undistributed net earnings. The wholly-owned Canadian subsidiary's undistributed net earnings are estimated to be $35,392,000 at December 31, 2016. The unrecognized deferred tax liability for temporary differences related to the investment in the wholly-owned Canadian subsidiary is estimated to be $1,872,000 for the year ended December 31, 2016.

The following table summarizes the Corporation's unrecognized tax benefits, excluding interest and correlative effects:

years ended December 31 (add 000)	**2016**	2015	2014
Unrecognized tax benefits at beginning of year	**$ 18,727**	$ 21,107	$ 11,826
Gross increases – tax positions in prior years	**2,401**	3,079	2,075
Gross decreases – tax positions in prior years	**(1,924)**	(3,512)	(203)
Gross increases – tax positions in current year	**4,650**	4,978	3,369
Gross decreases – tax positions in current year	**(2,047)**	(594)	(51)
Lapse of statute of limitations	**–**	(6,331)	(1,872)
Unrecognized tax benefits assumed with acquisition	**–**	–	5,963
Unrecognized tax benefits at end of year	**$ 21,807**	$ 18,727	$ 21,107

For the year ended December 31, 2014, the unrecognized tax benefits assumed with acquisition represented positions acquired with TXI.

At December 31, 2016, 2015 and 2014, unrecognized tax benefits of $11,603,000, $7,975,000 and $9,362,000, respectively, related to interest accruals and permanent income tax differences, net of federal tax benefits, would have favorably affected the Corporation's effective income tax rate if recognized.

Unrecognized tax benefits are reversed as a discrete event if an examination of applicable tax returns is not initiated by a federal or state tax authority within the statute of limitations or upon effective settlement with federal or state tax authorities. Management believes its accrual for unrecognized tax benefits is sufficient to cover uncertain tax positions reviewed during audits by taxing authorities. The Corporation anticipates that it is reasonably possible that its unrecognized tax benefits may decrease up to $3,935,000, excluding indirect benefits, during the twelve months ending December 31, 2017 due to the expiration of the statute of limitations for the 2012 and 2013 tax years.

For the years ended December 31, 2015 and 2014, $2,364,000 or $0.04 per diluted share, and $687,000 or $0.01 per diluted share, respectively, were reversed into income upon the statute of limitations expiration for the 2010 and 2011 tax years.

The Corporation's open tax years subject to federal, state or foreign examinations are 2010 through 2016.

Note J: Retirement Plans, Postretirement and Postemployment Benefits

The Corporation sponsors defined benefit retirement plans that cover substantially all employees. Additionally, the Corporation provides other postretirement benefits for certain employees, including medical benefits for retirees and their spouses and retiree life insurance. The Corporation also provides certain benefits, such as disability benefits, to former or inactive employees after employment but before retirement.

The measurement date for the Corporation's defined benefit plans, postretirement benefit plans and postemployment benefit plans is December 31.

Defined Benefit Retirement Plans. Retirement plan assets are invested in listed stocks, bonds, hedge funds, real estate and cash equivalents. Defined retirement benefits for salaried employees are based on each employee's years of service and average compensation for a specified period of time before retirement. Defined retirement benefits for hourly employees are generally stated amounts for specified periods of service.

The Corporation sponsors a Supplemental Excess Retirement Plan ("SERP") that generally provides for the payment of retirement benefits in excess of allowable Internal Revenue Code limits. The SERP generally provides for a lump-sum payment of vested benefits. When these benefit payments exceed the sum of the service and interest costs for the SERP during a year, the Corporation recognizes a pro-rata portion of the SERP's unrecognized actuarial loss as settlement expense.

The net periodic retirement benefit cost of defined benefit plans includes the following components:

years ended December 31 (add 000)	**2016**	2015	2014
Components of net periodic benefit cost:			
Service cost	**$ 22,167**	$ 23,001	$ 17,125
Interest cost	**35,879**	33,151	28,935
Expected return on assets	**(37,699)**	(36,385)	(32,661)
Amortization of:			
Prior service cost	**350**	422	445
Actuarial loss	**12,074**	17,159	4,045
Transition asset	**(1)**	(1)	(1)
Settlement charge	**124**	–	–
Termination benefit charge	**764**	2,085	13,652
Net periodic benefit cost	**$ 33,658**	$ 39,432	$ 31,540

The expected return on assets is based on the fair value of the plan assets. The termination benefit charge represents the increased benefits payable to former TXI executives as part of their change-in-control agreements.

The Corporation recognized the following amounts in consolidated comprehensive earnings:

years ended December 31 (add 000)	2016	2015	2014
Actuarial loss	**$ 52,028**	$ 9,916	$105,546
Amortization of:			
Prior service cost	**(350)**	(422)	(445)
Actuarial loss	**(12,074)**	(17,159)	(4,045)
Transition asset	**1**	1	1
Special plan termination benefits	**(764)**	(2,085)	–
Settlement charge	**(124)**	–	–
Net prior service cost	**–**	2,338	–
Total	**$ 38,717**	$ (7,411)	$101,057

Accumulated other comprehensive loss includes the following amounts that have not yet been recognized in net periodic benefit cost:

December 31	2016		2015	
(add 000)	**Gross**	**Net of tax**	Gross	Net of tax
Prior service cost	**$ 425**	**$ 261**	$ 1,028	$ 628
Actuarial loss	**218,056**	**133,083**	178,770	108,874
Transition asset	**(7)**	**(4)**	(8)	(5)
Total	**$218,474**	**$133,340**	$179,790	$ 109,497

The prior service cost, actuarial loss and transition asset expected to be recognized in net periodic benefit cost during 2017 are $311,000 (net of deferred taxes of $120,000), $14,098,000 (net of deferred taxes of $5,438,000) and $1,000, respectively. These amounts are included in accumulated other comprehensive loss at December 31, 2016.

The defined benefit plans' change in projected benefit obligation is as follows:

years ended December 31 (add 000)	2016	2015
Change in projected benefit obligation:		
Net projected benefit obligation at beginning of year	**$ 754,543**	$ 753,975
Service cost	**22,167**	23,001
Interest cost	**35,879**	33,151
Actuarial loss (gain)	**49,760**	(27,119)
Gross benefits paid	**(30,500)**	(30,803)
Nonrecurring termination benefit	**–**	2,338
Net projected benefit obligation at end of year	**$ 831,849**	$ 754,543

The Corporation's change in plan assets, funded status and amounts recognized on the Corporation's consolidated balance sheets are as follows:

years ended December 31 (add 000)	2016	2015
Change in plan assets:		
Fair value of plan assets at beginning of year	**$ 546,512**	$ 524,042
Actual return on plan assets, net	**35,432**	(651)
Employer contributions	**44,763**	53,924
Gross benefits paid	**(30,500)**	(30,803)
Fair value of plan assets at end of year	**$ 596,207**	$ 546,512

December 31 (add 000)	2016	2015
Funded status of the plan at end of year	**$ (235,642)**	$ (208,031)
Accrued benefit cost	**$ (235,642)**	$ (208,031)

December 31 (add 000)	2016	2015
Amounts recognized on consolidated balance sheets consist of:		
Current liability	**$ (6,223)**	$ (6,048)
Noncurrent liability	**(229,419)**	(201,983)
Net amount recognized at end of year	**$(235,642)**	$ (208,031)

The accumulated benefit obligation for all defined benefit pension plans was $752,659,000 and $688,017,000 at December 31, 2016 and 2015, respectively.

Benefit obligations and fair value of plan assets for pension plans with accumulated benefit obligations in excess of plan assets are as follows:

December 31 (add 000)	2016	2015
Projected benefit obligation	**$ 831,849**	$ 754,543
Accumulated benefit obligation	**$ 752,659**	$ 688,017
Fair value of plan assets	**$ 596,207**	$ 546,512

Weighted-average assumptions used to determine benefit obligations as of December 31 are:

	2016	2015
Discount rate	**4.29%**	4.67%
Rate of increase in future compensation levels	**4.50%**	4.50%

Weighted-average assumptions used to determine net periodic benefit cost for years ended December 31 are:

	2016	2015	2014
Discount rate	**4.67%**	4.25%	5.17%
Rate of increase in future compensation levels	**4.50%**	4.50%	5.00%
Expected long-term rate of return on assets	**7.00%**	7.00%	7.00%

The expected long-term rate of return on assets is based on a building-block approach, whereby the components are weighted based on the allocation of pension plan assets.

For 2016 and 2015, the Corporation estimated the remaining lives of participants in the pension plans using the RP-2014 Base Table. The Corporation used mortality improvement scale MP-2016 and BB-2D for the years 2016 and 2015, respectively. The change in mortality improvement scale in 2016 did not have a material impact on the projected benefit obligation. The white-collar table was used for salaried participants and the blue-collar table, reflecting the experience of the Corporation's participants, was used for hourly participants.

The target allocation for 2016 and the actual pension plan asset allocation by asset class are as follows:

	Percentage of Plan Assets		
	2016	**December 31**	
Asset Class	Target Allocation	**2016**	2015
Equity securities	54%	**57%**	55%
Debt securities	30%	**28%**	31%
Hedge funds	8%	**7%**	7%
Real estate	8%	**8%**	7%
Total	100%	**100%**	100%

The Corporation's investment strategy is for approximately 50% of equity securities to be invested in mid-sized to large capitalization U.S. funds with the remaining to be invested in small capitalization, emerging markets and international funds. Debt securities, or fixed income investments, are invested in funds benchmarked to the Barclays U.S. Aggregate Bond Index.

The fair values of pension plan assets by asset class and fair value hierarchy level are as follows:

December 31 (add 000)	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**	**Total Fair Value**
	2016			
Equity securities:				
Mid-sized to large cap	**$ –**	**$ 169,176**	**$ –**	**$ 169,176**
Small cap, international and emerging growth funds	**–**	**169,678**	**–**	**169,678**
Debt securities:				
Core fixed income	**–**	**168,282**	**–**	**168,282**
Real estate	**–**	**–**	**44,890**	**44,890**
Hedge funds	**–**	**–**	**44,036**	**44,036**
Cash	**145**	**–**	**–**	**145**
Total	**$ 145**	**$ 507,136**	**$ 88,926**	**$ 596,207**
	2015			
Equity securities:				
Mid-sized to large cap	$ –	$ 156,008	$ –	$ 156,008
Small cap, international and emerging growth funds	–	144,405	–	144,405
Debt securities:				
Core fixed income	–	167,545	–	167,545
Real estate	15,479	–	23,242	38,721
Hedge funds	–	–	39,219	39,219
Cash	614	–	–	614
Total	$16,093	$ 467,958	$ 62,461	$ 546,512

Level 3 real estate investments are stated at estimated fair value, which 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. The fair values of real estate investments generally do not reflect transaction costs which may be incurred upon disposition of the real estate investments and do not necessarily represent the prices at which the real estate investments would be sold or repaid, since market prices of real estate investments can only be determined by negotiation between a willing buyer and seller. An independent valuation consultant is employed to determine the fair value of the real estate investments. The value of hedge funds is based on the values of the sub-fund investments. In determining the fair value of each sub-fund's investment, the hedge funds' Board of Trustees uses the values provided by the sub-funds and any other considerations that may, in its judgment, increase or decrease such estimated value.

The change in the fair value of pension plan assets valued using significant unobservable inputs (Level 3) is as follows:

years ended December 31 (add 000)	Real Estate	Hedge Funds
	2016	
Balance at beginning of year	**$ 23,242**	**$ 39,219**
Purchases, sales, settlements, net	**18,579**	**3,100**
Actual return on plan assets held at period end	**3,069**	**1,717**
Balance at end of year	**$ 44,890**	**$ 44,036**
	2015	
Balance at beginning of year	$ 20,363	$ 38,264
Actual return on plan assets held at period end	2,879	955
Balance at end of year	$ 23,242	$ 39,219

In 2016 and 2015, the Corporation made combined pension and SERP contributions of $44,763,000 and $53,924,000, respectively. The Corporation currently estimates that it will contribute $32,537,000 to its pension and SERP plans in 2017.

The expected benefit payments to be paid from plan assets for each of the next five years and the five-year period thereafter are as follows:

(add 000)	
2017	$ 36,563
2018	$ 38,452
2019	$ 40,792
2020	$ 42,981
2021	$ 44,403
Years 2022 - 2026	$ 250,080

Postretirement Benefits. The net periodic postretirement benefit credit for postretirement plans includes the following components:

years ended December 31 (add 000)	**2016**	2015	2014
Components of net periodic benefit credit:			
Service cost	**$ 85**	$ 137	$ 206
Interest cost	**863**	928	1,164
Amortization of:			
Prior service credit	**(1,959)**	(2,302)	(3,255)
Actuarial gain	**(499)**	(309)	(266)
Settlement credit	**(9)**	–	–
Total net periodic benefit credit	**$ (1,519)**	$ (1,546)	$ (2,151)

The Corporation recognized the following amounts in consolidated comprehensive earnings:

years ended December 31 (add 000)	**2016**	2015	2014
Actuarial loss (gain)	**$ 686**	$ (626)	$ (3,026)
Net prior service credit	**(1,326)**	–	–
Settlement credit	**9**	–	–
Amortization of:			
Prior service credit	**1,959**	2,302	3,255
Actuarial gain	**499**	309	266
Total	**$ 1,827**	$ 1,985	$ 495

Accumulated other comprehensive loss includes the following amounts that have not yet been recognized in net periodic benefit credit or cost:

December 31 (add 000)	**2016** Gross	**2016** Net of tax	2015 Gross	2015 Net of tax
Prior service credit	**$ (4,153)**	**$ (2,551)**	$ (4,786)	$ (2,924)
Actuarial gain	**(3,857)**	**(2,369)**	(5,050)	(3,086)
Total	**$ (8,010)**	**$ (4,920)**	$ (9,836)	$ (6,010)

The prior service credit and actuarial gain expected to be recognized in net periodic benefit cost during 2017 is $1,741,000 (net of a deferred tax liability of $672,000) and $284,000 (net of a deferred tax liability of $110,000), respectively, and are included in accumulated other comprehensive loss at December 31, 2016.

The postretirement health care plans' change in benefit obligation is as follows:

years ended December 31 (add 000)	**2016**	2015
Change in benefit obligation:		
Net benefit obligation at beginning of year	**$ 23,408**	$ 25,086
Service cost	**85**	137
Interest cost	**863**	928
Participants' contributions	**2,616**	1,777
Actuarial loss (gain)	**688**	(627)
Gross benefits paid	**(5,743)**	(3,893)
Plan amendments	**(1,326)**	–
Net benefit obligation at end of year	**$ 20,591**	$ 23,408

The Corporation's change in plan assets, funded status and amounts recognized on the Corporation's consolidated balance sheets are as follows:

years ended December 31 (add 000)	2016	2015
Change in plan assets:		
Fair value of plan assets at beginning of year	**$ –**	$ –
Employer contributions	**3,127**	2,116
Participants' contributions	**2,616**	1,777
Gross benefits paid	**(5,743)**	(3,893)
Fair value of plan assets at end of year	**$ –**	$ –

December 31 (add 000)	2016	2015
Funded status of the plan at end of year	**$ (20,591)**	$ (23,408)
Accrued benefit cost	**$ (20,591)**	$ (23,408)

December 31 (add 000)	2016	2015
Amounts recognized on consolidated balance sheets consist of:		
Current liability	**$ (3,070)**	$ (2,120)
Noncurrent liability	**(17,521)**	(21,288)
Net amount recognized at end of year	**$ (20,591)**	$ (23,408)

Weighted-average assumptions used to determine the postretirement benefit obligations as of December 31 are:

	2016	2015
Discount rate	**3.78%**	4.25%

Weighted-average assumptions used to determine the postretirement benefit cost for the years ended December 31 are:

	2016	2015	2014
Discount rate	**4.25%**	3.83%	4.42%

For 2016 and 2015, the Corporation estimated the remaining lives of participants in the postretirement plan using the RP-2014 Base Table. The Corporation used mortality improvement scale MP-2016 and BB-2D for the years 2016 and 2015, respectively.

Assumed health care cost trend rates at December 31 are:

	2016	2015
Health care cost trend rate assumed for next year	**7.0%**	7.0%
Rate to which the cost trend rate gradually declines	**5.0%**	5.0%
Year the rate reaches the ultimate rate	**2021**	2020

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one percentage-point change in assumed health care cost trend rates would have the following effects:

	One Percentage Point	
(add 000)	Increase	(Decrease)
Total service and interest cost components	$ 49	$ (42)
Postretirement benefit obligation	$1,051	$ (911)

The Corporation estimates that it will contribute $3,070,000 to its postretirement health care plans in 2017.

The total expected benefit payments to be paid by the Corporation, net of participant contributions, for each of the next five years and the five-year period thereafter are as follows:

(add 000)	
2017	$ 3,070
2018	$ 2,120
2019	$ 2,000
2020	$ 1,873
2021	$ 1,781
Years 2022 - 2026	$ 6,434

Defined Contribution Plans. The Corporation maintains defined contribution plans that cover substantially all employees. These plans, qualified under Section 401(a) of the Internal Revenue Code, are retirement savings and investment plans for the Corporation's salaried and hourly employees. Under certain provisions of these plans, the Corporation, at established rates, matches employees' eligible contributions. The Corporation's matching obligations were $13,235,000 in 2016, $12,444,000 in 2015 and $8,602,000 in 2014.

Postemployment Benefits. The Corporation had accrued postemployment benefits of $1,146,000 and $1,267,000 at December 31, 2016 and 2015, respectively.

Note K: Stock-Based Compensation

The shareholders approved, on May 19, 2016, the Martin Marietta Amended and Restated Stock-Based Award Plan. The Martin Marietta Materials, Inc. Stock-Based Award Plan, as amended from time to time (along with the Amended Omnibus Securities Award Plan, originally approved in 1994, the "Plans") is still effective for awards made prior to 2017. The Corporation has been authorized by the Board of Directors to repurchase shares of the Corporation's common stock for issuance under the stock-based award plans (see Note M).

The Corporation grants restricted stock awards under the Plans to a group of executive officers, key personnel and nonemployee Board of Directors. The vesting of certain restricted stock awards is based on certain performance criteria over a specified period of time. In addition, certain awards are granted to individuals to encourage retention and motivate key employees. These awards generally vest if the employee is continuously employed over a specified period of time and require no payment from the employee. Awards granted to nonemployee Board of Directors vest immediately.

Additionally, an incentive stock plan has been adopted under the Plans whereby certain participants may elect to use up to 50% of their annual incentive compensation to acquire units representing shares of the Corporation's common stock at a 20% discount to the market value on the date of the incentive compensation award. Certain executive officers are required to participate in the incentive stock plan at certain minimum levels. Participants earn the right to receive unrestricted shares of common stock in an amount equal to their respective units generally at the end of a 34-month period of additional employment from the date of award or at retirement beginning at age 62. All rights of ownership of the common stock convey to the participants upon the issuance of their respective shares at the end of the ownership-vesting period, with the exception of dividend equivalents that are paid on the units during the vesting period.

The following table summarizes information for restricted stock awards and incentive compensation awards as of December 31, 2016:

	Restrictive Stock - Service Based		Restrictive Stock - Performance Based		Incentive Compensation	
	Number of Awards	Weighted-Average Grant-Date Fair Value	Number of Awards	Weighted-Average Grant-Date Fair Value	Number of Awards	Weighted-Average Grant-Date Fair Value
January 1, 2016	288,563	$ 120.92	36,607	$ 117.76	37,340	$ 106.45
Awarded	73,550	$ 128.48	75,421	$ 124.41	18,570	$ 124.41
Distributed	(51,849)	$ 104.82	–	$ –	(14,665)	$ 107.01
Forfeited	(2,947)	$ 129.59	(711)	$ 124.41	(696)	$ 108.28
December 31, 2016	307,317	$ 125.36	111,317	$ 122.22	40,549	$ 114.44

The weighted-average grant-date fair value of service-based restricted stock awards granted during 2016, 2015 and 2014 was $128.48, $154.26 and $126.88, respectively. The weighted average grant-date fair value of performance-based restricted stock awards granted during 2016, 2015 and 2014 was $124.41, $108.53 and $129.14, respectively. The weighted-average grant-date fair value of incentive compensation awards granted during 2016, 2015 and 2014 was $124.41, $108.53 and $109.17, respectively.

The aggregate intrinsic values for restricted stock awards and incentive compensation awards at December 31, 2016 were $92,740,000 and $5,270,000, respectively, and were based on the closing price of the Corporation's common stock at December 31, 2016, which was $221.53. The aggregate intrinsic values of restricted stock awards distributed during the years ended December 31, 2016, 2015 and 2014 were $9,738,000, $11,387,000 and $3,555,000, respectively. The aggregate intrinsic values of incentive compensation awards distributed during the years ended December 31, 2016, 2015 and 2014 were $1,941,000, $983,000 and $584,000, respectively. The aggregate intrinsic values for distributed awards were based on the closing prices of the Corporation's common stock on the dates of distribution.

Under the Plans, prior to 2016, the Corporation granted options to employees to purchase its common stock at a price equal to the closing market value at the date of grant. Options become exercisable in four annual installments beginning one year after date of grant. Options granted starting 2013 expire ten years after the grant date while outstanding options granted prior to 2013 expire eight years after the grant date.

In connection with the TXI acquisition, the Corporation issued 821,282 Martin Marietta stock options ("Replacement Options") to holders of outstanding TXI stock options at the acquisition date. The Corporation issued 0.7 Replacement Options for each outstanding TXI stock option, and the Replacement Option prices reflected the exchange ratio. The Replacement Options will expire on the original contractual dates when the TXI stock options were initially issued. Consistent with the terms of the Corporation's other outstanding stock options, Replacement Options expire 90 days after employment is terminated.

Prior to 2009, each nonemployee Board of Director member received 3,000 non-qualified stock options annually. These options have an exercise price equal to the market value at the date of grant, vested immediately and expire ten years from the grant date.

The following table includes summary information for stock options as of December 31, 2016:

	Number of Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (years)
Outstanding at January 1, 2016	686,012	$ 95.43	
Exercised	(276,240)	$ 98.67	
Terminated	(2,881)	$ 89.06	
Outstanding at December 31, 2016	406,891	$ 93.27	3.9
Exercisable at December 31, 2016	324,979	$ 82.63	3.0

The weighted-average grant-date exercise price of options granted during 2015 and 2014 was $154.58 and $121.00, respectively. The aggregate intrinsic values of options exercised during the years ended December 31, 2016, 2015 and 2014 were $22,571,000, $7,318,000 and $9,709,000, respectively, and were based on the closing prices of the Corporation's common stock on the dates of exercise. The aggregate intrinsic values for options outstanding and exercisable at December 31, 2016 were $52,189,000 and $45,138,000, respectively, and were based on the closing price of the Corporation's common stock at December 31, 2016, which was $221.53.

At December 31, 2016, there are approximately 941,000 awards available for grant under the Plans. In 2016, the Corporation's shareholders approved the registration of an additional 800,000 shares of common stock under the Plans. As part of approving the registered shares, the Corporation agreed to not issue any additional awards under the legacy TXI plan. The awards available for grant under the Plans at December 31, 2016 reflect no awards available under the legacy TXI plan.

In 1996, the Corporation adopted the Shareholder Value Achievement Plan to award shares of the Corporation's common stock to key senior employees based on certain common stock performance criteria over a long-term period. Under the terms of this plan, 250,000 shares of common stock were reserved for issuance. Through December 31, 2016, 42,025 shares have been issued under this plan. No awards have been granted under this plan after 2000.

The Corporation adopted and the shareholders approved the Common Stock Purchase Plan for Directors in 1996, which provides nonemployee Board of Directors the election to receive all or a portion of their total fees in the form of the Corporation's common stock. In 2016, members of the Board of Directors were not required to defer any of their fees in the form of the Corporation's common stock. Under the terms of this plan, 300,000 shares of common stock were reserved for issuance. Nonemployee Board of Directors elected to defer portions of their fees representing 3,699, 4,035 and 3,804 shares of the Corporation's common stock under this plan during 2016, 2015 and 2014, respectively.

The following table summarizes stock-based compensation expense for the years ended December 31, 2016, 2015 and 2014, unrecognized compensation cost for nonvested awards at December 31, 2016 and the weighted-average period over which unrecognized compensation cost will be recognized:

(add 000, except year data)	Stock Options	Restricted Stock	Incentive Compensation	Directors' Awards	Total
Stock-based compensation expense recognized for years ended December 31:					
2016	**$ 1,646**	**$17,747**	**$ 442**	**$ 646**	**$ 20,481**
2015	$ 2,679	$ 9,809	$ 376	$ 725	$ 13,589
2014	$ 2,020	$ 6,189	$ 257	$ 527	$ 8,993
Unrecognized compensation cost at December 31, 2016:	**$ 1,045**	**$19,533**	**$ 340**	**$ –**	**$ 20,918**
Weighted-average period over which unrecognized compensation cost will be recognized:	1.6 years	2.1 years	1.5 years	–	

For the years ended December 31, 2016, 2015 and 2014, the Corporation recognized a deferred tax asset related to stock-based compensation expense of $7,901,000, $5,286,000 and $3,542,000, respectively.

The following presents expected stock-based compensation expense in future periods for outstanding awards as of December 31, 2016:

(add 000)	
2017	$11,492
2018	7,547
2019	1,879
Total	$20,918

Stock-based compensation expense is included in selling, general and administrative expenses in the Corporation's consolidated statements of earnings.

Note L: Leases

Total lease expense for operating leases was $85,945,000, $80,417,000 and $59,590,000 for the years ended December 31, 2016, 2015 and 2014, respectively. The Corporation's operating leases generally contain renewal and/or purchase options with varying terms. The Corporation has royalty agreements that generally require royalty payments based on tons produced or total sales dollars and also contain minimum payments. Total royalties, principally for leased properties, were $55,257,000, $53,658,000 and $50,535,000 for the years ended December 31, 2016, 2015 and 2014, respectively. The Corporation also has capital lease obligations for machinery and equipment.

Future minimum lease and royalty commitments for all noncancelable agreements and capital lease obligations as of December 31, 2016 are as follows:

(add 000)	Capital Leases	Operating Leases and Royalty Commitments
2017	$ 3,416	$ 125,316
2018	3,561	68,488
2019	3,241	59,727
2020	2,558	55,080
2021	1,768	51,376
Thereafter	5,216	355,918
Total	19,760	$ 715,905
Less: imputed interest	(4,155)	
Present value of minimum lease payments	15,605	
Less: current capital lease obligations	(2,683)	
Long-term capital lease obligations	$ 12,922	

Of the total future minimum commitments, $225,900,000 relates to the Corporation's contracts of affreightment.

Note M: Shareholders' Equity

The authorized capital structure of the Corporation includes 100,000,000 shares of common stock, with a par value of $0.01 a share. At December 31, 2016, approximately 2,164,000 common shares were reserved for issuance under stock-based plans.

Pursuant to authority granted by its Board of Directors, the Corporation can repurchase up to 20,000,000 shares of common stock through open-market purchases. The Corporation repurchased 1,587,987 and 3,285,380 shares of common stock during 2016 and 2015, respectively, and did not repurchase any shares of common stock during 2014. At December 31, 2016, 15,126,633 shares of common stock were remaining under the Corporation's repurchase authorization.

In addition to common stock, the Corporation's capital structure includes 10,000,000 shares of preferred stock with a par value of $0.01 a share. On October 21, 2006, the Board of Directors adopted a Rights Agreement (the "Rights Agreement") and reserved 200,000 shares of Junior Participating Class B Preferred Stock for issuance. In accordance with the Rights Agreement, the Corporation issued a dividend of one right for each share of the Corporation's common stock outstanding as of October 21, 2006, and one right continues to attach to each share of common stock issued thereafter. The rights will become exercisable if any person or group acquires beneficial ownership of 15% or more of the Corporation's common stock. Once exercisable and upon a person or group acquiring 15% or more of the Corporation's common stock, each right (other than rights owned by such person or group) entitles its holder to purchase, for an exercise price of $315 per share, a number of shares of the Corporation's common stock (or in certain circumstances, cash, property or other securities of the Corporation) having a market value of twice the exercise price, and under certain conditions, common stock of an acquiring company having a market value of twice the exercise price. If any person or group acquires beneficial ownership of 15% or more of the Corporation's common stock, the Corporation may, at its option, exchange the outstanding rights (other than rights owned by such acquiring person or group) for shares of the Corporation's common stock or Corporation equity securities deemed to have the same value as one share of common stock or a combination thereof, at an exchange ratio of one share of common stock per right. The Corporation's Rights Agreement expired on October 21, 2016.

Note N: Commitments and Contingencies

Legal and Administrative Proceedings. The Corporation is engaged in certain legal and administrative proceedings incidental to its normal business activities. In the opinion of management and counsel, based upon currently-available facts, it is remote that the ultimate outcome of any litigation and other proceedings, including those pertaining to environmental matters (see Note A), relating to the Corporation and its subsidiaries, will have a material adverse effect on the overall results of the Corporation's operations, its cash flows or its financial position.

Asset Retirement Obligations. The Corporation incurs reclamation and teardown costs as part of its mining and production processes. Estimated future obligations are discounted to their present value and accreted to their projected future obligations via charges to operating expenses. Additionally, the fixed assets recorded concurrently with the liabilities are depreciated over the period until retirement activities are expected to occur. Total accretion and depreciation expenses for 2016, 2015 and 2014 were $8,823,000, $6,767,000 and $4,584,000, respectively, and are included in other operating income and expenses, net, in the consolidated statements of earnings.

The following shows the changes in the asset retirement obligations:

years ended December 31 (add 000)	**2016**	2015
Balance at beginning of year	**$ 89,604**	$ 70,422
Accretion expense	**4,288**	3,336
Liabilities incurred and assumed in business combinations	**6,700**	14,735
Liabilities settled	**166**	(4,490)
Revisions in estimated cash flows	**348**	5,601
Balance at end of year	**$101,106**	$ 89,604

Other Environmental Matters. The Corporation's operations are subject to and affected by federal, state and local laws and regulations relating to the environment, health and safety and other regulatory matters. Certain of the Corporation's operations may, from time to time, involve the use of substances that are classified as toxic or hazardous within the meaning of these laws and regulations. Environmental operating permits are, or may be, required for certain of the Corporation's operations, and such permits are subject to modification, renewal and revocation. The Corporation regularly monitors and reviews its operations, procedures and policies for compliance with these laws and regulations. Despite these compliance efforts, risk of environmental remediation liability is inherent in the operation of the Corporation's businesses, as it is with other companies engaged in similar businesses. The Corporation has no material provisions for environmental remediation liabilities and does not believe such liabilities will have a material adverse effect on the Corporation in the future.

The United States Environmental Protection Agency ("EPA") includes the lime industry as a national enforcement priority under the federal Clean Air Act ("CAA"). As part of the industry-wide effort, the EPA issued Notices of Violation/ Findings of Violation ("NOVs") to the Corporation in 2010 and 2011 regarding its compliance with the CAA New Source Review ("NSR") program at its Magnesia Specialties dolomitic lime manufacturing plant in Woodville, Ohio. The Corporation has been providing information to the EPA in response to these NOVs and has had several meetings with the EPA. The Corporation believes it is in substantial compliance with the NSR program. At this time, the Corporation cannot reasonably estimate what likely penalties or upgrades to equipment might ultimately be required. The Corporation believes any costs related to any required upgrades to capital equipment will be spread over time and will not have a material adverse effect on the Corporation's results of operations or its financial condition.

Insurance Reserves. The Corporation has insurance coverage with large deductibles for workers' compensation, automobile liability, marine liability and general liability claims. The Corporation is also self-insured for health claims. At December 31, 2016 and 2015, reserves of $42,184,000 and $45,911,000, respectively, were recorded for all such insurance claims. The Corporation carries various risk deductible workers' compensation policies related to its workers' compensation liabilities. The Corporation records the workers' compensation reserves based on an actuarial-determined analysis. This analysis calculates development factors, which are applied to total reserves within the workers' compensation program. While the Corporation believes the assumptions used to calculate these liabilities are appropriate, significant differences in actual experience and/or significant changes in these assumptions may materially affect workers' compensation costs.

Letters of Credit. In the normal course of business, the Corporation provides certain third parties with standby letter of credit agreements guaranteeing its payment for certain insurance claims, utilities and property improvements. At December 31, 2016, the Corporation was contingently liable for $45,428,000 in letters of credit, of which $2,507,000 were issued under the Corporation's Revolving Facility.

Certain of these underlying obligations are accrued on the Corporation's consolidated balance sheets.

Surety Bonds. In the normal course of business, at December 31, 2016, the Corporation was contingently liable for $381,456,000 in surety bonds required by certain states and municipalities and their related agencies. The bonds are principally for certain insurance claims, construction contracts, reclamation obligations and mining permits guaranteeing the Corporation's own performance. Certain of these underlying obligations, including those for asset retirement requirements and insurance claims, are accrued on the Corporation's consolidated balance sheets. Five of these bonds total $85,111,000, or 22%, of all outstanding surety bonds. The Corporation has indemnified the underwriting insurance companies, Liberty Mutual and W.R. Berkley, against any exposure under the surety bonds. In the Corporation's past experience, no material claims have been made against these financial instruments.

Borrowing Arrangements with Affiliate. The Corporation is a co-borrower with an unconsolidated affiliate for a $25,000,000 revolving line of credit agreement with BB&T, of which $22,600,000 was outstanding as of December 31, 2016. The line of credit expires in February 2018. The affiliate has agreed to reimburse and indemnify the Corporation for any payments and expenses the Corporation may incur from this agreement. The Corporation holds a lien on the affiliate's membership interest in a joint venture as collateral for payment under the revolving line of credit.

In 2014, the Corporation loaned the unconsolidated affiliate a total of $6,000,000 as an interest-only note due December 31, 2019.

Purchase Commitments. The Corporation had purchase commitments for property, plant and equipment of $94,074,000 as of December 31, 2016. The Corporation also had other purchase obligations related to energy and service contracts of $106,307,000 as of December 31, 2016. The Corporation's contractual purchase commitments as of December 31, 2016 are as follows:

(add 000)	
2017	$ 154,804
2018	24,555
2019	16,453
2020	2,979
2021	454
Thereafter	1,136
Total	$ 200,381

Capital expenditures in 2016, 2015 and 2014 that were purchase commitments as of the prior year end were $62,927,000, $116,681,000 and $34,135,000, respectively.

Employees. Approximately 11% of the Corporation's employees are represented by a labor union. All such employees are hourly employees. The Corporation maintains collective bargaining agreements relating to the union employees within the Aggregates business and Magnesia Specialties segment. Of the Magnesia Specialties segment, located in Manistee, Michigan and Woodville, Ohio, 100% of its hourly employees are represented by labor unions. The Manistee collective bargaining agreement expires in August 2019. The Woodville collective bargaining agreement expires in May 2018.

Note O: Business Segments

The Aggregates business is comprised of divisions which represent operating segments. Disclosures for certain divisions are consolidated as reportable segments for financial reporting purposes as they meet the aggregation criteria. The Aggregates business contains three reportable segments: Mid-America Group, Southeast Group and West Group. The Cement and Magnesia Specialties businesses also represent individual operating and reportable segments. The accounting policies used for segment reporting are the same as those described in Note A.

The Corporation's evaluation of performance and allocation of resources are based primarily on earnings from operations. Consolidated earnings from operations include net sales less cost of sales, selling, general and administrative expenses, acquisition-related expenses, net, other operating income and expenses, net, and exclude interest expense, other nonoperating income and expenses, net, and taxes on income. Corporate consolidated earnings from operations primarily include depreciation on capitalized interest, expenses for corporate administrative functions, acquisition-related expenses, net, and other nonrecurring and/or non-operational income and expenses excluded from the Corporation's evaluation of business segment performance and resource allocation. All debt and related interest expense is held at Corporate.

Assets employed by segment include assets directly identified with those operations. Corporate assets consist primarily of cash and cash equivalents; property, plant and equipment for corporate operations; investments and other assets not directly identifiable with a reportable business segment.

For the year ended December 31, 2016, the Corporation changed the presentation of the elimination of the intersegment and interproduct revenues and sales. Information for the years ended December 31, 2015 and 2014 has been conformed to the 2016 presentation.

The following tables display selected financial data for the Corporation's reportable business segments.

Selected Financial Data by Business Segment

years ended December 31
(add 000)

Total revenues	**2016**	2015	2014
Mid-America Group	**$ 1,017,098**	$ 926,251	$ 848,855
Southeast Group	**321,078**	304,472	274,352
West Group	**1,970,165**	1,675,021	1,356,283
Total Aggregates Business	**3,308,341**	2,905,744	2,479,490
Cement	**375,814**	475,725	265,114
Magnesia Specialties	**257,058**	245,879	256,702
Less: Intersegment revenues	**(122,464)**	(87,778)	(43,355)
Total	**$ 3,818,749**	$ 3,539,570	$ 2,957,951

Net sales			
Mid-America Group	**$ 945,123**	$ 851,854	$ 770,568
Southeast Group	**304,451**	285,302	254,986
West Group	**1,847,211**	1,535,848	1,207,879
Total Aggregates Business	**3,096,785**	2,673,004	2,233,433
Cement	**364,445**	455,382	252,911
Magnesia Specialties	**238,001**	227,508	236,106
Less: Intersegment sales	**(122,464)**	(87,778)	(43,355)
Total	**$ 3,576,767**	$ 3,268,116	$ 2,679,095

Gross profit (loss)			
Mid-America Group	**$ 305,794**	$ 256,586	$ 216,883
Southeast Group	**57,108**	34,197	10,653
West Group	**344,581**	254,946	155,678
Total Aggregates Business	**707,483**	545,729	383,214
Cement	**120,100**	103,473	52,469
Magnesia Specialties	**89,477**	78,732	84,594
Corporate	**(8,094)**	(6,167)	2,083
Total	**$ 908,966**	$ 721,767	$ 522,360

years ended December 31
(add 000)

Selling, general and administrative expenses	**2016**	2015	2014
Mid-America Group	**$ 53,022**	$ 52,606	$ 52,217
Southeast Group	**17,325**	18,467	17,788
West Group	**71,531**	66,639	50,147
Total Aggregates Business	**141,878**	137,712	120,152
Cement	**24,798**	26,626	12,741
Magnesia Specialties	**9,694**	9,499	9,776
Corporate	**71,635**	44,397	26,576
Total	**$ 248,005**	$ 218,234	$ 169,245

Earnings (Loss) from operations			
Mid-America Group	**$ 257,347**	$ 206,820	$ 172,208
Southeast Group	**41,396**	16,435	(5,293)
West Group	**277,249**	205,699	153,182
Total Aggregates Business	**575,992**	428,954	320,097
Cement	**99,362**	47,821	40,751
Magnesia Specialties	**79,104**	68,886	74,805
Corporate	**(87,137)**	(66,245)	(120,780)
Total	**$ 667,321**	$ 479,416	$ 314,873

Intersegment revenues and intersegment sales represent Cement business sales to the West Group's ready mixed concrete business.

years ended December 31
(add 000)

Assets employed	**2016**	2015	2014
Mid-America Group	**$ 1,406,526**	$ 1,304,574	$ 1,290,833
Southeast Group	**594,967**	583,369	604,044
West Group	**2,981,701**	2,621,636	2,444,400
Total Aggregates Business	**4,983,194**	4,509,579	4,339,277
Cement	**1,922,317**	1,939,796	2,451,799
Magnesia Specialties	**150,969**	147,795	150,359
Corporate	**244,425**	360,441	273,082
Total	**$ 7,300,905**	$ 6,957,611	$ 7,214,517

Depreciation, depletion and amortization			
Mid-America Group	**$ 64,295**	$ 61,693	$ 63,294
Southeast Group	**30,590**	31,644	31,955
West Group	**119,819**	93,947	74,283
Total Aggregates Business	**214,704**	187,284	169,532
Cement	**44,834**	53,672	30,620
Magnesia Specialties	**12,865**	13,769	10,394
Corporate	**12,850**	8,862	12,200
Total	**$ 285,253**	$ 263,587	$ 222,746

years ended December 31
(add 000)

Total property additions	**2016**	2015	2014
Mid-America Group	**$ 152,014**	$ 77,640	$ 76,753
Southeast Group	**30,588**	12,155	23,326
West Group	**310,162**	235,245	753,342
Total Aggregates Business	**492,764**	325,040	853,421
Cement	**28,633**	9,599	975,063
Magnesia Specialties	**8,944**	8,916	2,588
Corporate	**10,430**	20,561	15,349
Total	**$ 540,771**	$ 364,116	$ 1,846,421

Property additions through acquisitions			
Mid-America Group	**$ 1,524**	$ 4,385	$ –
Southeast Group	**–**	–	–
West Group	**132,112**	35,965	632,560
Total Aggregates Business	**133,636**	40,350	632,560
Cement	**–**	–	970,300
Magnesia Specialties	**–**	–	–
Corporate	**–**	–	–
Total	**$ 133,636**	$ 40,350	$ 1,602,860

The Aggregates business includes the aggregates product line and aggregates-related downstream product lines, which include the asphalt/paving and ready mixed concrete product lines. All aggregates-related downstream product lines reside in the West Group. The following tables, which are reconciled to consolidated amounts, provide total revenues, net sales and gross profit by line of business: Aggregates (further divided by product line), Cement and Magnesia Specialties. Interproduct revenues and interproduct sales represent sales from the aggregates product line to the asphalt/paving and ready mixed concrete product lines. Intersegment revenues and intersegment sales represent cement product line sales to the ready mixed concrete product line.

years ended December 31
(add 000)

Total revenues	**2016**	2015	2014
Aggregates	**$ 2,267,574**	$ 2,120,245	$ 1,880,074
Asphalt/Paving	**345,134**	290,966	303,777
Ready Mixed Concrete	**903,803**	657,831	431,383
Less: Interproduct revenues	**(208,170)**	(163,298)	(135,744)
Total Aggregates Business	**3,308,341**	2,905,744	2,479,490
Cement	**375,814**	475,725	265,114
Magnesia Specialties	**257,058**	245,879	256,702
Less: Intersegment revenues	**(122,464)**	(87,778)	(43,355)
Total	**$ 3,818,749**	$ 3,539,570	$ 2,957,951

Net sales	**2016**	2015	2014
Aggregates	**$ 2,060,876**	$ 1,896,143	$ 1,644,265
Asphalt/Paving	**341,444**	283,628	294,239
Ready Mixed Concrete	**902,635**	656,531	430,673
Less: Interproduct sales	**(208,170)**	(163,298)	(135,744)
Total Aggregates Business	**3,096,785**	2,673,004	2,233,433
Cement	**364,445**	455,382	252,911
Magnesia Specialties	**238,001**	227,508	236,106
Less: Intersegment sales	**(122,464)**	(87,778)	(43,355)
Total	**$ 3,576,767**	$ 3,268,116	$ 2,679,095

Gross profit (loss)			
Aggregates	**$ 554,801**	$ 467,053	$ 324,093
Asphalt/Paving	**53,569**	35,734	19,992
Ready Mixed Concrete	**99,113**	42,942	39,129
Total Aggregates Business	**707,483**	545,729	383,214
Cement	**120,100**	103,473	52,469
Magnesia Specialties	**89,477**	78,732	84,594
Corporate	**(8,094)**	(6,167)	2,083
Total	**$ 908,966**	$ 721,767	$ 522,360

Domestic and foreign total revenues are as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Domestic	**$ 3,761,651**	$ 3,493,462	$ 2,912,115
Foreign	**57,098**	46,108	45,836
Total	**$ 3,818,749**	$ 3,539,570	$ 2,957,951

Note P: Supplemental Cash Flow Information

The components of the change in other assets and liabilities, net, are as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Other current and noncurrent assets	**$ 9,171**	$ (3,631)	$ 8,066
Accrued salaries, benefits and payroll taxes	**13,155**	(12,303)	10,136
Accrued insurance and other taxes	**(2,688)**	4,425	(17,641)
Accrued income taxes	**(12,523)**	(4,364)	27,680
Accrued pension, postretirement and postemployment benefits	**(15,955)**	(18,153)	1,150
Other current and noncurrent liabilities	**(6,053)**	(3,014)	(10,681)
Change in other assets and liabilities, net	**$ (14,893)**	$ (37,040)	$ 18,710

The changes in accrued salaries, benefits and payroll taxes reflect an increase in accrued incentive compensation in 2016, TXI-related severance payments of $9,682,000 in 2015 and TXI-related severance accrual of $11,444,000 in 2014. The changes in accrued income taxes reflects the utilization of deferred tax assets related to the AMT credit carryforward in 2016 and NOL carryforwards in 2016 and 2015. Additionally, in 2015, the Corporation received the federal tax refunds attributable to the settlement of the U.S. Advanced Pricing Agreement. The change in accrued pension, postretirement and postemployment benefits in 2015 was attributable to higher pension plan funding, which increased $28,270,000.

Noncash investing and financing activities are as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Noncash investing and financing activities:			
Accrued liabilities for purchases of property, plant and equipment	**$38,566**	$ 22,285	$ 31,172
Acquisition of assets through capital lease	**$ 1,399**	$ 1,445	$ 7,788
Acquisition of assets through asset exchange	**$ –**	$ 5,000	$ 2,091
Seller financing of land purchase	**$ –**	$ –	$ 1,500
Acquisition of TXI net assets through issuances of common stock and options	**$ –**	$ –	$ 2,691,986

Supplemental disclosures of cash flow information are as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Cash paid for interest	**$ 73,664**	$ 71,011	$ 81,304
Cash paid for income taxes	**$ 124,342**	$ 46,774	$ 15,955

INTRODUCTORY OVERVIEW

Martin Marietta Materials, Inc. (the "Corporation" or "Martin Marietta") is a leading supplier of aggregates products (crushed stone, sand and gravel) used in the construction of infrastructure, nonresidential and residential projects. Aggregates products are also used for railroad ballast and in agricultural, utility and environmental applications. In addition, the Corporation is a leading supplier of cement, ready mixed concrete and asphalt and paving services in some regions where being able to supply a full range of products is important for customer service. The Corporation also has a Magnesia Specialties business which produces magnesia-based chemicals products, used in industrial, agricultural and environmental applications, and dolomitic lime, which is sold primarily to customers in the steel industry.

The Corporation's consolidated net sales and operating earnings are predominately derived from its Aggregates business, which mines and processes granite, limestone, sand and gravel. The Aggregates business includes aggregates-related downstream operations, namely heavy building materials such as ready mixed concrete, asphalt and road paving construction services.

The Corporation's primary objective is to maximize long-term shareholder return by remaining disciplined in the pursuit of strategic growth and earnings objectives. Management executes its commitment to this overarching goal through the Corporation's core foundational pillars as follows:

- Safety – protecting the well-being of all who come in contact with the Corporation's business and achieving world-class safety measures
- Ethics – conducting business in compliance with applicable laws, rules, regulations and the highest ethical values
- Sustainability – reflecting all aspects of good corporate citizenship by being responsible neighbors and supporting local communities; and protecting the Earth's resources and minimizing the operations' environmental impact
- Operational Excellence – executing the Corporation's strategic growth plan, sustaining its competitive advantages and committing to its core competencies
- Cost Discipline – increasing earnings through portfolio optimization and capital allocation
- Customer Satisfaction – maintaining positive customer relationships and being selected as the supplier of choice

Consolidated Strategic Objectives

The Corporation views its strategic objectives through the lens of building on the foundation of a world-class organization. Consistent with this premise, the Corporation's Board of Directors and management continue to assess business combinations and arrangements with other companies engaged in similar or complementary businesses that increase the Corporation's presence in its strategic businesses or provide new opportunities in markets that the Corporation views as attractive. In the opinion of management, attractive aggregates markets exhibit population growth or population density, drivers of construction materials consumption and large-scale infrastructure networks; business and employment diversity, a driver of greater economic stability; and superior state financial position, a driver of public infrastructure growth. With further economic recovery, management anticipates the number of acquisition opportunities should increase as sellers view options for monetizing improving earnings.

In light of these objectives, management intends to emphasize, among other things, the following strategic, financial and operational initiatives in 2017:

Strategic:

- Pursuing aggregates-led expansion through acquisitions that complement existing operations (i.e., bolt-on acquisitions) and acquisitions that provide leadership positions in new markets or similar product lines (i.e., platform acquisitions)
- Leveraging the Corporation's competitive advantage from the Corporation's long-haul distribution network
- Optimizing the Corporation's current asset base to continue to enhance long-term shareholder value
- Realizing incremental value from possible divestiture of identified non-strategic or surplus assets
- Increasing the percentage of markets where the Corporation has a leading position

Financial:

- Maintaining the Corporation's strong financial position while advancing strategic objectives
- Maintaining the incremental gross margin (excluding freight and delivery revenues) of the aggregates product line at management's targeted goal of an average of 60% over the course of recovery in the business cycle, including recovery in the southeastern U.S. markets
- Maximizing return on invested capital consistent with the successful long-term operation of the Corporation's business
- Returning cash to shareholders through meaningful and sustainable dividends and share repurchases

Operational:

- Continuing to focus on sustainability practices, including improved safety performance
- Maintaining a focus on functional excellence leading to cost discipline and operational efficiencies
- Investing in value-added growth initiatives and successfully integrating them with the Corporation's heritage operations
- Using best practices and information technology to drive improved cost performance
- Ensuring quality products are available in high-growth markets
- Sustaining the industry differentiating performance and operating results of the Magnesia Specialties segment

2016 Performance Highlights

Operating Results:

- Record earnings per diluted share of $6.63
- Record net earnings attributable to Martin Marietta of $425 million, an increase of 47% over 2015
- Record consolidated earnings before interest expense, income taxes, depreciation, depletion and amortization ("EBITDA") of $971.6 million
- Return on shareholders' equity of 10.4%
- Total shareholders' return of 64%
- Aggregates product line pricing increase of 7.3% and volume growth of 1.4%, both compared with 2015
- Record Magnesia Specialties' net sales of $238.0 million and earnings from operations of $79.1 million
- Effective management of controllable production costs, as evidenced by a 330-basis-point improvement in consolidated gross margin (excluding freight and delivery revenues) over 2015
- Selling, general and administrative ("SG&A") expenses of 6.9% as a percentage of net sales

Cash Flows:

- Operating cash flow of $678.7 million, up 18.4% over 2015
- Return of $364.2 million of cash to shareholders through share repurchases ($259.2 million) and dividends ($105.0 million)
- Ratio of consolidated net debt-to-consolidated EBITDA of 1.7 times for the trailing-twelve months ended December 31, 2016, calculated as prescribed in the Corporation's bank credit agreements and was in compliance with the covenant maximum of 3.5 times
- Property, plant and equipment additions for the year were $403.5 million; cash paid during the year for capital additions was $387.3 million; capital plan focused on maintaining safe, environmentally-sound operations and increasing operating efficiencies along with a continuing investment in land with long-term mineral reserves to serve high-growth markets

Operations:

- Issued the Corporation's Sustainability Report, highlighting the Corporation's continuing commitment to sustainability as a core business value:
  - Unwavering commitment to safety
  - Continued to support the communities where the Corporation operates
  - Remained committed to being responsible environmental stewards to reduce the environmental impact of the Corporation's operations
  - Committed to employee well-being by providing first-class benefits, including, but not limited to, employee disaster relief assistance, education assistance and scholarships
- Completed two strategic acquisitions:
  - Rocky Mountain Materials – expanded the Corporation's position along the Front Range of the Rocky Mountains; provided more than 500 million tons of high-quality aggregates reserves
  - Ratliff Ready Mix – buyout of remaining interest in ready mixed concrete company that serves the I-35 corridor between Dallas and Austin; enhanced market position and provided additional vertical integration benefits with existing cement business

Aggregates Business

In 2016, the Aggregates business shipped 158.6 million tons of aggregates from a network of nearly 300 aggregates quarries and distribution yards in 26 states, Canada and the Bahamas. These shipments included 10.4 million tons consumed by the business' aggregates-related downstream operations. The Corporation also shipped 8.5 million cubic yards of ready mixed concrete from approximately 150 plants primarily located in the high-growth states of Texas and Colorado. The asphalt operations shipped 1.0 million tons of asphalt and additionally used 2.1 million tons of asphalt in the Aggregates business' paving operations. While the Aggregates business covers a wide geographic

area, financial results depend on the strength of the local economies because of the cost of transportation relative to the price of the products. The Aggregates business' top five sales-generating states – Texas, Colorado, North Carolina, Iowa and Georgia – accounted for 73% of its 2016 net sales by state of destination, while the top ten sales-generating states accounted for 87% of its 2016 net sales. Management closely monitors economic conditions and public infrastructure spending in the market areas in the states where the Corporation's operations are located. Further, supply and demand conditions in these states affect their respective profitability.

At December 31, 2016, the Aggregates business was organized as follows:

AGGREGATES BUSINESS

Reportable Segments	Mid-America Group	Southeast Group	West Group
Operating Locations	Indiana, Iowa, northern Kansas, Kentucky, Maryland, Minnesota, Missouri, eastern Nebraska, North Carolina, Ohio, South Carolina, Virginia, Washington and West Virginia	Alabama, Florida, Georgia, Tennessee, Nova Scotia and the Bahamas	Arkansas, Colorado, southern Kansas, Louisiana, western Nebraska, Nevada, Oklahoma, Texas, Utah and Wyoming
Product Lines	Aggregates (crushed stone, sand and gravel)	Aggregates (crushed stone, sand and gravel)	Aggregates (crushed stone, sand and gravel), asphalt and paving and ready mixed concrete
Types of Aggregates Locations	Quarries and Distribution Facilities	Quarries and Distribution Facilities	Quarries, Plants and Distribution Facilities
Modes of Transportation for Aggregates Product Line	Truck and Rail	Truck, Rail and Water	Truck and Rail

The construction aggregates industry is a mature, cyclical business dependent on activity within the construction marketplace. In 2016, the Corporation's aggregates product line shipments increased 1.4% compared with 2015. The Corporation's aggregates product line shipments have increased each of the past five years, reflecting degrees of stability and modest growth. However, aggregates volumes are still below historically normal levels. Prior to 2011, the economic recession resulted in United States aggregates consumption declining by almost 40% from peak volumes in 2006.

Aggregates Product Line

As mentioned earlier, the principal end-use markets of the aggregates industry are public infrastructure (i.e., highways; streets; roads; bridges; and schools); nonresidential construction (i.e., manufacturing and distribution facilities; industrial complexes; office buildings; large retailers and wholesalers; and malls); and residential construction (i.e., subdivision development; and single- and multi-family housing). Aggregates products are also used in the railroad, agricultural, utility and environmental industries. Ballast is an aggregates product used to stabilize railroad track beds and, increasingly, concrete rail ties are being used as a substitute for wooden ties. Agricultural lime, a high-calcium carbonate material, is used as a supplement in animal feed, a soil acidity neutralizer and agricultural growth enhancer. High-calcium limestone is used as filler in glass, plastic, paint, rubber, adhesives, grease and paper. Chemical-grade, high-calcium limestone is used as a desulfurization material in utility plants. Stone is used as a stabilizing material to control erosion caused by water runoff or at ocean beaches, inlets, rivers and streams. The following presents the end-use distribution of aggregates product line shipments:

MARKETS
AGGREGATES PRODUCT LINE
(Estimated percentage of shipments)

	2012	2013	2014	2015	2016	5-Year Avg.
Infrastructure	47%	48%	44%	42%	**39%**	**44%**
Nonresidential	29%	29%	32%	31%	**32%**	**31%**
Residential	12%	12%	14%	17%	**21%**	**15%**
ChemRock/ Rail	12%	11%	10%	10%	**8%**	**10%**

Source: Corporation data

End-use markets respond to changing economic conditions in different ways. Public infrastructure construction has historically been more stable than nonresidential and residential construction due to typically stable and predictable funding from federal, state and local governments, with approximately half from the federal government and half from state and local governments. However, after uncertainty regarding the solvency of the Highway Bill in 2014, the Corporation experienced a slight retraction in aggregates shipments to the infrastructure end-use market. After a decade of 36 short-term funding provisions, a five-year, $305 billion highway bill, *Fixing America's Surface Transportation Act* ("FAST Act" or "Act"), was signed into law on December 4, 2015. Funding for the FAST Act will primarily be secured through gas tax collections and will enable states to purchase and use an estimated additional 114 million tons of aggregates over the life of the Act. Over the past 24 months, many states have taken on a significantly larger role in funding infrastructure investment, including initiating special-purpose taxes and raising gas taxes. Overall, the infrastructure market accounted for 39% of the Corporation's 2016 aggregates product line shipments.

Nonresidential and residential construction levels are interest rate-sensitive and typically move in direct correlation with economic cycles. The Dodge Momentum Index, a twelve-month leading indicator of construction spending for nonresidential building compiled by McGraw Hill Construction and where the year 2000 serves as an index basis of 100, remained strong and was at an eight-year high of 136.7 in December 2016, a 9% increase over prior year, signaling continued growth in nonresidential construction. Housing starts, a key indicator for residential construction activity, continued to show year-over-year improvement. While starts exceeded one million in 2016, they still remain below the 50-year historical annual average of 1.5 million units. That said, the Corporation expects to continue to experience gains in the residential market. Importantly, 2016 housing starts exceeded completions, a trend expected to continue in 2017.

Aggregates-Related Downstream Businesses

The aggregates-related downstream businesses, which include ready mixed concrete and asphalt and paving operations, have inherently lower gross margins (excluding freight and delivery revenues) than the aggregates product line. Market dynamics for these operations include a highly competitive environment and lower barriers to entry. Liquid asphalt, or bitumen, and cement are key raw materials in the production of hot mix asphalt and ready mixed concrete, respectively. Therefore, fluctuations in prices for these raw materials directly affect the Corporation's operating results. Liquid asphalt prices in 2016 were lower than in 2015, but may not always follow other energy products (e.g., oil or diesel fuel) because of complexities in the refining process which converts a barrel of oil into other fuels and petrochemical products. Shipments of aggregates-related downstream products typically follow construction aggregates trends.

Cement Business

The Cement business includes a leading position in the Texas cement markets, with production facilities in Midlothian, Texas, south of Dallas-Fort Worth, and Hunter, Texas, north of San Antonio. These plants produce Portland and specialty cements and have a combined annual capacity of 4.5 million tons, as well as a current permit that provides an 800,000-ton-expansion opportunity at the Midlothian plant. In addition to the production facilities, the Corporation operates several cement distribution terminals. The Corporation owns more than 600 million tons of limestone reserves adjacent to its cement production plants. Calcium carbonate in the form of limestone is the principal raw material used in the production of cement.

Similar to the Aggregates business, cement is used in infrastructure projects; nonresidential and residential construction; and railroad, aggregates, utility and environmental industries. Further, cement is the basic binding agent for concrete, a primary construction material. Consequently, the cement industry is cyclical and dependent on the strength of the construction sector. In 2016, the Corporation shipped 3.5 million tons of cement, consisting of 2.3 million tons to external customers in five states and 1.2 million tons for internal use. The Portland Cement Association ("PCA") forecasts a 3% increase in demand in Texas in 2017 over

2016. The Cement business' leadership, in collaboration with the aggregates and ready mixed concrete teams, have developed strategic plans regarding interplant efficiencies, as well as tactical plans addressing plant utilization and efficiency. In 2016, the cement plants operated on average at 76% utilization.

Energy, including electricity and fossil fuels, accounts for 22% of the cement production cost profile. Therefore, profitability of the Cement business is affected by changes in energy prices and the available supply of these products. The Corporation currently has fixed-price supply contracts for coal but also consumes natural gas, diesel and alternative fuels and petroleum coke. Further, profitability of the Cement business is also subject to kiln maintenance. This process typically requires a plant to be shut down for a period of time as repairs are made. In 2016, the Cement business incurred kiln maintenance costs of $20.9 million.

Magnesia Specialties Business

The Magnesia Specialties business produces and sells dolomitic lime from its Woodville, Ohio facility and magnesia-based chemicals from its Manistee, Michigan facility. In 2016, this business achieved record net sales, gross profit and earnings from operations of $238.0 million, $89.5 million and $79.1 million, respectively. The dolomitic lime business, which represented 30% of Magnesia Specialties' 2016 net sales, is dependent on the steel industry and operating results are affected by cyclical changes in that industry. The dolomitic lime business runs most profitably at 70% or greater steel capacity utilization; domestic capacity utilization averaged 71% in 2016. The chemical products business focuses on higher-margin specialty chemicals that can be produced at volumes that support efficient operations.

A significant portion of costs related to the production of dolomitic lime and magnesia chemical products is of a fixed or semi-fixed nature. The production of dolomitic lime and certain magnesia chemical products also requires the use of natural gas, coal and petroleum coke. Therefore, fluctuations in their pricing directly affect operating results. The Corporation has fixed-price supply contracts for natural gas, coal and petroleum coke to help mitigate this risk. For 2016, the Corporation's average cost per MCF (thousand cubic feet) for natural gas decreased 25% from 2015.

Liquidity and Capital Allocation

The Corporation's cash flows are generated primarily from operations. Operating cash flows generally fund working capital needs, capital expenditures, dividends, share repurchases and smaller acquisitions. The Corporation has capital allocation priorities in the following order:

- Acquisitions – execution of strategic growth plan
- Organic capital investment – above-maintenance level of capital spending expected over next five years
- Return of cash to shareholders:
  - Dividends – increased quarterly cash dividend 5% to $0.42 in August 2016
  - Share repurchases – initial authorization of 20.0 million shares; 15.1 million shares remaining

During 2016, the Corporation generated operating cash flow of $679 million. Significant uses of cash during the year included $387 million for capital expenditures (additions for the year were $404 million), $179 million for acquisitions, $105 million for dividends, $259 million for repurchases of the Corporation's common stock and $45 million for pension plan contributions.

Cash and cash equivalents on hand of $50 million at December 31, 2016, along with the Corporation's projected internal cash flows and its available financing resources, including access to debt and equity markets, as needed, is expected to continue to be sufficient to provide the capital resources necessary to support anticipated operating needs, cover debt service requirements, satisfy non-cancelable agreements, meet capital expenditures and discretionary investment needs, fund certain acquisition opportunities that may arise and allow for payment of dividends for the foreseeable future. The Corporation has a $300 million trade receivable securitization facility (the "Trade Receivable Facility"). The Corporation also has a $700 million five-year senior unsecured revolving facility (the "Revolving Facility") with a syndicate of banks. At December 31, 2016, the Corporation had combined unused borrowing capacity of $658 million under the Trade Receivable Facility and Revolving Facility.

FINANCIAL OVERVIEW

Highlights of 2016 Financial Performance (all comparisons are versus 2015)

- *Record earnings per diluted share of $6.63 compared with $4.29*
- *Record net earnings attributable to Martin Marietta of $425.4 million, an increase of 47%*
- *Record consolidated EBITDA of $971.6 million compared with $750.7 million*
- *Record consolidated net sales of $3.58 billion compared with $3.27 billion, an increase of 9.4%*
- *Aggregates product line pricing increase of 7.3%; aggregates product line volume increase of 1.4%*
- *Aggregates-related downstream businesses net sales of $1.24 billion and gross profit of $152.7 million*
- *Cement business net sales of $364.4 million and gross profit of $120.1 million*
- *Record Magnesia Specialties net sales of $238.0 million and gross profit of $89.5 million*
- *Record consolidated earnings from operations of $667.3 million compared with $479.4 million, a 39% increase*

Results of Operations

The discussion and analysis that follow reflect management's assessment of the financial condition and results of operations of the Corporation and should be read in conjunction with the audited consolidated financial statements on pages 10 through 40. As discussed in more detail herein, the Corporation's operating results are highly dependent upon activity within the construction marketplace, economic cycles within the public and private business sectors and seasonal and other weather-related conditions. In 2016 and 2015, many areas in the United States experienced significant amounts of precipitation. In fact, in 2015, Texas and Oklahoma each had its wettest year and the nation as a whole had its third wettest year in National Oceanic and Atmospheric Administration's ("NOAA") recorded history of 122 years. Net sales, production and cost structure were adversely affected by the significant precipitation. In 2016, Texas experienced more heavy rainfall, with the year ranking the 18th wettest year in the state's recorded history per NOAA. Further, since March 2015, Texas and surrounding regions have experienced 18 major flood events. Accordingly, the financial results for any year, notably 2016 and 2015, or year-to-year comparisons of reported results, may not be indicative of future operating results.

The Corporation's Aggregates business generated the majority of consolidated net sales and consolidated operating earnings. Furthermore, management presents certain key performance indicators for the Aggregates business. The following comparative analysis and discussion should be read within these contexts. Further, sensitivity analysis and certain other data are provided to enhance the reader's understanding of Management's Discussion and Analysis of Financial Condition and Results of Operations and are not intended to be indicative of management's judgment of materiality.

The Corporation's consolidated operating results and operating results as a percentage of net sales are as follows:

years ended December 31 (add 000, except for % of net sales)	**2016**	**% of Net Sales**	2015	% of Net Sales	2014[1]	% of Net Sales
Net sales	**$ 3,576,767**	**100.0%**	**$ 3,268,116**	**100.0%**	**$ 2,679,095**	**100.0%**
Freight and delivery revenues	241,982		271,454		278,856	
Total revenues	3,818,749		3,539,570		2,957,951	
Cost of sales	2,667,801	74.6	2,546,349	77.9	2,156,735	80.5
Freight and delivery costs	241,982		271,454		278,856	
Total cost of revenues	2,909,783		2,817,803		2,435,591	
Gross profit	**908,966**	**25.4**	**721,767**	**22.1**	**522,360**	**19.5**
Selling, general and administrative expenses	248,005	6.9	218,234	6.7	169,245	6.3
Acquisition related expenses, net	1,683	0.0	8,464	0.3	42,891	1.6
Other operating (income) and expenses, net	(8,043)	(0.2)	15,653	0.5	(4,649)	(0.2)
Earnings from operations	**667,321**	**18.7**	**479,416**	**14.7**	**314,873**	**11.8**
Interest expense	81,677	2.3	76,287	2.3	66,057	2.5
Other nonoperating income, net	(21,384)	(0.6)	(10,672)	(0.3)	(362)	–
Earnings from continuing operations before taxes on income	607,028	17.0	413,801	12.7	249,178	9.3
Taxes on income	181,584	5.1	124,863	3.8	94,847	3.5
Earnings from continuing operations	**425,444**	**11.9**	**288,938**	**8.8**	**154,331**	**5.8**
Loss on discontinued operations, net of taxes	–	–	–	–	(37)	–
Consolidated net earnings	425,444	11.9	288,938	8.8	154,294	5.8
Less: Net earnings (loss) attributable to noncontrolling interests	58	–	146	–	(1,307)	–
Net Earnings Attributable to Martin Marietta	**$ 425,386**	**11.9%**	**$ 288,792**	**8.8%**	**$ 155,601**	**5.8%**

[1] 2014 results reflect six months of TXI operations.

The comparative analysis in this Management's Discussion and Analysis of Financial Condition and Results of Operations is based on net sales and cost of sales. However, gross margin as a percentage of net sales represents a non-GAAP measure. The Corporation presents this ratio based on net sales, as it is consistent with the basis by which management reviews the Corporation's operating results. Further, management believes it is consistent with the basis by which investors analyze the Corporation's operating results given that freight and delivery revenues and costs represent pass-throughs and have no profit mark-up. Gross margin calculated as a percentage of total revenues represents the most directly comparable financial measure calculated in accordance with generally accepted accounting principles ("GAAP").

EBITDA is a widely accepted financial indicator of a company's ability to service and/or incur indebtedness. EBITDA is not defined by GAAP and, as such, should not be construed as an alternative to net earnings or operating cash flow.

Adjusted consolidated earnings from operations and adjusted earnings per diluted share ("Adjusted EPS") are non-GAAP measures which exclude the impact of TXI acquisition-related expenses, net; the impact of the markup of acquired inventory to fair value; and the gain or loss on business divestitures. The Corporation presents these measures to allow investors to analyze and forecast the Corporation's operating results given that these costs do not reflect the ongoing cost of its operations. These non-GAAP measures are not necessarily comparable to similarly-titled measures used by other companies.

The following tables present (i) the calculations of gross margin in accordance with GAAP and reconciliations of the ratios as percentages of total revenues to percentages of net sales; (ii) a reconciliation of net earnings attributable to Martin Marietta to consolidated EBITDA; and (iii) the reconciliations of adjusted consolidated earnings from operations and adjusted earnings per diluted share to the nearest measures in accordance with GAAP:

Consolidated Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 908,966**	$ 721,767	$ 522,360
Total revenues	**$ 3,818,749**	$ 3,539,570	$ 2,957,951
Gross margin	**23.8%**	20.4%	17.7%

Consolidated Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 908,966**	$ 721,767	$ 522,360
Total revenues	**$ 3,818,749**	$ 3,539,570	$ 2,957,951
Less: Freight and delivery revenues	**(241,982)**	(271,454)	(278,856)
Net sales	**$ 3,576,767**	$ 3,268,116	$ 2,679,095
Gross margin (excluding freight and delivery revenues)	**25.4%**	22.1%	19.5%

Aggregates Business Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 707,483**	$ 545,728	$ 383,214
Total revenues	**$ 3,308,341**	$ 2,905,744	$ 2,479,490
Gross margin	**21.4%**	18.8%	15.5%

Aggregates Business Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 707,483**	$ 545,728	$ 383,214
Total revenues	**$ 3,308,341**	$ 2,905,744	$ 2,479,490
Less: Freight and delivery revenues	**(211,556)**	(232,740)	(246,057)
Net sales	**$ 3,096,785**	$ 2,673,004	$ 2,233,433
Gross margin (excluding freight and delivery revenues)	**22.8%**	20.4%	17.2%

Mid-America Group Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 305,794**	$ 256,586	$ 216,883
Total revenues	**$ 1,017,098**	$ 926,251	$ 848,855
Gross margin	**30.1%**	27.7%	25.6%

Mid-America Group Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 305,794**	$ 256,586	$ 216,883
Total revenues	**$ 1,017,098**	$ 926,251	$ 848,855
Less: Freight and delivery revenues	**(71,975)**	(74,397)	(78,287)
Net sales	**$ 945,123**	$ 851,854	$ 770,568
Gross margin (excluding freight and delivery revenues)	**32.4%**	30.1%	28.1%

Southeast Group Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 57,108**	$ 34,197	$ 10,653
Total revenues	**$ 321,078**	$ 304,472	$ 274,352
Gross margin	**17.8%**	11.2%	3.9%

Southeast Group Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 57,108**	$ 34,197	$ 10,653
Total revenues	**$ 321,078**	$ 304,472	$ 274,352
Less: Freight and delivery revenues	**(16,627)**	(19,170)	(19,366)
Net sales	**$ 304,451**	$ 285,302	$ 254,986
Gross margin (excluding freight and delivery revenues)	**18.8%**	12.0%	4.2%

West Group Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 344,581**	$ 254,946	$ 155,678
Total revenues	**$ 1,970,165**	$ 1,675,021	$ 1,356,283
Gross margin	**17.5%**	15.2%	11.5%

West Group Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 344,581**	$ 254,946	$ 155,678
Total revenues	**$ 1,970,165**	$ 1,675,021	$ 1,356,283
Less: Freight and delivery revenues	**(122,954)**	(139,173)	(148,404)
Net sales	**$ 1,847,211**	$ 1,535,848	$ 1,207,879
Gross margin (excluding freight and delivery revenues)	**18.7%**	16.6%	12.9%

Cement Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 120,100**	$ 103,473	$ 52,469
Total revenues	**$ 375,813**	$ 475,725	$ 265,115
Gross margin	**32.0%**	21.8%	19.8%

Cement Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 120,100**	$ 103,473	$ 52,469
Total revenues	**$ 375,813**	$ 475,725	$ 265,115
Less: Freight and delivery revenues	**(11,368)**	(20,343)	(12,204)
Net sales	**$ 364,445**	$ 455,382	$ 252,911
Gross margin (excluding freight and delivery revenues)	**33.0%**	22.7%	20.7%

Magnesia Specialties Gross Margin in Accordance with GAAP

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 89,477**	$ 78,732	$ 84,594
Total revenues	**$ 257,059**	$ 245,879	$ 256,702
Gross margin	**34.8%**	32.0%	33.0%

Magnesia Specialties Gross Margin (Excluding Freight and Delivery Revenues)

years ended December 31 (add 000, except margin %)	**2016**	2015	2014
Gross profit	**$ 89,477**	$ 78,732	$ 84,594
Total revenues	**$ 257,059**	$ 245,879	$ 256,702
Less: Freight and delivery revenues	**(19,058)**	(18,371)	(20,596)
Net sales	**$ 238,001**	$ 227,508	$ 236,106
Gross margin (excluding freight and delivery revenues)	**37.6%**	34.6%	35.8%

Consolidated EBITDA

years ended December 31 (add 000)	**2016**	2015	2014
Net earnings attributable to Martin Marietta	**$ 425,386**	$ 288,792	$ 155,601
Add back:			
Interest expense	**81,677**	76,287	66,057
Income tax expense for controlling interests	**181,524**	124,793	94,730
Depreciation, depletion and amortization expense	**283,003**	260,836	220,552
Consolidated EBITDA	**$ 971,590**	$ 750,708	$ 536,940

Adjusted Earnings from Operations

years ended December 31 (add 000)	2015	2014
Earnings from operations in accordance with generally accepted accounting principles	$ 479,416	$ 314,873
Add back:		
Loss on the sale of California cement operations	29,063	–
Impact of selling acquired inventory due to markup to fair value	–	11,124
TXI acquisition-related expenses, net	–	42,689
Less:		
Gain on the sale of San Antonio asphalt operations	(13,123)	–
Adjusted earnings from operations	$ 495,356	$ 368,686

Adjusted Earnings Per Diluted Share

years ended December 31	2015	2014
Earnings per diluted share in accordance with generally accepted accounting principles	$ 4.29	$ 2.71
Add back:		
Loss on sale of California cement operations	0.31	–
Impact of selling acquired inventory due to markup to fair value	–	0.12
TXI acquisition-related expenses, net	–	0.91
Less:		
Gain on sale of San Antonio asphalt operations	(0.10)	–
Adjusted earnings per diluted share	$ 4.50	$ 3.74

Net Sales

Net sales by reportable segment are as follows:

years ended December 31 (add 000)	2016	2015	2014[1]
Aggregates Business:			
Mid-America Group	**$ 945,123**	$ 851,854	$ 770,568
Southeast Group	**304,451**	285,302	254,986
West Group	**1,847,211**	1,535,848	1,207,879
Total Aggregates Business	**3,096,785**	2,673,004	2,233,433
Cement	**364,445**	455,382	252,911
Magnesia Specialties	**238,001**	227,508	236,106
Less: Intersegment sales[2]	**(122,464)**	(87,778)	(43,355)
Total Consolidated	**$3,576,767**	$ 3,268,116	$ 2,679,095

[1] 2014 results reflect six months of TXI operations.
[2] Intersegment sales represent cement sales to the West Group.

Net sales by product line for the Corporation are as follows:

years ended December 31 (add 000)	2016	2015	2014[1]
Aggregates Business:			
Aggregates	**$ 2,060,875**	$ 1,896,143	$ 1,644,266
Asphalt/Paving	**341,444**	283,628	294,238
Ready Mixed Concrete	**902,636**	656,531	430,673
Less: Interproduct sales[2]	**(208,170)**	(163,298)	(135,744)
Total Aggregates Business	**3,096,785**	2,673,004	2,233,433
Cement	**364,445**	455,382	252,911
Magnesia Specialties	**238,001**	227,508	236,106
Less: Intersegment sales[3]	**(122,464)**	(87,778)	(43,355)
Total Consolidated	**$ 3,576,767**	$ 3,268,116	$ 2,679,095

[1] 2014 results reflect six months of TXI operations.
[2] Interproduct sales represents aggregates product line sales to the ready mixed concrete and asphalt/paving product lines.
[3] Intersegment sales represents cement product line sales to the ready mixed concrete product line.

Aggregates Product Line. Aggregates product line average selling price increases are as follows:

years ended December 31	2016	2015	2014
Mid-America Group	**4.3%**	4.7%	3.8%
Southeast Group	**7.1%**	5.4%	6.4%
West Group	**10.6%**	13.5%	8.8%
Aggregates Product Line	**7.3%**	8.0%	4.5%

The average selling price per ton for the aggregates product line was $12.88, $12.00 and $11.12 for 2016, 2015 and 2014, respectively.

In 2016 and 2015, the average selling price increase exceeded the Corporation's average of 4.2% for both the ten- and twenty-year periods ended December 31, 2016. The higher average selling price increase reflects supply and demand dynamics in the Corporation's markets. Average selling price increases in 2014 were in line with historical averages.

The following presents aggregates product line shipments for each reportable segment of the Aggregates business:

years ended December 31 Tons (add 000)	2016	2015	2014
Mid-America Group	**73,060**	68,611	64,947
Southeast Group	**19,396**	19,479	18,289
West Group	**66,170**	68,332	62,814
Aggregates Business	**158,626**	156,422	146,050

Aggregates product line shipments sold externally to customers and tons used in other product lines are as follows:

years ended December 31 Tons (add 000)	2016	2015	2014
Tons to external customers	**148,198**	147,197	138,222
Internal tons used in other product lines	**10,428**	9,225	7,828
Total Aggregates Tons	**158,626**	156,422	146,050

Aggregates product line volume variance by reportable segment is as follows:

years ended December 31	2016	2015	2014
Mid-America Group	**6.5%**	5.6%	3.1%
Southeast Group	**(0.4%)**	6.5%	6.0%
West Group	**(3.2%)**	8.6%	30.3%
Aggregates Product Line	**1.4%**	7.1%	13.7%

Shipments in 2016 and 2015 were negatively affected by wet weather, notably in the southwestern United States. Growth in 2016 was also hindered by certain infrastructure project delays, notably in Texas; a reduction in energy-sector shipments resulting from lower oil prices; and lower ballast shipments resulting from reduced activity on railroads. Aggregates product line volume strength in the Mid-America Group in 2016, relative to the other groups, is due to steady economic improvement, which is driving growth in office, retail, industrial and residential development in North Carolina and South Carolina.

Shipment growth in 2015 is primarily attributable to a full year of ownership of the legacy TXI aggregates operations, partially offset by the impact of historic levels of rainfall and a reduction in energy-sector shipments, notably for shale exploration. Shipment variances in 2015 for the Mid-America and Southeast Groups reflect the ongoing recovery in these markets, notably North Carolina, Georgia and Florida.

Aggregates-Related Downstream Operations. The Corporation's aggregates-related downstream operations include ready mixed concrete and asphalt and road paving businesses primarily located in the high-growth states of Texas and Colorado.

Average selling prices by product line for the Corporation's aggregates-related downstream operations are as follows:

years ended December 31	**2016**	2015	2014
Asphalt - tons	**$ 39.20**	$ 42.57	$ 41.26
Ready Mixed Concrete - cubic yards	**$ 104.26**	$ 96.28	$ 88.25

Unit shipments by product line for the Corporation's aggregates-related downstream operations are as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Asphalt Product Line:			
Tons to external customers	**1,023**	1,220	1,508
Internal tons used in road paving business	**2,131**	1,697	1,807
Total asphalt tons	**3,154**	2,917	3,315
Ready Mixed Concrete – cubic yards	**8,490**	6,707	4,779

The fluctuations in asphalt shipments reflect the sale of the Corporation's San Antonio asphalt operations in the fourth quarter of 2015 and the acquisition of additional asphalt and road paving operations in Colorado in the first quarter of 2016. The increase in ready mixed concrete shipments in 2016 is attributable to favorable market conditions in Texas and Colorado and acquired locations in Central Texas. The increase in shipments in 2015 is attributable to a full year of TXI operations acquired mid-year 2014.

Cement. The Cement segment contributed $364.4 million in net sales in 2016. Excluding $96.4 million of net sales attributable to the California cement business, divested on September 30, 2015, from the prior-year, net sales increased 1.5%. Cement shipments in 2016 and 2015 were negatively affected by significant amounts of precipitation in Texas. The business shipped 3.5 million and 4.6 million tons of cement in 2016 and 2015 (the California operations accounted for 1.1 million tons in 2015), respectively. In 2016, 1.2 million tons of shipments were used internally in the Corporation's production of ready mixed concrete products. The Corporation expects the percentage of cement shipments used in the ready mix business to increase in 2017 based on a full year of ownership of the ready mix business acquired mid-year 2016.

Net sales for the second half of 2014 were $252.9 million, of which $68 million related to the California cement operations.

Magnesia Specialties. Magnesia Specialties' 2016 record net sales of $238.0 million increased 4.6% compared with 2015, primarily attributable to the chemicals product line. 2015 net sales were negatively affected by lower domestic steel production and declined 3.6%.

Freight and Delivery Revenues and Costs

Freight and delivery revenues and costs represent pass-through transportation costs incurred when the Corporation arranges for a third-party carrier to deliver aggregates products to customers (see section Transportation Exposure on pages 64 through 66). These third-party freight costs are then billed to the customer.

Cost of Sales

Cost of sales increased 4.8% in 2016 and 18.1% in 2015, attributable to the increase in net sales of 9.4% and 22.0%, respectively. Significant precipitation hindered production and negatively affected operating leverage in both 2016 and 2015. Aggregates product line direct production cost per ton shipped for 2016 increased 3.8% compared with 2015, reflecting higher depreciation costs related to the Medina Rock and Rail capital project completed in central Texas at the end of 2015 and higher contract services for grading, drilling and short-term equipment rentals. On average, the Corporation paid $1.96 per gallon of diesel fuel in 2016 compared with $2.05 in 2015. The 2016 and 2015 cost per gallon reflects a fixed-price commitment for approximately 40% of the Corporation's diesel consumption that went into effect on July 1, 2015 and expired on December 31, 2016. The fixed price was $0.30 per gallon higher than the spot rate for the majority of the contract period resulting in an additional $13.2 million in costs. The diesel contract was not renewed for 2017.

Gross Profit

Gross profit (loss) by business is as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Aggregates Business:			
Aggregates	**$ 554,801**	$ 467,053	$ 324,093
Asphalt/Paving	**53,569**	35,734	19,992
Ready Mixed Concrete	**99,113**	42,942	39,129
Total Aggregates Business	**707,483**	545,729	383,214
Cement	**120,100**	103,473	52,469
Magnesia Specialties	**89,477**	78,732	84,594
Corporate	**(8,094)**	(6,167)	2,083
Total Consolidated Gross Profit	**$ 908,966**	$ 721,767	$ 522,360

The Corporation improved its consolidated gross profit $187.2 million in 2016 compared with 2015. The increase is supported by pricing strength and disciplined cost management and reflects growth in all businesses, led by the Aggregates business. Consolidated gross profit increased $199.4 million in 2015 compared with 2014, primarily driven by a full year of ownership of legacy TXI operations and pricing strength.

The following presents a rollforward of the Corporation's consolidated gross profit:

years ended December 31 (add 000)	**2016**	2015
Consolidated gross profit, prior year	**$ 721,767**	$ 522,360
Aggregates product line:		
Pricing	**138,286**	138,618
Volume	**26,446**	115,495
Production costs	**(60,150)**	(87,070)
Internal freight costs	**(22,193)**	(23,364)
Other costs, net	**5,361**	(719)
Change in aggregates product line gross profit	**87,750**	142,960
Aggregates-related downstream business	**74,005**	19,554
Cement	**16,627**	51,004
Magnesia Specialties	**10,745**	(5,862)
Corporate	**(1,928)**	(8,249)
Change in consolidated gross profit	**187,199**	199,407
Consolidated gross profit, current year	**$ 908,966**	$ 721,767

Internal freight costs represent freight expenses to transport materials from a producing quarry to a distribution yard. The fluctuation in these costs in 2016 reflects increased shipments by rail to distribution yards, coupled with increased costs from rail service providers. These costs in 2015 were favorably affected by lower energy prices compared with 2014.

The improvement in aggregates-related downstream business' gross profit in 2016 is due to increased demand and pricing growth. The Cement business' gross profit increase in 2016 is attributable to operational improvements, pricing strength and refunds and rebates from electrical providers. The growth in the Magnesia Specialties' gross profit from 2015 to 2016 is attributable to increased chemical sales, a decline in natural gas pricing and effective cost control. The gross profit change for acquired aggregates business operations and the Cement business in 2015 is due to the full year of ownership of legacy TXI operations.

Corporate gross (loss) profit includes depreciation on capitalized interest and unallocated operational expenses excluded from the Corporation's evaluation of business segment performance. For 2016 and 2015, the amount includes the variance between the contractual rate and the spot rate for diesel fuel under the fixed-price agreement. For 2014, the amount includes the settlement of a sales tax audit.

Gross profit (loss) by reportable segment for the Aggregates business is as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Aggregates Business:			
Mid-America Group	**$ 305,794**	$ 256,586	$ 216,883
Southeast Group	**57,108**	34,197	10,653
West Group	**344,581**	254,946	155,678
Total Aggregates Business	**707,483**	545,729	383,214
Cement	**120,100**	103,473	52,469
Magnesia Specialties	**89,477**	78,732	84,594
Corporate	**(8,094)**	(6,167)	2,083
Total Consolidated Gross Profit	**$ 908,966**	$ 721,767	$ 522,360

Gross margin (excluding freight and delivery revenues) by reportable segment is as follows:

years ended December 31	**2016**	2015	2014
Aggregates Business:			
Mid-America Group	**32.4%**	30.1%	28.1%
Southeast Group	**18.8%**	12.0%	4.2%
West Group	**18.7%**	16.6%	12.9%
Total Aggregates Business	**22.8%**	20.4%	17.2%
Cement	**33.0%**	22.7%	20.7%
Magnesia Specialties	**37.6%**	34.6%	35.8%
Total Consolidated	**25.4%**	22.1%	19.5%

Gross margin (excluding freight and delivery revenues) improvement for the Aggregates business reflects pricing strength in the aggregates and ready mixed concrete product lines and stronger demand in the ready mixed concrete business. (See section *Transportation Exposure* on pages 64 through 66.)

Magnesia Specialties business' 2016 gross margin (excluding freight and delivery revenues) expansion is attributable to increased sales and effective cost management. The 2015 gross margin (excluding freight and delivery revenues) was negatively affected by lower sales volumes which reduced operating leverage.

Selling, General and Administrative Expenses

SG&A expenses for 2016 were 6.9% of net sales, an increase of 20 basis points, and reflect higher performance-based incentive compensation costs partially offset by lower pension expense. In 2015, SG&A expenses increased 40 basis points over 2014, reflecting higher pension expense and the impact of net sales delayed by weather.

Acquisition-Related Expenses, Net

The Corporation incurred business development and acquisition integration costs (collectively "acquisition-related expenses, net") as part of its strategic growth plan. In 2015, these costs were principally TXI integration costs. In 2014, acquisition-related expenses, net, were related to the consummation of the TXI transaction and also included a nonrecurring $42.7 million gain on a divestiture required by the Department of Justice as a result of the TXI acquisition.

Other Operating (Income) and Expenses, Net

Among other items, other operating income and expenses, net, include gains and losses on the sale of assets; gains and losses related to certain customer accounts receivable; rental, royalty and services income; accretion expense, depreciation expense; and gains and losses related to asset retirement obligations; and research and development costs. These net amounts represented income of $8.0 million in 2016, an expense of $15.7 million in 2015 and income of $4.6 million in 2014. The net expense for 2015 reflects the net impact on the sale of the California cement operations and the San Antonio asphalt operations.

Earnings from Operations

Consolidated earnings from operations were $667.3 million, $479.4 million and $314.9 million in 2016, 2015 and 2014, respectively. Excluding the net impact from the sale of the California cement operations and the San Antonio asphalt operations, adjusted consolidated earnings from operations for 2015 were $495.4 million. This is a $126.7 million improvement over adjusted consolidated earnings from operations for 2014 of $368.7 million, which excludes TXI acquisition-related expenses, net, and the impact of the one-time markup of acquired inventory.

Interest Expense

Interest expense of $81.7 million in 2016 increased $5.4 million over 2015 due to an increase in average debt outstanding, coupled with an increase in variable interest rates in 2016 compared with 2015. Interest expense of $76.3 million in 2015 increased $10.2 million over 2014, attributable to the assumed and refinanced $700 million of TXI-related debt being outstanding for a full year in 2015 versus only six months in 2014.

Other Nonoperating (Income) and Expenses, Net

Other nonoperating income and expenses, net, are comprised

generally of interest income, foreign currency transaction gains and losses, and net equity earnings from nonconsolidated investments. Consolidated other nonoperating income and expenses, net, was income of $21.4 million, $10.7 million and $0.4 million in 2016, 2015 and 2014, respectively. The higher income in 2016 was due to the remeasurement of an interest held in a joint venture, gains on foreign currency transactions and increased earnings from nonconsolidated investments. The higher income in 2015 over 2014 was primarily due to increased earnings from nonconsolidated investments.

Taxes on Income

Variances in the estimated effective income tax rates, when compared with the federal corporate tax rate of 35%, are due primarily to the statutory depletion deduction for mineral reserves, the effect of state income taxes, the domestic production deduction, the tax effect of nondeductibility of goodwill related to divestitures of businesses and the impact of foreign income or losses for which no tax expense or benefit is recognized. Additionally, certain acquisition-related expenses, net, have limited deductibility for income tax purposes.

The permanent benefit associated with the statutory depletion deduction for mineral reserves is typically the significant driver of the estimated effective income tax rate. The statutory depletion deduction is calculated as a percentage of sales subject to certain limitations. Due to these limitations, changes in sales volumes and pretax earnings may not proportionately affect the statutory depletion deduction and the corresponding impact on the effective income tax rate on continuing operations. However, the impact of the depletion deduction on the estimated effective tax rate is inversely affected by increases or decreases in pretax earnings.

The Corporation's estimated effective income tax rate for the years ended December 31 are as follows:

2016	**29.9%**
2015	30.2%
2014	38.1%

The effective income tax rate for full-year 2014 was higher than the Corporation's historical rate as a result of the acquisition of TXI, including the limited deductibility of certain acquisition-related expenses, net, and the nondeductibility of goodwill written off as part of the required divestiture. These factors were partially offset by the income tax benefits resulting from the exercise of converted stock awards issued to former TXI personnel. Excluding the TXI transaction effects, the estimated effective income tax rate would have been 30%, in line with current rates.

Currently, the United States Congress is considering changes in the corporate tax code that, if enacted, could affect the Corporation's net earnings. While the current expectation is a reduction in corporate tax rates, which should favorably affect net earnings, the Corporation cannot be certain of the impact of the elimination of tax preferences, capital investment deductibility or border adjustments, among other considerations.

Net Earnings Attributable to Martin Marietta and Earnings Per Diluted Share

Net earnings attributable to Martin Marietta were $425.4 million, or a record $6.63 per diluted share, a 55% increase over 2015. In 2015, net earnings attributable to Martin Marietta were $288.8 million, or $4.29 per diluted share. Excluding the net impact from the sale of the California cement operations and the San Antonio asphalt operations, adjusted earnings per diluted share were $4.50. For 2014, net earnings attributable to Martin Marietta were $155.6 million, or $2.71 per diluted share. Excluding the impact of acquisition-related expenses, net, and the increase in cost of sales for acquired inventory, adjusted earnings per diluted share were $3.74.

BUSINESS ENVIRONMENT

The sections on *Business Environment* on pages 54 through 70, and the disclosures therein, provide a synopsis of the business environment trends and risks facing the Corporation. However, no single trend or risk stands alone. The relationship between trends and risks is dynamic, and the economic climate can exacerbate this relationship. This discussion should be read in this context.

Aggregates and Cement Business' Trends

The Aggregates and Cement businesses typically serve customers in construction aggregates-related markets. These businesses are strongly affected by activity within the construction marketplace, which is cyclical in nature. Consequently, the Corporation's profitability is sensitive to national, regional and local economic conditions and especially to cyclical swings in construction spending. The cyclical swings in construction spending are in turn affected by fluctuations in interest rates; access to capital markets; levels of public-sector infrastructure funding; and demographic, geographic and population dynamics. Per the U.S. Census Bureau, total construction spending increased 5% in 2016 compared with 2015.

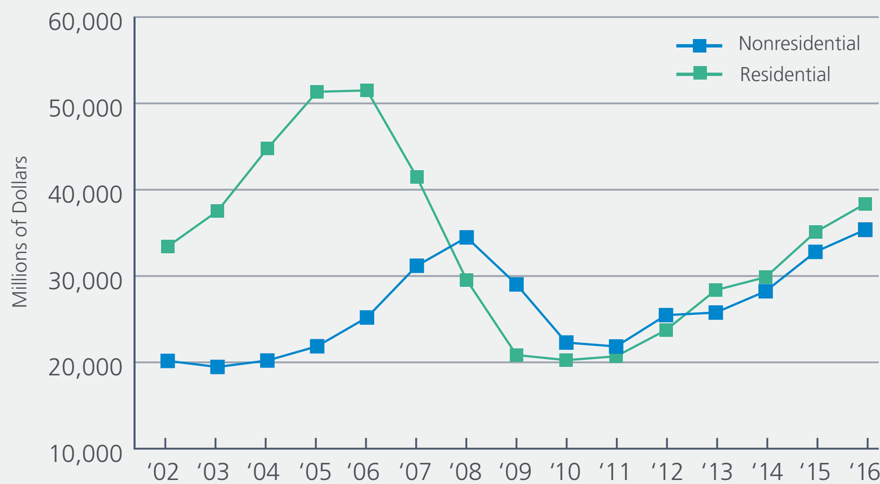
The heavy construction business, including the production of aggregates and cement products, is conducted outdoors. Therefore, erratic weather patterns, precipitation and other weather-related conditions, including snowstorms, droughts, flooding and hurricanes, can significantly affect production schedules, shipments, costs, efficiencies and profitability of the Aggregates and Cement businesses. Generally, the financial results for the first and fourth quarters are significantly lower than the second and third quarters due to winter weather.

End-Use Trends

- *According to the U.S. Geological Survey, for the nine-months ended September 30, 2016, the latest available data, estimated construction aggregates consumption increased 5% and estimated cement consumption increased 3% compared with the nine-months ended September 30, 2015*
- *Spending statistics, from 2015 to 2016, according to U.S. Census Bureau:*
  - *Total value of construction put in place increased 5%*
  - *Public-works construction spending decreased 1%*
  - *Private nonresidential construction market spending increased 8%*
  - *Private residential construction market spending increased 5%*

The Aggregates and Cement businesses sell products principally to contractors in connection with highway and other public infrastructure projects as well as nonresidential and residential development. While construction spending in the public and private market sectors is affected by economic cycles, the historic level of spending on public infrastructure projects has been comparatively more stable as governmental appropriations and expenditures are typically less interest rate-sensitive than private-sector spending. Obligation of federal funds is a leading indicator of highway construction activity in the United States. Before a state or local department of transportation can solicit bids on an eligible construction project, it enters into an agreement with the Federal Highway Administration to obligate the federal government to pay its share of the project cost. Federal obligations are subject to annual funding appropriations by Congress. Management believes public-works projects have historically accounted for approximately 50% of the total annual aggregates and cement consumption in the United States. Additionally, management believes exposure to fluctuations in nonresidential and residential, or private-sector, construction spending is lessened by the business' mix of public sector-related shipments. However, due to the significant (and historically unusual) length of time without a multi-year federal highway bill prior to the passage of the FAST Act, over the last several years private construction has become a larger percentage of overall construction investment. Consistent with this trend, the infrastructure market accounted for approximately 39% of the Corporation's aggregates product line shipments in 2016, consistent with 2015 but lower than the most recent five-year average of 44%.

The nonresidential construction market accounted for approximately 32% of the Corporation's aggregates product line shipments in 2016. According to the U.S. Census Bureau, spending for the private nonresidential construction market increased in 2016 compared with 2015. Historically, half of the Corporation's nonresidential construction shipments have been used for office and retail projects, while the remainder has been used for heavy industrial and capacity-related projects, including energy-sector projects, namely development of shale-based natural gas fields. However, low oil prices in the latter part of 2015 and throughout 2016 has suppressed shale exploration activity. In 2016, the Corporation shipped approximately 1.5 million tons to the energy-sector compared with approximately 3.6 million tons in 2015 and 7.5 million tons in 2014.



Source: U.S. Census, Construction Spending

The residential construction market accounted for approximately 21% of the Corporation's aggregates product line shipments in 2016. The Corporation's exposure to residential construction is typically split evenly between aggregates used in the construction of subdivisions (including roads, sidewalks, and storm and sewage drainage) and aggregates used in new home construction. Therefore, the timing of new subdivision starts, as well as new home starts, equally affects residential volumes. Private residential construction spending increased 5% in 2016 compared with 2015, according to the U.S. Census Bureau.

The remaining 8% of the Corporation's 2016 aggregates product line shipments was to the ChemRock and Rail construction market, which includes ballast and agricultural limestone. Ballast shipments declined in 2016 due to lower railroad activity, correlating with lower energy-related rail shipments. Drier weather and favorable operating conditions led to increased shipments of agricultural limestone in 2016 over 2015. Weather conditions in 2015 were abnormally wet, limiting field applications and influencing deferred stockpiling.

Pricing Trends

Pricing on construction projects is generally based on terms committing to the availability of specified products at an agreed-upon price during a stated period. While residential and nonresidential construction jobs usually are completed within one year, infrastructure contracts can require several years to complete. Therefore, changes in prices can have a lag time before taking effect while the Corporation sells aggregates products under existing price agreements. Pricing escalators included in multi-year infrastructure contracts somewhat mitigate this effect. However, during periods of sharp or rapid increases in production costs, multi-year infrastructure contract pricing may provide only nominal pricing growth. The Corporation also implements mid-year price increases where appropriate.

In 2016, the average selling price for the aggregates product line increased 7.3%, in line with management's expectations. Opportunities to increase pricing will occur on a market-by-market basis. Management believes 2017 aggregates product line pricing growth will exceed the Corporation's 20-year annual average, 4.2% and correlate, after consideration of a 6-to-12-month lag factor, with changes in demand. Pricing is determined locally and is affected by supply and demand characteristics of the local market.

Aggregates and Cement Business' Risks

Federal and State Highway Transportation Funding

Public-sector construction projects are funded through a combination of federal, state and local sources. The federal highway bill provides annual funding for public-sector highway construction projects and includes spending authorizations, which represent the maximum financial obligation that will result from the immediate or future outlays of federal funds for highway and transit programs. The federal government's surface transportation programs are financed mostly through the receipts of highway user taxes placed in the Highway Trust Fund, which is divided into the Highway Account and the Mass Transit Account. Revenues credited to the Highway Trust Fund are primarily derived from a federal

gas tax, a federal tax on certain other motor fuels and interest on the accounts' accumulated balances. Of the currently imposed federal gas tax of $0.184 per gallon, which has been static since 1993, $0.15 is allocated to the Highway Account of the Highway Trust Fund.

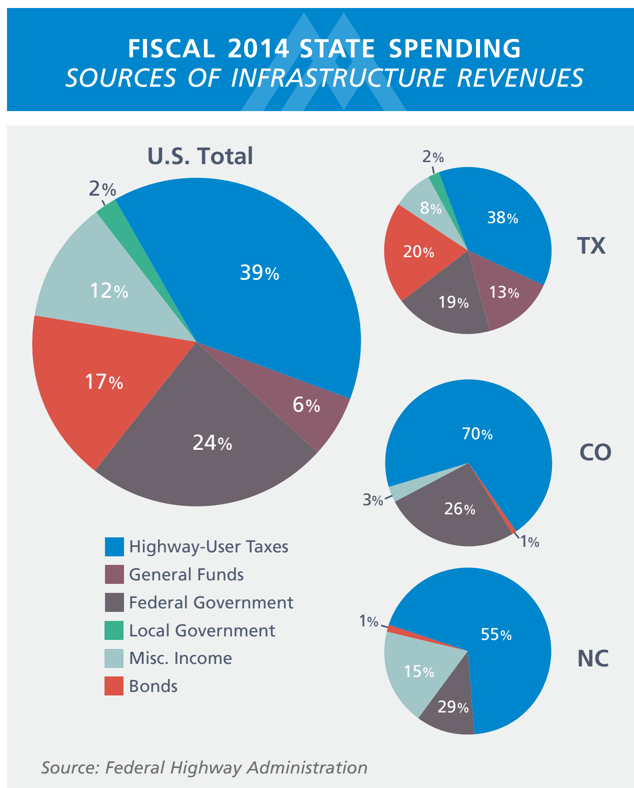
Federal highway laws require Congress to annually appropriate funding levels for highways and other programs. Once the annual appropriation is passed, federal funds are distributed to each state based on formulas (apportionments) or other procedures (allocations). Apportioned and allocated funds generally must be spent on specific programs as outlined in the federal legislation. Most federal funds are available for four years. Once the federal government approves a state project, funds are committed and considered spent regardless of when the cash is actually spent by the state and reimbursed by the federal government. According to the Federal Highway Administration, funds are generally spent by the state over a period of years, with 27% in the year of funding authorization, 41% in the succeeding year, 16% in the third year and the remaining 16% in the fourth year and beyond.

Following 36 shorter-term extensions since the expiration of predecessor legislation, *Moving Ahead for Progress in the 21st Century* ("MAP-21"), a five-year federal highway bill, the FAST Act, was signed into law in December 2015. The FAST Act reauthorizes federal highway and public transportation programs and stabilizes the Highway Trust Fund. $207.4 billion of the FAST Act funding will be apportioned to the states, with a 5.1% increase over actual fiscal year 2015 apportionments in 2016 and then inflationary increases in subsequent years. Meaningful impact from the FAST Act is expected beginning in 2017.

The FAST Act retains the programs supported under MAP-21, but with some changes. Specifically, *Transportation Infrastructure Finance and Innovation Act* ("TIFIA"), a U.S. Department of Transportation alternative funding mechanism, which under MAP-21 provided three types of federal credit assistance for nationally or regionally significant surface transportation projects, now allows more diversification of projects. TIFIA is designed to fill market gaps and leverage substantial private co-investment by providing projects with supplemental or subordinate debt which is not subject to national debt ceiling challenges or sequestration. Since inception, TIFIA has provided more than $25 billion of credit assistance to over 50 projects representing over $90 billion in infrastructure investment. Under the FAST Act, annual TIFIA funding decreases and ranges from $275 million to $300 million, but no longer requires the 20% matching funds from state departments of transportation. Consequently, states can advance construction projects immediately with potentially no upfront outlay of state department of transportation dollars. TIFIA requires projects to have a revenue source to pay back the credit assistance within a 30-to-40 year period. Moreover, TIFIA funds may represent up to 49% of total eligible project costs for a TIFIA-secured loan and 33% for a TIFIA standby line of credit. Therefore, the TIFIA program has the ability to significantly leverage construction dollars. Each dollar of federal funds can provide up to $10 in TIFIA credit assistance and support up to $30 in transportation infrastructure investment. Private investment in transportation projects funded through TIFIA is particularly attractive, in part due to the subordination of public investment to private. Management believes TIFIA could provide a substantial boost for state department of transportation construction programs well above what is currently budgeted. As of January 2017, TIFIA-funded projects for the Corporation's top five sales-generating states exceeded $22 billion.

Excluding TIFIA-approved projects, states are required to match funds at a predetermined rate in order to receive federal funds for highways. Matching levels vary depending on the type of project. If a state is unable to match its allocated federal funds, funding is forfeited and reallocated to states providing the appropriate matching funds. Although a significant portion of state highway construction programs are financed from highway user fees, significant increases in federal infrastructure funding typically require state governments to increase highway user fees to match federal spending. While states rarely forfeit federal highway funds, the possibility of forfeiture increases when states face declining tax revenues and struggle to balance budgets.

Given that most states are required to balance their budgets, reductions in revenues generally require a reduction in states' expenditures. However, the impact of state revenue reductions on highway spending will vary depending on whether the spending comes from dedicated revenue sources, such as highway user fees, or whether portions are funded with general funds. Based on national averages, user taxes represent the largest component of highway revenues, averaging 39% in fiscal year 2014, the latest available statistic. The use of general funds as a percentage of each state's



highway revenues varies, with a national average of 6% in fiscal year 2014, the latest available statistic. Therefore, state budget spending cuts typically only affect a small percentage of a state's highway spending.

States continue to play an expanding role in infrastructure funding. In addition to federal appropriations, each state funds its infrastructure spending from specifically allocated amounts collected from various user taxes, typically gasoline taxes and vehicle fees. Over the past 24 months, states have taken on a significantly larger role in funding infrastructure investment, including initiating special-purpose taxes and raising gas taxes. Management believes that innovative financing at the state level, such as bond issuances, toll roads and tax initiatives, will grow at a faster rate than federal funding. State spending on infrastructure generally leads to increased growth opportunities for the Corporation. The level of state public-works spending is varied across the nation and dependent upon individual state economies. The degree to which the Corporation could be affected by a reduction or slowdown in infrastructure spending varies by state. The state economies of the Aggregates business' five largest sales-generating states may disproportionately affect the Corporation's financial performance.

The need for surface transportation improvements significantly outpaces the amount of available funding. A large number of roads, highways and bridges built following the establishment of the Interstate Highway System in 1956 are now in need of major repair or reconstruction. According to The Road Information Program ("TRIP"), a national transportation research group, vehicle travel on United States highways increased 38% from 1990 to 2012, while new lane road mileage increased only 4% over the same period. TRIP also reports that 14% of the nation's major roads are in poor condition and 25% of the nation's bridges are structurally deficient or functionally obsolete. Currently, the Federal Highway Administration estimates that $170 billion is needed in annual capital investment through 2028 to significantly improve the current conditions and performance of the nation's highways. During fiscal 2011, the latest data available from the Office of Highway Policy Information, $93.9 billion was spent for surface transportation projects by federal, state and local governments. President Trump has proposed additional investment over the next decade to rebuild the country's infrastructure. Any such measures will require Congressional approval.

Transportation investments generally boost the national economy by enhancing mobility and access and by creating jobs, which is a priority of many of the government's economic plans. According to the Federal Highway Administration, every $1 billion in federal highway investment creates approximately 28,000 jobs. The number of jobs created is dependent on the nature and aggregates intensity of the projects. Approximately half of the Aggregates business' net sales to the infrastructure market come from federal funding authorizations, including matching funds from the states. For each dollar spent on road, highway and bridge improvements, the Federal Highway Administration estimates an average benefit of $5.20 is recognized in the form of reduced vehicle maintenance costs, reduced delays, reduced fuel consumption, improved safety, reduced road and bridge maintenance costs and reduced emissions as a result of improved traffic flow.

Other Public-Sector Construction Exposure

In addition to highways and bridges, transportation infrastructure includes aviation, mass transit, and ports and waterways. Public-sector construction related to transportation infrastructure can be aggregates intensive.

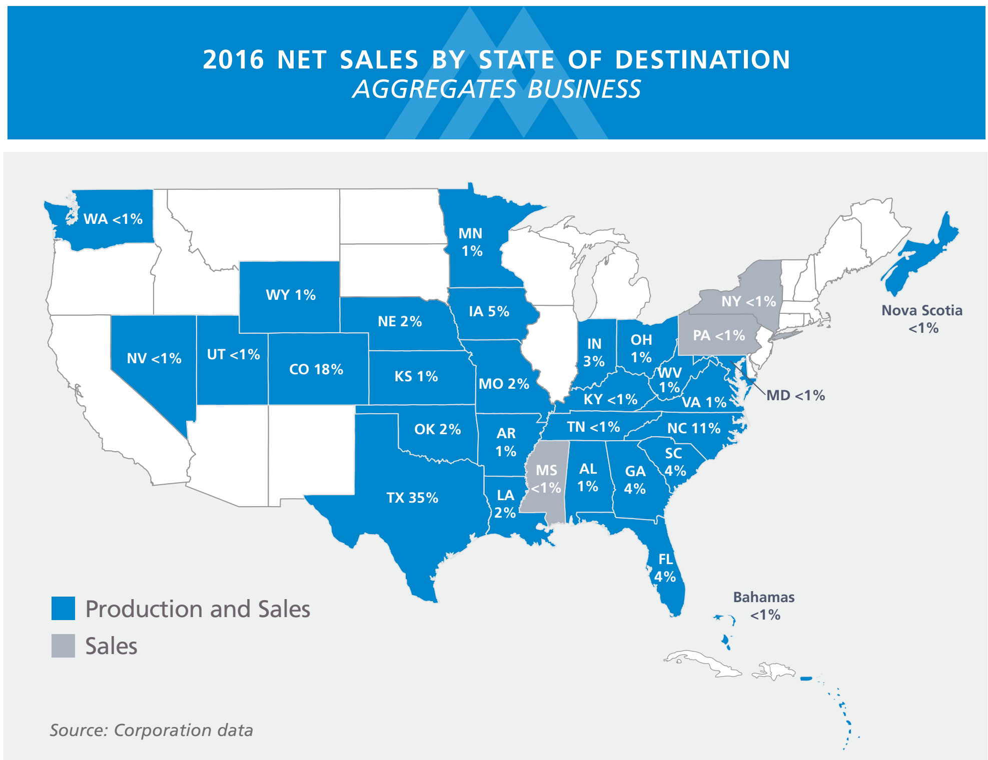
According to the *American Road and Transportation Builders Association* ("ARTBA"), airport construction spending was $13.1 billion during 2016 and is forecasted to be relatively flat in 2017. Spending on airport terminal and related work was $8.3 billion and runway work was $4.8 billion in 2016.

Construction spending for mass transit projects, which include subways, light rail and railroads, was $19.3 billion in 2016, according to ARTBA, and is expected to increase 5% in 2017. Railroad construction continues to benefit from economic growth, which generate needs for additional maintenance and improvements. According to ARTBA, subway and light rail work is expected to benefit slightly from the FAST Act.

Port and waterway construction spending was $2.1 billion in 2016 and is forecasted to be flat in 2017.

Top Five Sales-Generating States

The Aggregates business' top five sales-generating states, namely Texas, Colorado, North Carolina, Iowa and Georgia, together accounted for 73% of its 2016 net sales by state of destination. The top ten sales-generating states, which also include South Carolina, Florida, Indiana, Louisiana and Nebraska, together accounted for 87% of the Aggregates business' 2016 net sales by state of destination.



Texas is a vibrant market supported by employment gains and a growing population, combined with a healthy state Department of Transportation ("DOT") program. Notably, Texas is the third-ranked state for job growth while nationally Dallas-Fort Worth is the second-ranked metro area in the country, fundamentals that should further enhance construction investment. Additionally, according to a Census Bureau report issued May 2016, five of the nation's top eight cities for population growth, namely Austin, Houston, San Antonio, Dallas and Fort Worth, were in Texas. Further, Texas was home to five of the top eleven fastest-growing cities. Overall, the population in Texas grew 10.4% from 2010 to 2016, adding 2.6 million residents. Population growth in Texas supports aggregates consumption where an average of eight to 12 tons per capita is consumed annually. The Texas DOT continues to operate with a strong budget and let $7.5 billion of projects in fiscal 2016 and estimates letting $7.2 billion in fiscal 2017. In fact, Texas DOT has committed to letting over $65 billion of projects over the next ten years. Funding for highway construction comes from dedicated sources, including Proposition 1 and 7, as opposed to the use of general funds. Proposition 7 is estimated to provide an additional $2.0 billion of annual funding for non-toll roads beginning in fiscal 2018 and is expected to increase after 2019. On November 8, 2016, voters approved $990 million of additional statewide transportation funding, including a $720 million transportation bond in Austin. Although lower oil prices have negatively affected aggregates shipments supporting shale exploration activity, growth in other sectors has offset the decline. Texas ranked 6th in single family permit growth for the trailing-twelve months ended December 2016, with Austin and Dallas ranking second and sixth, respectively, for permit growth on a metropolitan level. Additionally, Austin and Dallas ranked fourth and sixth nationally in housing

growth for 2016. Nonresidential construction for the state declined 13% compared to 2015; however, Dallas and Austin were ranked 8th and 17th, respectively, nationally among metropolitan areas for nonresidential construction in 2016.

The Colorado economy has a diverse economic base and remains strong, with job growth in the top twenty nationally. The unemployment rate has declined to 3.0% at December 31, 2016, its lowest since 2007. In the Census Bureau's population estimate report, Colorado has been in the top ten nationally in population growth for the past five years, boasting a 9.7% increase of residents from 2010 to 2016. Colorado's residential market continues to expand as developers struggle to keep pace with demand. In fact, the state ranked in the top ten nationally for growth in residential starts. The nonresidential market remains positive, leading Colorado to be ranked in the top ten states in the country. The Colorado DOT budget is expected to exceed $1.4 billion in 2017, with continued support from the *Responsible Acceleration of Maintenance and Partnerships*, or RAMP, program through fiscal 2018. Further, an additional $250 million of flood mitigation funds were awarded late in 2016 for reconstruction efforts from the 2013 historic flooding.

The North Carolina economy, driven by population and job growth, looks positive for 2017. Nationally, the state ranked 12th in population change from 2010 to 2016, growing approximately 6%. The United States Census Bureau projects the state's population to increase 2 million by 2030, making it the seventh most populated state. Increasing jobs at 2% for the trailing-twelve months ended December 2016, North Carolina will continue to see jobs added with businesses looking to expand operations in the state. Pepsi Bottling Ventures, Lending Tree, Mountaire Farms and Lotus Bakeries are a few of the businesses that have collectively committed over $200 million of investment in operations in North Carolina. The infrastructure market has shown solid growth in awards, driven in part by the TIFIA-backed I-77 high-occupancy toll ("HOT") lanes project north of Charlotte. The 26-mile expansion of I-77 is a $655 million, multi-year project expected to be complete in the latter part of 2018. In the November 2016 elections, North Carolina voters approved all transportation referendums, totaling $1.2 billion of additional funding.

The economy of Iowa, one of the Corporation's most stable markets over the past several years, is highly dependent on agriculture and related manufacturing industries and continues to show signs of steady expansion. Iowa is the largest corn and pork-producing state in the nation, and the Corporation's agricultural lime volumes are dependent on, among other things, weather, demand for agricultural commodities, including corn and soybeans, commodity prices, farm and land values as well as funding from the *Agricultural Act of 2014*, the five-year domestic farm bill signed into law on February 7, 2014. Ranking sixth in the nation for lowest cost of doing business, the state is attractive for starting and expanding businesses due to enticing tax incentives offered by the state. Coupled with that fact, the state is expected to be fossil fuel independent by 2050, making primarily wind-based energy production cost-effective, another driver of economic expansion. With that said, the nonresidential construction market is expected to benefit as expansion continues in the state for companies like Google, Microsoft and Facebook. Additionally, Alliant Energy Corp., Blue Bunny and MidAmerican Energy have each announced plans to expand or continue to expand facilities in Iowa. The state's seasonally-adjusted unemployment rate of 3.6% remains one of the lowest in the country. The state DOT budget is financed with federal funds and dedicated highway-user tax revenues; no general funds are

ESTIMATED POPULATION

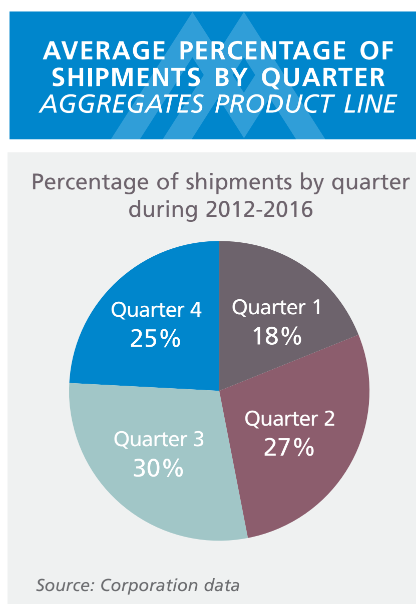
Top 10 Sales-Generating States of Aggregates Business	Percent Change in Population 2010 to 2016	Population Change Rank	Projected Population Rank 2016*
Texas	10.4%	2	2
Colorado	9.7%	4	21
North Carolina	6.1%	12	9
Iowa	2.8%	29	31
Georgia	6.1%	13	8
South Carolina	7.0%	10	23
Florida	9.4%	5	3
Indiana	2.2%	31	17
Louisiana	3.0%	28	25
Nebraska	4.2%	22	38

Source: U.S. Census Bureau, Population Estimates Division
**Based on 2000 Census*

used. State funding will benefit from a $0.10 increase in the gas tax, approved in 2015, which is expected to provide $215 million annually. Since taking effect in March 2015, the $0.10 tax increase has generated $335 million through September 2016. The Iowa Transportation Commission's Five-Year Highway Program forecasts $3.2 billion to be available for highway right-of-way and construction investments for the period 2016 through 2020. Of this, more than $1.3 billion is targeted for modernizing Iowa's existing highway system and enhancing highway safety.

Georgia continues to recover from the Great Recession as evidenced by remaining in the top ten states for job growth and reporting 6% population growth from 2010 to 2016. Job growth is likely to continue as corporations, including UPS, The Weather Company, Athenahealth and Linde Group, continue to expand in Georgia. Mercedes-Benz USA released plans for their new $100 million headquarters in Atlanta. The project is scheduled to be built on a 12-acre tract near Sandy Springs and is expected to be completed in the first quarter of 2018. The state ranks in the top five in residential construction starts, with notable strength in the Atlanta market, ranking first on a metropolitan level in the United States. The infrastructure construction market is expanding and will significantly benefit from the passage of a gas tax increase and other funding mechanisms that will add approximately $1 billion, or essentially double, the state's annual construction budget. Further, Georgia voters approved five local sales tax increases to provide $4 billion for road and transit projects, spanning a five- to 40-year period. State highway funding sources include motor fuel taxes, special fuel taxes, state bonds and state gas taxes. Additionally, the Transportation Special-Purpose Local-Option Sales Tax ("T-SPLOST") program is starting to provide benefit in the southern part of Georgia. In January 2016, Governor Nathan Deal announced a comprehensive infrastructure maintenance plan, which includes a $2.2 billion, 18-month project list, and a longer term 10-year plan, representing more than $10 billion in investment. Some elements of the Governor's plan include the addition of toll lanes along the I-285 loop in Atlanta, interchange upgrades for I-20 and I-285 and additional capacity of metro sections of I-75, I-85 and GA 400. The state's port authority received approval for a 100-acre expansion project of its auto terminal at Port Brunswick.

AVERAGE PERCENTAGE OF SHIPMENTS BY QUARTER
AGGREGATES PRODUCT LINE



Source: Corporation data

Weather Impacts

Erratic weather patterns, seasonal changes and other weather-related conditions can significantly affect the construction aggregates industry. Production and shipment levels for aggregates, cement, asphalt, ready mixed concrete and road paving materials correlate with general construction activity, most of which occurs in the spring, summer and fall. Thus, production and shipment levels vary by quarter. Operations concentrated in the northern and midwestern United States generally experience more severe winter weather conditions than operations in the Southeast and Southwest.

Excessive rainfall, and conversely excessive drought, can also jeopardize production, shipments and profitability in all markets served by the Corporation. The last two years have brought an unprecedented amount of precipitation to Texas and other areas of the United States. In fact, not only did 2015 set a new rainfall record for Texas, the 24-month period ending September 2016 set a new two-year record for the state, with an average annual rainfall of 75 inches. Parts of Texas were significantly higher than average, including Dallas, which experienced approximately 100 inches of rainfall during this period.

The Corporation's operations in the southeastern and Gulf Coast regions of the United States and the Bahamas are at risk for hurricane activity, most notably in August, September and October. In October 2016, rainfall along the eastern seaboard of the United States from Hurricane Matthew, a category-5 hurricane, approximated 13.6 trillion gallons. Additionally, Hurricane Matthew was the first major hurricane on record to make landfall in the Bahamas.

Cost Structure

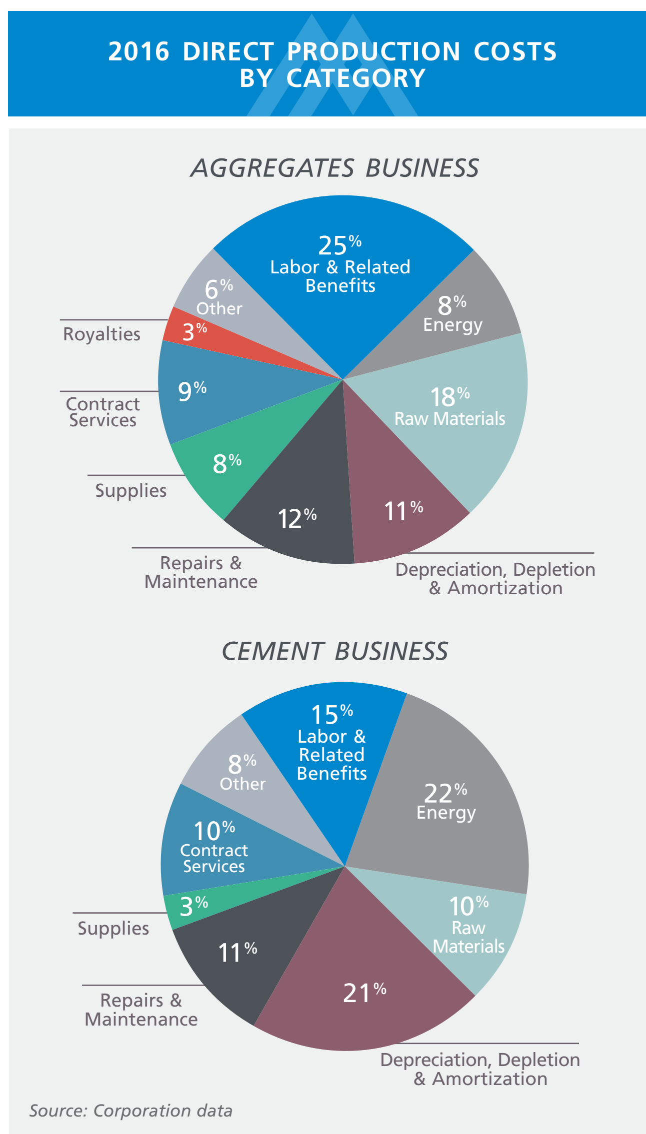
- *Top three cost categories represent 55% of the Aggregates business' total direct production costs*
- *Top three cost categories for the Cement business represent 58% of total direct production costs*
- *Health and welfare costs increased approximately 4% per year over past five years compared with national average of 6% over same period; Corporation's costs expected to increase 4% to 5% in 2017*
- *Pension expense decreased from $37.3 million in 2015 to $32.8 million in 2016; pension costs expected to approximate $37.0 million in 2017 (2016 and 2015 amounts exclude nonrecurring termination benefits related to the acquisition of TXI)*

Total direct production costs for the Aggregates business are components of cost of sales incurred at the quarries, distribution yards, and asphalt and ready mixed concrete plants. These costs exclude resale materials, freight expenses to transport materials from a producing quarry to a distribution yard and production overhead.

Generally, the top seven categories of total direct production costs for the Aggregates business are (1) labor and related benefits; (2) energy; (3) raw materials; (4) depreciation, depletion and amortization; (5) repairs and maintenance; (6) supplies; and (7) contract services. In 2016, these categories represented 91% of the Aggregates business' total direct production costs.

Fixed costs are expenses that do not vary based on production or sales volume. Management estimates that, under normal operating capacity, 40% of the Aggregates business' cost of sales is fixed, another 30% is semi-fixed and 30% is variable in nature. Accordingly, the Corporation's operating leverage can be substantial. Variable costs are expenses that fluctuate with the level of production volume. Production is the key driver in determining the levels of variable costs, as it affects the number of hourly employees and related labor hours. Further, diesel, supplies, repairs and freight costs also increase in connection with higher production volumes.

Generally, when the Corporation invests capital to replace facilities and equipment, increased capacity and productivity, along with reduced repair costs, can offset increased fixed depreciation costs. However, when aggregates demand weakens, the increased productivity and related efficiencies may not be fully realized, resulting in under absorption of fixed costs. Further, the Aggregates business continues to operate at a level significantly below capacity, thereby restricting the Corporation's ability to capitalize $71.3 million and $75.1 million of costs at December 31, 2016 and 2015, respectively, which could have been inventoried if operating at capacity.

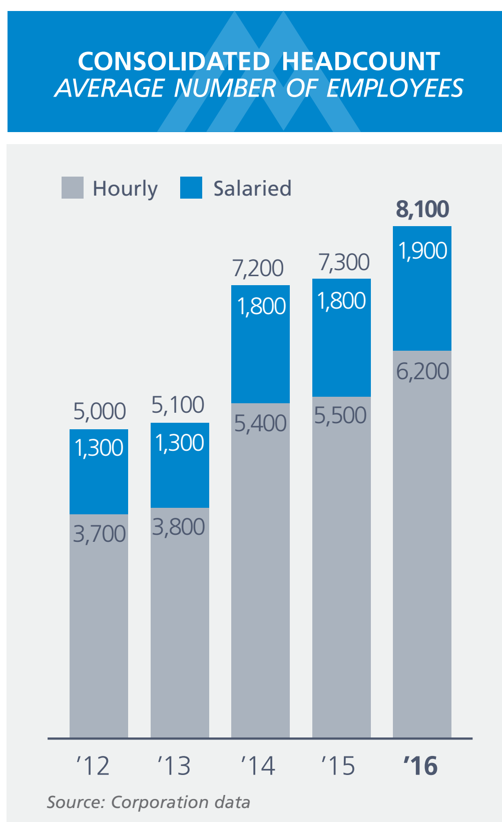


Diesel fuel, which averaged $1.96 per gallon in 2016 and $2.05 per gallon in 2015, represents the single largest component of energy costs for the Aggregates business. Changes in energy costs also affect the prices that the Corporation pays for supplies, including explosives, conveyor belting and tires. Further, the Corporation's contracts of affreightment for shipping aggregates on its rail and waterborne distribution

network typically include provisions for escalations or reductions in the amounts paid by the Corporation if the price of fuel moves outside a contractual range.

The Cement business is a capital-intensive operation with high fixed costs to run plants that operate all day, every day, with the exception of maintenance shut downs. The top cost in cement manufacturing is energy, which represented 22% of total production costs in 2016 and 26% in 2015. Depreciation and labor followed with 21% and 15%, respectively, of total production costs.

The Corporation also consumes natural gas, coal and petroleum coke in the Magnesia Specialties manufacturing processes. For 2016, the Corporation's average cost per MCF (thousand cubic feet) for natural gas decreased 25% from 2015. The Corporation has fixed price agreements for 100% of its 2017 coal needs, approximately 25% of its 2017 natural gas needs and 50% of its 2017 petroleum coke needs.



The Corporation's aggregates-related downstream businesses requires the use of products as raw materials. Liquid asphalt and cement are key raw materials in the production of hot mix asphalt and ready mixed concrete, respectively. Fluctuations in prices for these raw materials directly affect the Corporation's operating results.

Wage inflation and increases in labor costs may be somewhat mitigated by enhanced productivity in an expanding economy. Further, workforce reductions resulting from plant automation and mobile fleet right-sizing have helped the Corporation control rising labor costs. During economic downturns, the Corporation reviews its operations and, where practical, temporarily idles certain sites. The Corporation is able to serve these markets with other open facilities that are in close proximity. Further, in certain markets, management can create production "super crews" that work at various locations within a district. For example, within a market, a crew may work three days per week at one quarry and the other two workdays at another quarry within that market. This has allowed the Corporation to reduce headcount in periods of lower demand, as the number of full-time employees has been reduced or eliminated at locations that are not operating at full capacity. The Corporation added 573, 37 and 2,224 employees during 2016, 2015 and 2014, respectively, as a result of acquisitions.

Rising health care costs have affected total labor costs in recent years and are expected to continue to increase. Over the past five years, national health care costs have increased 6% on average. The Corporation has experienced health care cost increases averaging approximately 4% per year over the same period, driven in large part by favorable claims experience and payroll contribution changes made to its health care plans. In 2016, the Corporation's health and welfare costs per employee were essentially flat compared with the prior year due to adverse claims and a significant claim payment lag in 2015 that did not repeat in 2016. For 2017, health and welfare costs are expected to increase 4% to 5% (after plan design changes effective in 2017), slightly below general marketplace trends. While potential changes to the Affordable Care Act may affect the Corporation's cost in the future, any impact cannot be predicted at this time.

A lower discount rate is expected to increase the Corporation's pension expense from $32.8 million, excluding TXI-related nonrecurring benefits, in 2016 to $37.0 million in 2017 (see section *Critical Accounting Policies and Estimates – Pension Expense – Selection of Assumptions* on pages 74 through 76).

The impact of current inflation on the Corporation's businesses has been less significant due to moderate inflation rates. Historically, the Corporation has achieved real pricing growth in periods of inflation based on its ability to increase its selling prices in a normal economic environment.

Consolidated SG&A costs increased $29.8 million in 2016 compared with 2015. The increase reflects an increase in performance-based incentive compensation expense, which is directly tied to individual and company performance during the year. As a percentage of net sales, SG&A expenses increased 20 basis points to 6.9%.

Shortfalls in federal, state and local revenues may result in increases in income taxes and other taxes. Federal and state governments may also increase tax rates or eliminate deductions in response to the federal deficit. The Corporation derives a significant tax benefit from the federal depletion deduction (see section *Critical Accounting Policies and Estimates – Estimated Effective Income Tax Rate* on pages 76 through 78).

There is a risk of long-lived asset impairment at temporarily-idled locations. The timing of increased demand will determine when these locations are reopened. During the time that locations are temporarily idled, the locations' plant and equipment continue to be depreciated. When appropriate, mobile equipment is transferred to and used at an open location. As the Corporation continues to have long-term access to the supply of aggregates reserves and useful lives of equipment are extended, these locations are not considered to be impaired while temporarily idled. When temporarily-idled locations are reopened, it is not uncommon for repair costs to temporarily increase.

Transportation Exposure

The U.S. Department of the Interior's geological map of the United States shows the possible sources of indigenous surface rock and illustrates its limited supply in the coastal areas of the United States from Virginia to Texas.

SOURCES OF AGGREGATES SUPPLY

Limestone

Hard Rock

Source: U.S. Department of Interior

Local crushed stone supplies must be supplemented, or in many cases wholly supplied, from inland and offshore quarries in the coastal regions of the southeastern and southwestern United States. Further, certain interior United States markets may experience limited resources of construction material resulting from increasingly restrictive zoning and permitting laws and regulations. The Corporation's strategic focus includes expanding inland and offshore capacity and acquiring distribution yards and port locations to offload transported material. Accordingly, aggregates shipments are moved by rail or water through the Corporation's long-haul distribution network. In 1994, the Corporation had seven distribution yards. At December 31, 2016, the Corporation had 71 distribution yards. The Corporation's rail network primarily serves its Texas, Florida and Gulf Coast markets. The Corporation's Bahamas and Nova Scotia locations transport materials via oceangoing ships. The Corporation is currently focusing a portion of its capital spending program on key distribution yards in the southeastern United States.

As the Corporation moves aggregates by rail and water, internal freight costs reduce profit margins when compared with aggregates moved by truck. Freight costs for aggregates products often equal or exceed the selling price of the underlying aggregates products. The Corporation administers freight costs principally in three ways:

Option 1: The customer supplies transportation.

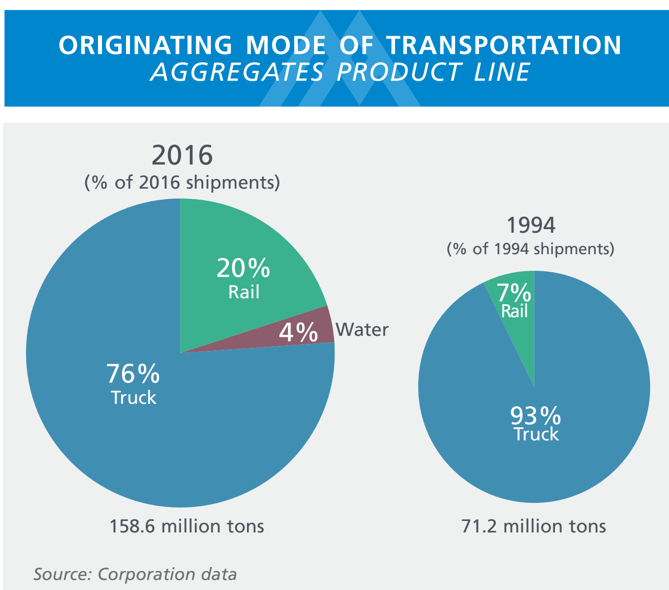
Option 2: The Corporation directly ships aggregates products from a production location to a customer by arranging for a third-party carrier to deliver aggregates and then charging the freight costs to the customer. These freight and delivery revenues and costs are separately presented in the consolidated

statements of earnings. Such revenues and costs for the Aggregates business were $211.6 million, $232.7 million and $246.1 million in 2016, 2015 and 2014, respectively, and account for a substantial majority of all such costs.

Option 3: The Corporation transports aggregates, either by rail or water, from a production location to a distribution yard at which the selling price includes the associated internal freight cost. These freight costs are included in the Aggregates business' cost of sales and were $231.9 million, $208.9 million and $185.2 million for 2016, 2015 and 2014, respectively. Transportation costs from the distribution yard to the customer are accounted for as described above in options 1 or 2, as applicable.

Further, the long-haul transportation network can diversify market risk for locations that engage in long-haul transportation of their aggregates products. Many locations serve both a local market and transport products via rail and/or water to be sold in other markets. The risk of a downturn in one market may be somewhat mitigated by other markets served by the location.

In 1994, 93% of the Corporation's aggregates shipments were moved by truck and the remainder by rail. In contrast, the originating mode of transportation for the Corporation's aggregates product line shipments in 2016 was 76% by truck, 20% by rail and 4% by water. Shipments for cement were predominantly by truck.



The Corporation's increased dependence on rail shipments has made it more vulnerable to railroad performance issues, including track congestion, crew and power availability, the effects of adverse weather conditions and the ability to renegotiate favorable railroad shipping contracts. Further, in response to these issues, rail transportation providers have focused on increasing the number of cars per unit train under transportation contracts and are generally requiring customers, through the freight rate structure, to accommodate larger unit train movements. A unit train is a freight train moving large tonnages of a single bulk product between two points without intermediate yarding and switching.

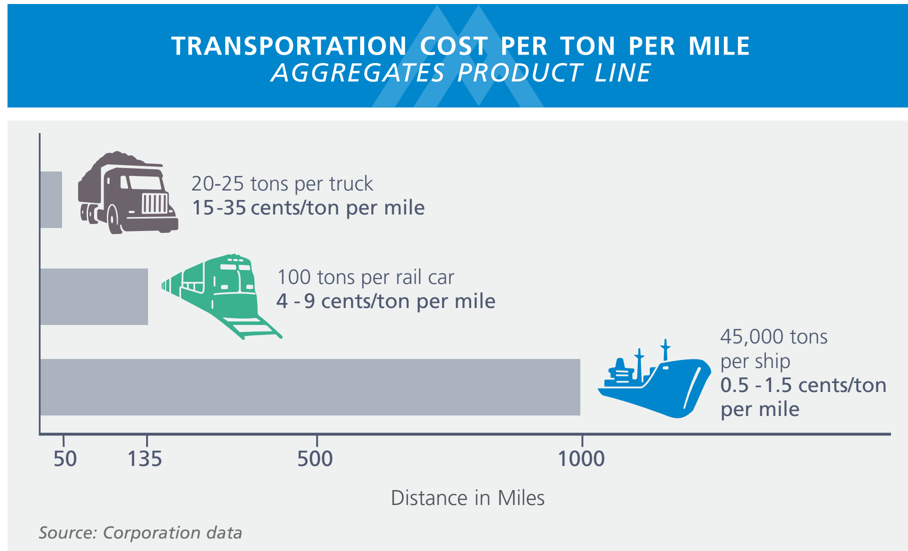
Generally, the Corporation does not buy railcars or ships, but instead supports its long-haul distribution network with short- and long-term leases and contracts of affreightment. However, the limited availability of water and rail transportation providers, coupled with limited distribution sites, can adversely affect lease rates for such services and ultimately the freight rate.

The waterborne distribution network increases the Corporation's exposure to certain risks, including, among other items, meeting minimum tonnage requirements of shipping contracts, demurrage costs, fuel costs, ship availability and weather disruptions. The Corporation's waterborne transportation is predominately via oceangoing vessels. The Corporation's average shipping distances from its Bahamas and Nova Scotia locations are 600 miles and 1,200 miles, respectively. Due to the majority of the shipments going to Florida, the weighted-average shipping distances are approximately 30% less than these averages. The Corporation has long-term agreements providing dedicated shipping capacity from its Bahamas and Nova Scotia operations to its coastal ports. These contracts of affreightment are take-or-pay contracts with minimum and maximum shipping requirements. If the Corporation fails to ship the annual minimum tonnages under the agreement, it is still obligated to pay the shipping company the contractually-stated minimum amount for that year. The Corporation incurred $1.1 million of these freight costs in 2016; a charge is possible in 2017 if shipment volumes

do not meet the contractually-stated minimums. The Corporation's contracts of affreightment have varying expiration dates ranging from 2017 to 2027 and generally contain renewal options. However, there can be no assurance that such contracts can be renewed upon expiration or that terms will continue without significant increases.

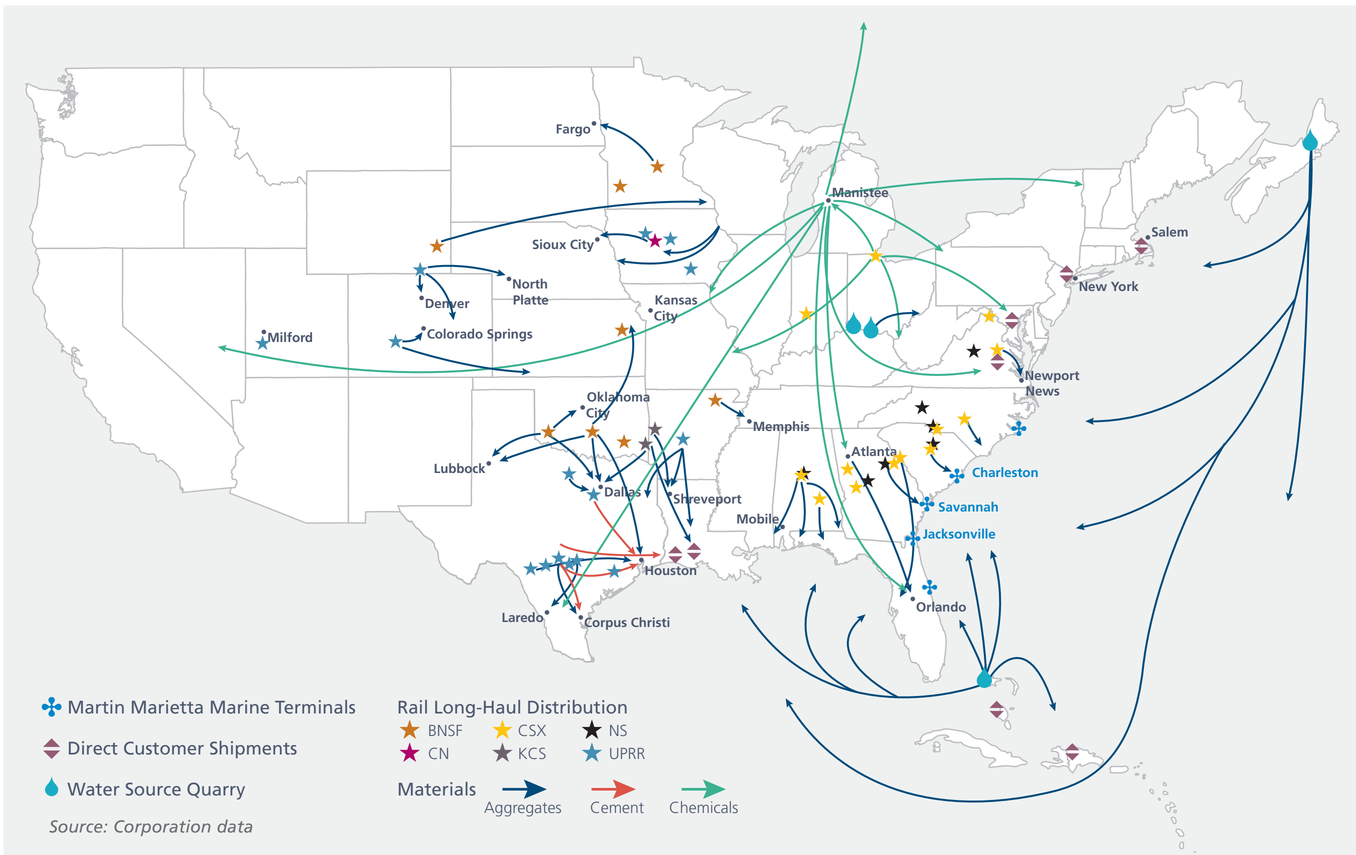
Management expects the multiple transportation modes that have been developed with various rail carriers and deep-water ships will provide the Corporation with the flexibility to effectively serve customers in the Southwest and Southeast coastal markets.

TRANSPORTATION COST PER TON PER MILE
AGGREGATES PRODUCT LINE



Source: Corporation data

LONG HAUL DISTRIBUTION NETWORK



Source: Corporation data

Internal Expansion and Integration of Acquisitions

The Corporation's capital expansion, acquisition and greensite programs are designed to take advantage of construction market growth through investment in both permanent and portable facilities at the Corporation's operations. Over an economic cycle, the Corporation will typically invest, on average, organic capital at an annual level that approximates depreciation expense. At mid-cycle and through cyclical peaks, organic capital investment typically exceeds depreciation expense, as the Corporation supports current capacity needs and invests for future capacity growth. Conversely, at a cyclical trough, the Corporation can reduce levels of capital investment. Regardless of cycle, the Corporation sets a priority of investing capital to ensure safe, environmentally-sound and efficient operations and to provide the highest quality of customer service and establish a foundation for future growth.

In the first quarter of 2016, the Corporation acquired the outstanding stock of Rocky Mountain Materials and Asphalt, Inc. and Rocky Mountain Premix, Inc. The acquisition included four aggregates plants, two asphalt plants and two ready mixed concrete operations, and provides more than 500 million tons of mineral reserves and expands the Corporation's presence along the Front Range of the Rocky Mountains, home to 80% of Colorado's population.

During the third quarter 2016, the Corporation acquired the remaining interest in Ratliff Ready-Mix, L.P. ("Ratliff"), which operates ready mixed concrete plants in central Texas. Prior to the acquisition, the Corporation owned a 40% interest in Ratliff. The acquisition of Ratliff enhanced the vertical integration provided by the Cement business.

The Corporation also acquires contiguous property around existing quarry locations. This property can serve as buffer property or additional mineral reserve capacity, assuming regulatory hurdles can be cleared and the underlying geology supports economical aggregates mining. In either instance, the acquisition of additional property around an existing quarry allows the expansion of the quarry footprint and extension of quarry life. Some locations having limited reserves may be unable to expand.

A long-term capital focus for the Corporation, primarily in the midwestern United States due to the nature of its indigenous aggregates supply, is underground limestone aggregates mines. The Corporation is the largest operator of underground aggregates mines in the United States and operates 14 active underground mines in the Mid-America Group. Production costs are generally higher at underground mines than surface quarries since the method of the aggregates recovery and access to the reserves result in higher development, explosives and depreciation costs. However, these locations often possess transportation advantages that can lead to value-added, higher average selling prices than more distant surface quarries.

On average, the Corporation's aggregates reserves exceed 60 years based on normalized production levels and approximate 100 years at current production rates.

Magnesia Specialties Business Risks

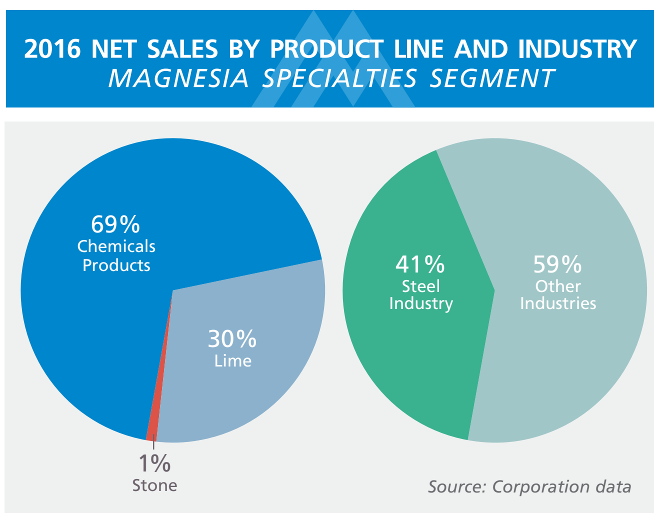
Through its Magnesia Specialties segment, the Corporation manufactures and markets magnesia-based chemicals products for industrial, agricultural and environmental applications, and dolomitic lime for use primarily in the steel industry. In 2016, 69% of Magnesia Specialties' net sales were attributable to chemicals products, 30% were attributable to lime and 1% was attributable to stone.

In 2016, 83% of the lime produced was sold to third-party customers, while the remaining 17% was used internally as a raw material for the business' manufacturing of chemicals products. Dolomitic lime products sold to external customers are primarily used by the steel industry, and overall, 41% of Magnesia Specialties' 2016 net sales related to products used in the steel industry. Accordingly, a portion of the segment's revenues and profits is affected by production and inventory trends within the steel industry. These trends are guided by the rate of consumer consumption, the flow of offshore imports and other economic factors. Average steel production in 2016 declined 0.5% versus 2015. Declining steel utilization and United States dollar strength could adversely affect Magnesia Specialties' operating results.

Of Magnesia Specialties' 2016 total revenues, 18% came from foreign jurisdictions, including Canada, Mexico, Europe, South America and the Pacific Rim. As a result of foreign market sales, financial results could be affected by foreign currency exchange rates, increasing transportation costs or weak economic conditions in the foreign markets. To mitigate the short-term effect of currency exchange rates, the United States dollar is used as the functional currency in foreign transactions. However, the current strength of the United States dollar in foreign markets is affecting the overall price of Magnesia Specialties' products when compared to foreign-domiciled competitors.

Given high fixed costs, low capacity utilization can negatively affect the segment's results of operations. Further, the production of certain magnesia chemical products and lime products requires natural gas, coal and petroleum coke to fuel kilns. Price fluctuations of these fuels affect the segment's profitability.

2016 NET SALES BY PRODUCT LINE AND INDUSTRY
MAGNESIA SPECIALTIES SEGMENT



Source: Corporation data

The Magnesia Specialties business is highly dependent on rail transportation, particularly for movement of dolomitic lime from Woodville to Manistee and direct customer shipments of dolomitic lime and magnesia chemicals products from both Woodville and Manistee. The segment can be affected by the risks outlined in *Transportation Exposure* on pages 64 through 66. All of Magnesia Specialties' hourly workforce belongs to a labor union. Union contracts cover hourly employees at the Manistee, Michigan, magnesia-based chemicals plant and the Woodville, Ohio, lime plant. The labor contract for the Woodville and Manistee locations expire in May 2018 and August 2019, respectively.

Management expects future organic growth to result from increased pricing, rationalization of the current product portfolio and/or further cost reductions. In the current operating environment where steel utilization is at levels close to 70% and the strength of the United States dollar pressures product competitiveness in international markets, any unplanned change in costs or customers introduces volatility to the earnings of the Magnesia Specialties segment.

Environmental Regulation and Litigation

The expansion and growth of the aggregates industry is subject to increasing challenges from environmental and political advocates hoping to control the pace and direction of future development. Certain environmental groups have published lists of targeted municipal areas, including areas within the Corporation's marketplace, for environmental and suburban growth control. The effect of these initiatives on the Corporation's growth is typically localized. Further challenges are expected as the momentum of these initiatives ebb and flow across the United States. Rail and other transportation alternatives are being heralded by these special-interest groups as solutions to mitigate road traffic congestion and overcrowding.

The Corporation's operations are subject to and affected by federal, state and local laws and regulations relating to the environment, health and safety and other regulatory matters. Certain of the Corporation's operations may occasionally use substances classified as toxic or hazardous. The Corporation regularly monitors and reviews its operations, procedures and policies for compliance with these laws and regulations. Despite these compliance efforts, risk of environmental liability is inherent in the operation of the Corporation's businesses, as it is with other companies engaged in similar businesses.

Environmental operating permits are, or may be, required for certain of the Corporation's operations; such permits are subject to modification, renewal and revocation. New permits are generally required for opening new sites or for

expansion at existing operations and can take several years to obtain. In the area of land use, rezoning and special or conditional use permits are increasingly difficult to obtain. Once a permit is issued, the location is required to generally operate in accordance with the approved site plan.

As is the case with other companies in the cement industry, the Corporation's cement operations produce varying quantities of cement kiln dust ("CKD"). This production by-product consists of fine-grained, solid, highly alkaline material removed from cement kiln exhaust gas by air pollution control devices. Because much of the CKD is actually unreacted raw materials, it is generally permissible to recycle the CKD back into the production process, and large amounts are often treated in such manner. CKD that is not returned to the production process is disposed in landfills. CKD is currently exempted from federal hazardous waste regulations under Subtitle C of the Resource Conservation and Recovery Act ("RCRA").

The Clean Air Act, originally passed in 1963 and periodically updated by amendments, is the United States' national air pollution control program that granted the Environmental Protection Agency ("EPA") authority to set limits on the level of various air pollutants. To be in compliance with National Ambient Air Quality Standards ("NAAQS"), a defined geographic area must be below established limits for six pollutants. Environmental groups have been successful in lawsuits against the federal and certain state departments of transportation, delaying highway construction in municipal areas not in compliance with the Clean Air Act. The EPA designates geographic areas as nonattainment areas when the level of air pollutants exceeds the national standard. Nonattainment areas receive deadlines to reduce air pollutants by instituting various control strategies or otherwise face fines or control by the EPA. Included as nonattainment areas are several major metropolitan areas in the Corporation's markets, such as Houston/Brazoria/Galveston, Texas; Dallas/Fort Worth, Texas; Denver, Colorado; Boulder, Colorado; Fort Collins/Greeley/Loveland, Colorado; Council Bluffs, Iowa; Atlanta, Georgia; and Indianapolis, Indiana. Federal transportation funding has been directly tied to compliance with the Clean Air Act.

The EPA includes the lime industry as a national enforcement priority under the Clean Air Act. As part of the industry-wide effort, the EPA issued notices of violation/findings of violation ("NOVs") to the Corporation in 2010 and 2011 regarding its compliance with the Clean Air Act's New Source Review ("NSR") program at its Magnesia Specialties dolomitic lime manufacturing plant in Woodville, Ohio. The Corporation has been providing information to the EPA in response to these NOVs and has had several meetings with the EPA. The Corporation believes it is in substantial compliance with the NSR program. At this time, the Corporation cannot reasonably estimate what likely penalties or upgrades to equipment might ultimately be required. The Corporation believes that any costs related to any required upgrades to capital equipment will be spread over time and will not have a material adverse effect on the Corporation's results of operations or its financial condition.

Large emitters (facilities that emit 25,000 metric tons or more per year) of greenhouse gases ("GHG") must report GHG generation to comply with the EPA's Mandatory Greenhouse Gases Reporting Rule ("GHG Rule"). The Corporation files annual reports in accordance with the GHG Rule relating to operations at its Magnesia Specialties facilities in Woodville, Ohio, and Manistee, Michigan, as well as the two cement plants in Texas, each of which emit certain GHG, including carbon dioxide, methane and nitrous oxide. If Congress passes legislation on GHG, these operations will likely be subject to the new program. Under President Trump's new administration, it is unknown whether the EPA is likely to impose additional regulatory restrictions on emissions of GHG. However, the Corporation believes that any increased operating costs or taxes related to GHG emission limitations at its Woodville or cement operations would be passed on to its customers. The Manistee facility may have to absorb extra costs due to the regulation of GHG emissions in order to maintain competitive pricing in its markets. The Corporation cannot reasonably predict how much those increased costs may be.

The Corporation is engaged in certain legal and administrative proceedings incidental to its normal business activities. In the opinion of management and counsel, based upon currently available facts, the likelihood is remote that the ultimate outcome of any litigation or other proceedings, including those pertaining to environmental matters, relating to the Corporation and its subsidiaries, will have a material adverse effect on the overall results of the Corporation's operations, cash flows or financial position.

FULL-YEAR 2017 OUTLOOK

The Corporation is encouraged by positive trends in the markets it serves and its ability to execute its strategic business plans. Notably:

- For the public sector, continued growth is expected in 2017 as new monies begin to flow into the system. FAST Act projects should accelerate through the year, supported by ongoing projects funded through TIFIA. Additionally, state initiatives to finance infrastructure projects, including the state and local ballot initiatives passed over the past 24 months, are expected to grow and continue to play an expanded role in public-sector activity.
- Nonresidential construction is expected to modestly increase in both the heavy industrial and commercial sectors. The Dodge Momentum Index is at its highest level since 2009, signaling continued growth. Additional energy-related economic activity, including follow-on public and private construction activity, will be mixed. While $47 billion of new energy-related projects are scheduled to start in 2017 and 2018, the certainty and timing of commencement will affect nonresidential growth.
- Residential construction is expected to continue to experience growth, driven by employment gains, historically low levels of construction activity over the previous several years, low mortgage rates, significant lot absorption and higher multi-family rental rates.

Based on these trends and expectations, including a return to more normal weather patterns, the Corporation anticipates the following for the full year:

- Aggregates end-use markets compared with 2016 levels are as follows:
  - Infrastructure market to increase mid-single digits.
  - Nonresidential market to increase in the low- to mid-single digits.
  - Residential market to increase in the mid- to high-single digits.
  - ChemRock/Rail market to remain stable.

2017 GUIDANCE

(dollars and tons in millions, except per ton)

	Low	High
Consolidated Results		
Consolidated net sales [1]	$ 3,750	$ 3,950
Consolidated gross profit	$ 1,000	$ 1,100
SG&A	$ 255	$ 265
Interest expense	$ 80	$ 85
Estimated tax rate (excluding discrete events)	30%	30%
Capital Expenditures	$ 350	$ 400
EBITDA	$ 1,050	$ 1,130
Aggregates Product Line		
Volume (total tons)[2]	165.0	167.0
% growth[2]	*4%*	*6%*
Average selling price per ton	$ 13.50	$ 13.75
% growth	*5%*	*7%*
Net sales	$ 2,200	$ 2,300
Gross profit	$ 660	$ 725
Aggregates-related downstream operations		
Net sales	$ 1,325	$ 1,400
Gross profit	$ 145	$ 155
Cement		
Net sales	$ 380	$ 400
Gross profit	$ 130	$ 140
Magnesia Specialties		
Net sales	$ 235	$ 240
Gross profit	$ 85	$ 90

[1] Consolidated net sales reflect the elimination of $390 million of interproduct and intersegment sales.

[2] Represents total aggregates volumes, which includes approximately 11.6 million internal tons. Volume growth ranges are in comparison to total volumes of 158.6 million tons as reported for the full year 2016, which includes 10.4 million internal tons.

Risks To Outlook

The 2017 outlook includes management's assessment of the likelihood of certain risks and uncertainties that will affect performance, including but not limited to: both price and volume; the United States Congress' inability to reach agreement among themselves or with the current Administration on policy issues, including the nature, extent and/or timing of infrastructure funding, that impact the federal budget; the termination, capping and/or reduction of state gasoline tax(es) or other state revenue related to infrastructure construction; the volatility in the commencement of infrastructure projects; a reduction in defense spending, and the subsequent impact on construction activity on or near military bases; a decline in nonresidential construction; a further decline in energy-related construction activity resulting from a sustained period of low global oil prices or changes in oil production patterns in response to this decline and certain regulatory or other economic factors; a slowdown in the residential construction recovery; a reduction in economic activity in the Corporation's Midwest states resulting from reduced funding levels provided by the *Agricultural Act of 2014* and a sustained reduction in capital investment by the railroads; an increase in the cost of compliance with governmental laws, rules and regulations; construction labor shortages; and unexpected equipment failures, unscheduled maintenance, industrial accident or other prolonged and/or significant disruption to its cement and/or its Magnesia Specialties production facilities. Cement is subject to cyclical supply and demand and price fluctuations. The Magnesia Specialties business essentially runs at capacity; therefore any unplanned changes in costs or realignment of customers introduce volatility to the earnings of this segment.

The Corporation's principal business serves customers in aggregates-related construction markets. This concentration could increase the risk of potential losses on customer receivables; however, payment bonds normally posted on public projects, together with lien rights on private projects, mitigate the risk of uncollectible receivables. The level of aggregates demand in the Corporation's end-use markets, production levels and the management of production costs will affect the operating leverage of the Aggregates business and, therefore, profitability. Production costs in the Aggregates business are also sensitive to energy and raw material prices, both directly and indirectly. Diesel fuel and other consumables change production costs directly through consumption or indirectly by increased energy-related input costs, such as steel, explosives, tires and conveyor belts. Fluctuating diesel fuel pricing also affects transportation costs, primarily through fuel surcharges in the Corporation's long-haul distribution network. The Cement business is also energy intensive and fluctuation in the price of coal affects costs. The Magnesia Specialties business is sensitive to changes in domestic steel capacity utilization as well as the absolute price and fluctuation in the cost of natural gas.

Transportation in the Corporation's long-haul network, particularly the supply of rail cars and locomotive power and condition of rail infrastructure to move trains, affects the Corporation's efficient transportation of aggregates into certain markets, most notably Texas, Colorado, Florida and the Gulf Coast. In addition, availability of rail cars and locomotives affects the Corporation's movement of essential dolomitic lime for magnesia chemicals, to both the Corporation's plant in Manistee, Michigan, and customers. The availability of trucks, drivers and railcars to transport the Corporation's product, particularly in markets experiencing high growth and increased demand, is also a risk and pressures the associated costs.

All of the Corporation's businesses are also subject to weather-related risks that can significantly affect production schedules and profitability. The first and fourth quarters are most adversely affected by winter weather. Hurricane activity in the Atlantic Ocean and Gulf Coast generally is most active during the third and fourth quarters. In fact, in early October 2016, Hurricane Matthew generated winds and significant amounts of rainfall disrupting operations in the Bahamas, Florida, Georgia and the Carolinas. However, after hurricane-related flood waters recede, management expects an increase in construction activity as roads, homes and businesses are repaired.

Risks to the outlook also include shipment declines resulting from economic events beyond the Corporation's control. In addition to the impact on nonresidential and residential construction, the Corporation is exposed to risk in its estimated outlook from interest cost related to its variable-rate debt.

The Corporation's future performance is also exposed to risks from tax reform at the federal and state levels.

For a discussion of additional risks, see *Forward-Looking Statements – Safe Harbor Provisions* on pages 86 and 87.

OTHER FINANCIAL INFORMATION

Critical Accounting Policies and Estimates

The Corporation's audited consolidated financial statements include certain critical estimates regarding the effect of matters that are inherently uncertain. These estimates require management's subjective and complex judgments. Amounts reported in the Corporation's consolidated financial statements could differ materially if management used different assumptions in making these estimates, resulting in actual results differing from those estimates. Methodologies used and assumptions selected by management in making these estimates, as well as the related disclosures, have been reviewed by and discussed with the Corporation's Audit Committee. Management's determination of the critical nature of accounting estimates and judgments may change from time to time depending on facts and circumstances that management cannot currently predict.

Business Combinations – Allocation of Purchase Price

The Corporation's Board of Directors and management regularly review strategic long-term plans, including potential investments in value-added acquisitions of related or similar businesses, which would increase the Corporation's market share and/or are related to the Corporation's existing markets. When an acquisition is completed, the Corporation's consolidated statements of earnings include the operating results of the acquired business starting from the date of acquisition, which is the date control is obtained. The purchase price is determined based on the fair value of assets and equity interests given to the seller and any future obligations to the seller as of the date of acquisition. Additionally, conversion of the seller's equity awards into equity awards of the Corporation can affect the purchase price. The Corporation allocates the purchase price to the fair values of the tangible and intangible assets acquired and liabilities assumed as valued at the date of acquisition. Goodwill is recorded for the excess of the purchase price over the net of the fair value of the identifiable assets acquired and liabilities assumed as of the acquisition date. The purchase price allocation is a critical accounting policy because the estimation of fair values of acquired assets and assumed liabilities is judgmental and requires various assumptions. Further, the amounts and useful lives assigned to depreciable and amortizable assets versus amounts assigned to goodwill and indefinite-lived intangible assets, which are not amortized, can significantly affect the results of operations in the period of and for periods subsequent to a business combination.

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction, and, therefore, represents an exit price. A fair-value measurement assumes the highest and best use of the asset by market participants, considering the use of the asset that is physically possible, legally permissible, and financially feasible at the measurement date. The Corporation assigns the highest level of fair value available to assets acquired and liabilities assumed based on the following options:

- Level 1 – Quoted prices in active markets for identical assets and liabilities
- Level 2 – Observable inputs, other than quoted prices, for similar assets or liabilities in active markets
- Level 3 – Unobservable inputs are used to value the asset or liability which includes the use of valuation models

Level 1 fair values are used to value investments in publicly-traded entities and assumed obligations for publicly-traded long-term debt.

Level 2 fair values are typically used to value acquired receivables, inventories, machinery and equipment, land, buildings, deferred income tax assets and liabilities, and accruals for payables, asset retirement obligations, environmental remediation and compliance obligations, and contingencies. Additionally, Level 2 fair values are typically used to value assumed contracts at other-than-market rates.

Level 3 fair values are used to value acquired mineral reserves and mineral interests produced and sold as final products, and separately-identifiable intangible assets. The fair values of mineral reserves and mineral interests are determined using an excess earnings approach, which requires management to estimate future cash flows, net of capital investments in the specific operation and contributory asset charges. The estimate of future cash flows is based on available historical information and future expectations and assumptions determined by management, but is inherently

uncertain. Key assumptions in estimating future cash flows include sales price, shipment volumes, production costs and capital needs. The present value of the projected net cash flows represents the fair value assigned to mineral reserves and mineral interests. The discount rate is a significant assumption used in the valuation model and is based on the required rate of return that a hypothetical market participant would require if purchasing the acquired business, with an adjustment for the risk of these assets not generating the projected cash flows.

The Corporation values separately-identifiable acquired intangible assets which may include, but are not limited to, permits, customer relationships, water rights and non-competition agreements. The fair values of these assets are typically determined by an excess earnings method, a replacement cost method or, in the case of water rights, a market approach.

The useful lives of amortizable intangible assets and the remaining useful lives for acquired machinery and equipment have a significant impact on earnings. The selected lives are based on the expected periods that the assets will provide value to the Corporation subsequent to the business combination.

The Corporation may adjust the amounts recognized for a business combination during a measurement period after the acquisition date. Any such adjustments are based on the Corporation obtaining additional information that existed at the acquisition date regarding the assets acquired or the liabilities assumed. Measurement-period adjustments are generally recorded as increases or decreases to the goodwill recognized in the transaction. The measurement period ends once the Corporation has obtained all necessary information that existed as of the acquisition date, but does not extend beyond one year from the date of acquisition. Any adjustments to assets acquired or liabilities assumed beyond the measurement period are recorded through earnings.

Impairment Review of Goodwill

Goodwill is required to be tested annually for impairment. An interim review is performed between annual tests if facts and circumstances indicate a potential impairment may exist. The impairment review of goodwill is a critical accounting estimate because goodwill represents 30% of the Corporation's total assets at December 31, 2016. Further, the evaluation requires management to apply judgment and make assumptions, which may result in an impairment charge that could be material to the Corporation's financial condition and results of operations. The Corporation performs its impairment review as of October 1, which represents the annual evaluation date.

The Corporation's reporting units, which represent the level at which goodwill is tested for impairment, are based on the geographic regions of the Aggregates business. As of October 1, 2016, the reporting units for the Aggregates business were as follows:

- *Mid-Atlantic Division*, which includes North Carolina, South Carolina, Maryland and Virginia;
- *Mideast Division*, which includes Indiana, Kentucky, Ohio and West Virginia;
- *Midwest Division*, which includes Iowa, northern Kansas, Minnesota, Missouri, eastern Nebraska and Washington;
- *Southeast Division*, which includes Alabama, Florida, Georgia, Tennessee and offshore operations in the Bahamas and Nova Scotia;
- *Rocky Mountain Division*, which includes Colorado, western Nebraska, Nevada, Utah and Wyoming; and
- *Southwest Division*, which includes Arkansas, southern Kansas, Louisiana, Oklahoma and Texas.

Additionally, the Cement business is a separate reporting unit. There is no goodwill related to the Magnesia Specialties business.

Disclosures for certain of the aforementioned reporting units within the Aggregates business meet the aggregation criteria and are consolidated as reportable segments for financial reporting purposes.

Goodwill is assigned to the respective reporting unit(s) based on the location of acquisitions at the time of consummation. Goodwill is tested for impairment by comparing the reporting unit's fair value to its carrying value, which represents Step 1 of a two-step approach. However, prior to Step 1, the Corporation may perform an optional qualitative assessment. As part of the qualitative assessment, the Corporation considers, among other things, the following events and circumstances: macroeconomic conditions, industry and market conditions, cost factors, overall financial performance and other business- or reporting unit-specific

events. If the Corporation concludes it is more-likely-than-not (i.e., a likelihood of more than 50%) that a reporting unit's fair value is higher than its carrying value, the Corporation does not perform any further goodwill impairment testing for that reporting unit. Otherwise, it proceeds to Step 1 of its goodwill impairment analysis. The Corporation may bypass the qualitative assessment for any reporting unit in any period and proceed directly with the quantitative calculation in Step 1. When the Corporation validates its conclusion by measuring fair value, it may resume performing a qualitative assessment for a reporting unit in any subsequent period. If the reporting unit's fair value exceeds its carrying value, no further calculation is necessary. A reporting unit with a carrying value in excess of its fair value constitutes a Step 1 failure and leads to an impairment charge. The Financial Accounting Standards Board ("FASB") recently issued an accounting standards update simplifying the calculation of the impairment charge. Step 2 of the analysis, which was used to determine the amount of impairment charge, was removed. Instead, the impairment charge will be calculated as the excess of the carrying value over fair value. The accounting standards update is effective for impairment tests performed after December 15, 2019, with early adoption permitted.

In 2016, the Corporation performed a Step-1 analysis for the Aggregates and Cement businesses. The Step-1 analysis for the Aggregates business reporting units was performed to update the fair values, as the Corporation had performed a qualitative assessment for the previous evaluation. The Cement business reporting unit was acquired in 2014, and a Step-1 analysis was performed again in 2016. The fair values were calculated using a discounted cash flow model. Key assumptions included management's estimates of future profitability, capital requirements, discount rates ranging from 10.0% to 10.5% and a terminal growth rate of 2.5%. Each of the Aggregates business reporting units passed the Step-1 analysis by a significant margin. The fair value of the Cement business reporting unit exceeded its carrying value by 10%, or $163 million. For sensitivity purposes, a 100-basis-point increase in the discount rate, holding all other assumptions constant, would result in the Cement business reporting unit failing the Step-1 analysis. The Cement business reporting unit had $865 million of goodwill at December 31, 2016.

Price, cost and volume changes, profitability, efficiency improvements, the discount rate and the terminal growth rate are significant assumptions in performing a Step-1 analysis. These assumptions are interdependent and have a significant impact on the results of the test.

Future profitability and capital requirements are, by their nature, estimates. Price, cost and volume assumptions were based on current forecasts, including the use of external sources, and market conditions. Capital requirements included maintenance-level needs, efficiency projects and known capacity-increasing initiatives.

A discount rate is calculated for each reporting unit that requires a Step-1 analysis and represents its weighted average cost of capital. The calculation of the discount rate includes the following components, which are primarily based on published sources: equity risk premium, historical beta, risk-free interest rate, small-stock premium, company-specific premium and borrowing rate.

The terminal growth rate was based on the projected annual increase in Gross Domestic Product.

Management believes that all assumptions used were reasonable based on historical operating results and expected future trends. However, if future operating results are unfavorable as compared with forecasts, the results of future goodwill impairment evaluations could be negatively affected. Further, mineral reserves, which represent underlying assets producing the reporting units' cash flows for the Aggregates and Cement businesses, are depleting assets by their nature. The potential write off of goodwill from future evaluations represents a risk to the Corporation.

Pension Expense-Selection of Assumptions

The Corporation sponsors noncontributory defined benefit pension plans that cover substantially all employees and a Supplemental Excess Retirement Plan ("SERP") for certain retirees (see Note J to the audited consolidated financial statements on pages 28 through 32). Annual pension expense (inclusive of SERP expense) consists of several components:

- *Service Cost*, which represents the present value of benefits attributed to services rendered in the current year, measured by expected future salary levels.
- *Interest Cost*, which represents one year's additional interest on the outstanding liability.
- *Expected Return on Assets*, which represents the expected investment return on pension fund assets.
- *Amortization of Prior Service Cost and Actuarial Gains and Losses*, which represents components that are recognized over time rather than immediately. Prior service cost represents credit given to employees for years of service prior to plan inception. Actuarial gains and losses arise from changes in assumptions regarding future events or when actual returns on assets differ from expected returns. At December 31, 2016, unrecognized actuarial loss and unrecognized prior service cost were $218.1 million and $0.4 million, respectively. Pension accounting rules currently allow companies to amortize the portion of the unrecognized actuarial loss that represents more than 10% of the greater of the projected benefit obligation or pension plan assets, using the average remaining service life for the amortization period. Therefore, the $218.1 million unrecognized actuarial loss consists of $134.9 million currently subject to amortization in 2017 and $83.2 million not subject to amortization in 2017. $14.1 million of amortization of the actuarial loss is estimated to be a component of 2017 annual pension expense.

These components are calculated annually to determine the pension expense reflected in the Corporation's results of operations.

Management believes the selection of assumptions related to the annual pension expense is a critical accounting estimate due to the high degree of volatility in the expense dependent on selected assumptions. The key assumptions are as follows:

- The *discount rate* is used to present value the pension obligation and represents the current rate at which the pension obligations could be effectively settled.
- The *expected long-term rate of return on pension fund assets* is used to estimate future asset returns and should reflect the average rate of long-term earnings on assets invested to provide for the benefits included in the projected benefit obligation.
- The *mortality table* represents published statistics on the expected lives of people.
- The *rate of increase in future compensation levels* is also a key assumption that projects the pay-related pension benefit formula and should estimate actual future compensation levels.

Management's selection of the discount rate is based on an analysis that estimates the current rate of return for high-quality, fixed-income investments with maturities matching the payment of pension benefits that could be purchased to settle the obligations. The Corporation selected a hypothetical portfolio of Moody's Aa bonds, with maturities that mirror the benefit obligations, to determine the discount rate. At December 31, 2016, the Corporation selected a discount rate assumption of 4.29%, a 38-basis-point decrease from the prior-year assumption. Of the four key assumptions, the discount rate is generally the most volatile and sensitive estimate. Accordingly, a change in this assumption has the most significant impact on the annual pension expense.

Management's selection of the rate of increase in future compensation levels is generally based on the Corporation's historical salary increases, including cost of living adjustments and merit and promotion increases, giving consideration to any known future trends. A higher rate of increase results in higher pension expense. The assumed long-term rate of increase of 4.5% is consistent with the prior year's assumption.

Management's selection of the expected long-term rate of return on pension fund assets is based on a building-block approach, whereby the components are weighted based on the allocation of pension plan assets. Given that these returns are long-term, there are generally not significant fluctuations in the expected rate of return from year to year. Based on the currently projected returns on these assets and related expenses, the Corporation selected an expected return on assets of 6.75%, a 25-basis-point decrease from the prior-year rate. The following table presents the expected return on pension assets as compared with the actual return on pension assets:

(add 000)	Expected Return on Pension Assets	Actual Return on Pension Assets
2016	**$37,699**	**$35,432**
2015	$36,385	$ (651)
2014	$32,661	$26,186

The difference between expected return on pension assets and the actual return on pension assets is not immediately recognized in the consolidated statements of earnings. Rather, pension accounting rules require the difference to be included in actuarial gains and losses, which are amortized into annual pension expense as previously described.

The Corporation estimates the remaining lives of participants in the pension plans using the Society of Actuaries' RP-2014 Base Mortality Table. The no-collar table was used for salaried participants and the blue-collar table, reflecting the experience of the Corporation's participants, was used for hourly participants. The Corporation selected the MP-2016 scale for mortality improvement.

Assumptions are selected on December 31 to calculate the succeeding year's expense. For the 2016 pension expense, assumptions selected at December 31, 2015 were as follows:

Discount rate		4.67%
Rate of increase in future compensation levels		4.50%
Expected long-term rate of return on assets		7.00%
Average remaining service period for participants		10 years
Mortality Tables:		
Base Table	RP-2014	
Mortality Improvement Scale	BB-2D	

Using these assumptions, 2016 pension expense was $33.7 million. A change in the assumptions would have had the following impact on 2016 expense:

- A change of 25 basis points in the discount rate would have changed 2016 expense by approximately $3.2 million.
- A change of 25 basis points in the expected long-term rate of return on assets would have changed the 2016 expense by approximately $1.3 million.

For 2017 pension expense, assumptions selected at December 31, 2016 were as follows:

Discount rate		4.29%
Rate of increase in future compensation levels		4.50%
Expected long-term rate of return on assets		6.75%
Average remaining service period for participants		10 years
Mortality Tables:		
Base Table	RP-2014	
Mortality Improvement Scale	MP-2016	

Using these assumptions, 2017 pension expense is expected to be approximately $37.0 million based on current demographics and structure of the plans. Changes in the underlying assumptions would have the following estimated impact on the 2017 expected expense:

- A change of 25 basis points in the discount rate would change the 2017 expected expense by approximately $3.6 million.
- A change of 25 basis points in the expected long-term rate of return on assets would change the 2017 expected expense by approximately $1.5 million.

The Corporation made pension plan contributions of $44.8 million in 2016 and $186.7 million for the five-year period ended December 31, 2016. Despite these contributions, the Corporation's pension plans are underfunded (projected benefit obligation exceeds the fair value of plan assets) by $235.6 million at December 31, 2016. The Corporation's projected benefit obligation was $831.8 million at December 31, 2016, an increase of $77.3 million over the prior year, driven by the lower discount rate. The Corporation expects to make pension plan and SERP contributions of $32.5 million in 2017.

Estimated Effective Income Tax Rate

The Corporation uses the liability method to determine its provision for income taxes. Accordingly, the annual provision for income taxes reflects estimates of the current liability for income taxes, estimates of the tax effect of financial reporting versus tax basis differences using statutory income tax rates and management's judgment with respect to any valuation allowances on deferred tax assets. The result is management's estimate of the annual effective tax rate (the "ETR").

Income for tax purposes is determined through the application of the rules and regulations under the United States Internal Revenue Code and the statutes of various foreign,

state and local tax jurisdictions in which the Corporation conducts business. Changes in the statutory tax rates and/or tax laws in these jurisdictions can have a material effect on the ETR. The effect of these changes, if any, is recognized when the change is enacted.

As prescribed by these tax regulations, as well as generally accepted accounting principles, the manner in which revenues and expenses are recognized for financial reporting and income tax purposes is not always the same. Therefore, these differences between the Corporation's pretax income for financial reporting purposes and the amount of taxable income for income tax purposes are treated as either temporary or permanent, depending on their nature.

Temporary differences reflect revenues or expenses that are recognized in financial reporting in one period and taxable income in a different period. An example of a temporary difference is the use of the straight-line method of depreciation of machinery and equipment for financial reporting purposes and the use of an accelerated method for income tax purposes. Temporary differences result from differences between the financial reporting basis and tax basis of assets or liabilities and give rise to deferred tax assets or liabilities (i.e., future tax deductions or future taxable income). Therefore, when temporary differences occur, they are offset by a corresponding change in a deferred tax account. As such, total income tax expense as reported in the Corporation's consolidated statements of earnings is not changed by temporary differences.

The Corporation has deferred tax liabilities, primarily for property, plant and equipment and goodwill. The deferred tax liabilities attributable to property, plant and equipment relate to accelerated depreciation and depletion methods used for income tax purposes as compared with the straight-line and units of production methods used for financial reporting purposes. These temporary differences will reverse over the remaining useful lives of the related assets. The deferred tax liabilities attributable to goodwill arise as a result of amortizing goodwill for income tax purposes but not for financial reporting purposes. This temporary difference reverses when goodwill is written off for financial reporting purposes, either through divestitures or an impairment charge. The timing of such events cannot be estimated.

The Corporation has deferred tax assets, primarily for unvested stock-based compensation awards, employee pension and postretirement benefits, valuation reserves, inventories, net operating loss carryforwards and tax credit carryforwards. The deferred tax assets attributable to unvested stock-based compensation awards relate to differences in the timing of deductibility for financial reporting purposes versus income tax purposes. For financial reporting purposes, the fair value of the awards is deducted ratably over the requisite service period. For income tax purposes, no deduction is allowed until the award is vested or no longer subject to substantial risk of forfeiture. Deferred tax assets are carried on stock options that have exercise prices in excess of the closing price of the Corporation's common stock at December 31, 2016. If these options expire without being exercised, the deferred tax assets are written off by reducing the pool of excess tax benefits to the extent available and expensing any excess. Beginning January 1, 2017, the Corporation will record all excess tax benefits and tax deficiencies as income tax expense or benefit as a discrete event in the period in which the award vests or settles, increasing volatility in the income tax rate from period to period. The deferred tax assets attributable to employee pension and postretirement benefits relate to deductions as plans are funded for income tax purposes compared with deductions for financial reporting purposes based on accounting standards. The reversal of these differences depends on the timing of the Corporation's contributions to the related benefit plans as compared to the annual expense for financial reporting purposes. The deferred tax assets attributable to valuation reserves and inventories relate to the deduction of estimated cost reserves and various period expenses for financial reporting purposes that are deductible in a later period for income tax purposes. The reversal of these differences depends on facts and circumstances, including the timing of deduction for income tax purposes for reserves previously established and the establishment of additional reserves for financial reporting purposes. At December 31, 2016, the Corporation had state net operating loss carryforwards of $220.5 million with varying expiration dates through 2036 and related state deferred tax assets of $10.5 million. The Corporation recorded a valuation allowance of $8.3 million for these deferred tax assets based on the uncertainty of generating future taxable income in the respective jurisdictions during the limited period that the net operating loss carryforwards can be utilized under state statutes. The Corporation utilized total federal net operating

loss carryforwards of $33.9 million in 2016. The Corporation had domestic state tax credit carryforwards of $1.4 million, for which a valuation allowance of $0.2 million was recorded at December 31, 2016. Additionally, the Corporation had Alternative Minimum Tax ("AMT") credit carryforwards of $17.2 million.

Property, Plant and Equipment

Net property, plant and equipment represent 47% of total assets at December 31, 2016. Accordingly, accounting for these assets represents a critical accounting policy. Useful lives of the assets can vary depending on factors, including production levels, geographic location, portability and maintenance practices. Additionally, climate and inclement weather can reduce the useful life of an asset. Historically, the Corporation has not recognized significant losses on the disposal or retirement of fixed assets.

The Corporation evaluates aggregates reserves, including aggregates reserves used in the cement manufacturing process, in several ways, depending on the geology at a particular location and whether the location is a potential new site (greensite), an acquisition or an existing operation. Greensites require an extensive drilling program before any significant investment is made in terms of time, site development or efforts to obtain appropriate zoning and permitting (see section *Environmental Regulation and Litigation* on pages 68 through 70). The depth of overburden and the quality and quantity of the aggregates reserves are significant factors in determining whether to pursue opening the site. Further, the estimated average selling price for products in a market is also a significant factor in concluding that reserves are economically mineable. If the Corporation's analysis based on these factors is satisfactory, the total aggregates reserves available are calculated and a determination is made whether to open the location. Reserve evaluation at existing locations is typically performed to evaluate purchasing adjoining properties, for quality control, calculating overburden volumes and for mine planning. Reserve evaluation of acquisitions may require a higher degree of sampling to locate any problem areas that may exist and to verify the total reserves.

Well-ordered subsurface sampling of the underlying deposit is basic to determining reserves at any location. This subsurface sampling usually involves one or more types of drilling, determined by the nature of the material to be sampled and the particular objective of the sampling. The Corporation's objectives are to ensure that the underlying deposit meets aggregates specifications and the total reserves on site are sufficient for mining and economically recoverable. Locations underlain with hard rock deposits, such as granite and limestone, are drilled using the diamond core method, which provides the most useful and accurate samples of the deposit. Selected core samples are tested for soundness, abrasion resistance and other physical properties relevant to the aggregates industry and depending on its use. The number and depth of the holes are determined by the size of the site and the complexity of the site-specific geology. Some geological factors that may affect the number and depth of holes include faults, folds, chemical irregularities, clay pockets, thickness of formations and weathering. A typical spacing of core holes on the area to be tested is one hole for every four acres, but wider spacing may be justified if the deposit is homogeneous.

Despite previous drilling and sampling, once accessed, the quality of reserves within a deposit can vary. Construction contracts, for the infrastructure market in particular, include specifications related to the aggregates material. If a flaw in the deposit is discovered, the aggregates material may not meet the required specifications. This can have an adverse effect on the Corporation's ability to serve certain customers or on the Corporation's profitability. In addition, other issues can arise that limit the Corporation's ability to access reserves in a particular quarry, including geological occurrences, blasting practices and zoning issues.

Locations underlain with sand and gravel are typically drilled using the auger method, whereby a 6-inch corkscrew brings up material from below the ground which is then sampled. Deposits in these locations are typically limited in thickness, and the quality and sand-to-gravel ratio of the deposit can vary both horizontally and vertically. Hole spacing at these locations is approximately one hole for every acre to ensure a representative sampling.

The geologist conducting the reserve evaluation makes the decision as to the number of holes and the spacing in accordance with standards and procedures established by the Corporation. Further, the anticipated heterogeneity of the deposit, based on U.S. geological maps, also dictates the number of holes used.

The generally accepted reserve categories for the aggregates industry and the designations the Corporation uses for reserve categories are summarized as follows:

> *Proven Reserves* – These reserves are designated using closely spaced drill data as described above and a determination by a professional geologist that the deposit is relatively homogeneous based on the drilling results and exploration data provided in U.S. geologic maps, the U.S. Department of Agriculture soil maps, aerial photographs and/or electromagnetic, seismic or other surveys conducted by independent geotechnical engineering firms. The proven reserves that are recorded reflect reductions incurred as a result of quarrying that result from leaving ramps, safety benches, pillars (underground) and the fines (small particles) that will be generated during processing. Proven reserves are further reduced by reserves that are under the plant and stockpile areas, as well as setbacks from neighboring property lines. The Corporation typically assumes a loss factor of 25%. However, the assumed loss factor at coastal operations is approximately 40% due to the nature of the material. The assumed loss factor for underground operations is 35% primarily due to pillars.
>
> *Probable Reserves* – These reserves are inferred utilizing fewer drill holes and/or assumptions about the economically recoverable reserves based on local geology or drill results from adjacent properties.

The Corporation's proven and probable reserves reflect reasonable economic and operating constraints as to maximum depth of overburden and stone excavation, and also include reserves at the Corporation's inactive and undeveloped sites, including some sites where permitting and zoning applications will not be filed until warranted by expected future growth. The Corporation has historically been successful in obtaining and maintaining appropriate zoning and permitting (see section *Environmental Regulation and Litigation* on pages 68 through 70).

Mineral reserves and mineral interests, when acquired in connection with a business combination, are valued using an excess earnings approach for the life of the proven and probable reserves.

The Corporation uses proven and probable reserves as the denominator in its units-of-production calculation to record depletion expense for its mineral reserves and mineral interests. During 2016, depletion expense was $15.9 million.

The Corporation begins capitalizing quarry development costs at a point when reserves are determined to be proven or probable, economically mineable and when demand supports investment in the market. Capitalization of these costs ceases when production commences. Quarry development costs are classified as land improvements.

New mining areas may be developed at existing quarries in order to access additional reserves. When this occurs, management reviews the facts and circumstances of each situation in making a determination as to the appropriateness of capitalizing or expensing the related pre-production development costs. If the additional mining location operates in a separate and distinct area of a quarry, the costs are capitalized as quarry development costs and depreciated over the life of the uncovered reserves. Further, a separate asset retirement obligation is created for additional mining areas when the liability is incurred. Once a new mining area enters the production phase, all post-production stripping costs are expensed as incurred as periodic inventory production costs.

Inventory Standards

The Corporation values its finished goods inventories under the first-in, first-out methodology using standard costs. For quarries, standards are developed using production costs for a twelve-month period, in addition to complying with the principle of lower of cost or net realizable value, and adjusting, if necessary, for normal capacity levels and abnormal costs. In addition to production costs, standards for distribution yards include a freight component for the cost of transporting the inventory from a quarry to the distribution yard and materials handling costs. Pre-operating start-up costs are expensed as incurred and not capitalized as part of inventory costs. In periods in which production costs, in particular, energy costs, and/or production volumes have changed significantly from the prior period, the revision of standards can have a significant impact on the Corporation's operating results (see section *Cost Structure* on pages 62 through 64).

Standard costs for the Aggregates business are updated on a quarterly basis to match finished goods inventory values with changes in production costs and production volumes.

Liquidity and Cash Flows

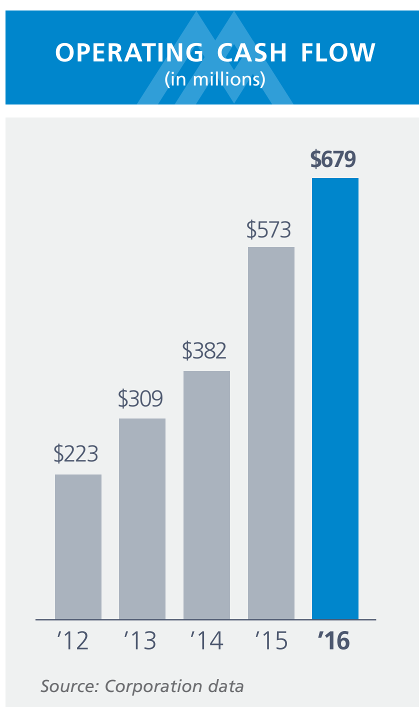
Operating Activities

The Corporation's primary source of liquidity during the past three years has been cash generated from its operating activities. Operating cash flow is substantially derived from consolidated net earnings, before deducting depreciation, depletion and amortization, and offset by working capital requirements. Cash provided by operations was $678.7 million in 2016, $573.2 million in 2015 and $381.7 million in 2014. The increases in 2016 and 2015 were primarily attributable to higher earnings before depreciation, depletion and amortization expense.

Depreciation, depletion and amortization were as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Depreciation	**$ 253,028**	$ 232,527	$ 200,242
Depletion	**15,907**	14,347	11,000
Amortization	**16,318**	16,713	11,504
Total	**$ 285,253**	$ 263,587	$ 222,746

The increase in depreciation, depletion and amortization expense in 2016 is primarily due to the Medina Rock and Rail capital project, which was completed at the end of 2015. The increase in 2015 is primarily attributable to the TXI acquisition on July 1, 2014.



Source: Corporation data

Investing Activities

Net cash used for investing activities was $555.3 million in 2016 and $49.3 million in 2014 and net cash provided by investing activities was $88.5 million in 2015.

Property, plant and equipment capitalized by reportable segment, excluding acquisitions, was as follows:

years ended December 31 (add 000)	**2016**	2015	2014
Mid-America Group	**$150,490**	$ 73,255	$ 75,253
Southeast Group	**30,588**	12,155	22,135
West Group	**175,862**	198,570	112,994
Total Aggregates Business	**356,940**	283,980	210,382
Cement	**28,633**	9,599	3,864
Magnesia Specialties	**8,944**	8,916	2,588
Corporate	**9,031**	15,737	15,349
Total	**$403,548**	$318,232	$232,183

In 2016, the increase in capital spending in the Mid-America Group is primarily due to the purchase of land in South Carolina and mobile equipment. Increased capital spending in 2015 and 2014 for the West Group is attributable to investments in the legacy TXI locations and the construction of the new Medina limestone quarry near San Antonio, the largest internal capital project in the Corporation's history.

The Corporation paid cash of $178.8 million, $43.2 million and $0.2 million for acquisitions in 2016, 2015 and 2014, respectively.

Proceeds from divestitures and sales of assets were $6.5 million in 2016, $448.1 million in 2015 and $122.0 million in 2014. This pretax cash is generated from the sales of surplus land and equipment. In 2015, the amount also reflects the divestiture of the California cement operations. In 2014, the proceeds reflect the required sale of an aggregates quarry in Oklahoma and two rail yards in Texas as a result of an agreement between the Corporation and the U.S. Department of Justice as part of its review of the TXI business combination.

Financing Activities

The Corporation used $241.7 million, $601.9 million and $266.1 million of cash for financing activities during 2016, 2015 and 2014, respectively.

Net borrowings of long-term debt in 2016 were $110.7 million and net repayments of long-term debt were $14.7 million and $188.5 million in 2015 and 2014, respectively. As discussed in Note G of the audited consolidated financial statements, on December 5, 2016, the Corporation entered into a credit agreement ("Credit Agreement") with a syndication of lenders, which provides a $700 million five-year senior unsecured revolving facility (the "Revolving Facility") and expires December 5, 2021. The Revolving Facility replaced the existing credit agreement at that time. The Corporation paid $2.3 million of debt issuance costs related to the facility.

During 2016, the Corporation repurchased 1.6 million shares for a total cost of $259.2 million, or $163.24 per share. 3.3 million shares were repurchased during 2015 for a total cost of $520.0 million, or $158.28 per share.

For the year ended December 31, 2016, the Board of Directors approved total cash dividends on the Corporation's common stock of $1.64 per share. For the years ended December 31, 2015 and 2014, the approved total cash dividends was $1.60 per share for each year. Total cash dividends were $105.0 million in 2016, $107.5 million in 2015 and $91.3 million in 2014.

Cash provided by issuances of common stock, which represents the exercises of stock options, was $21.3 million, $37.1 million and $39.7 million in 2016, 2015 and 2014, respectively.

Excess tax benefits from stock-based compensation transactions were $6.8 million and $2.5 million in 2016 and 2014, respectively. There was no excess tax benefit from stock-based compensation in 2015.

During 2014, the Corporation acquired the remaining interests in two joint ventures in separate transactions for $19.5 million.

Capital Structure and Resources

Long-term debt, including current maturities, was $1.686 billion at the end of 2016. The Corporation's debt was principally in the form of publicly-issued long-term notes and debentures and $340 million of borrowings under variable-rate credit facilities at December 31, 2016.

On September 28, 2016, the Corporation, through a wholly-owned special-purpose subsidiary, amended its trade receivable securitization facility (the "Trade Receivable Facility") to increase the borrowing capacity from $250 million to $300 million and extend the maturity to September 27, 2017. The Trade Receivable Facility is backed by eligible trade receivables, as defined. Borrowings are limited to the lesser of the facility limit or the borrowing base, as defined, of $333.3 million at December 31, 2016. These receivables are originated by the Corporation and then sold or contributed to the wholly-owned special-purpose subsidiary by the Corporation. The Corporation continues to be responsible for the servicing and administration of the receivables purchased by the wholly-owned special-purpose subsidiary. The Trade Receivable Facility contains a cross-default provision to the Corporation's other debt agreements.

The Revolving Facility requires the Corporation's ratio of consolidated debt-to-consolidated EBITDA, as defined by the Corporation's Credit Agreement, for the trailing-twelve month period (the "Ratio") to not exceed 3.5x as of the end of any fiscal quarter, provided that the Corporation may exclude from the Ratio debt incurred in connection with certain acquisitions during the quarter or the three preceding quarters so long as the Ratio calculated without such exclusion does not exceed 3.75x. Additionally, under the Credit Agreement, if there are no amounts outstanding under the Revolving Facility and Trade Receivable Facility, consolidated debt, including debt for which the Corporation is a co-borrower, will be reduced for purposes of the covenant calculation by the Corporation's unrestricted cash and cash equivalents in excess of $50 million, such reduction not to exceed $200 million.

At December 31, 2016, the Corporation's ratio of consolidated net debt-to-consolidated EBITDA, as defined by the Corporation's Credit Agreement, for the trailing-twelve month EBITDA was 1.73 times and was calculated as follows (dollars in thousands):

	Twelve-Month Period January 1, 2016 to December 31, 2016
Net earnings from continuing operations attributable to Martin Marietta Materials	$ 425,386
Add back:	
Interest expense	81,677
Income tax expense	181,524
Depreciation, depletion and amortization expense	282,840
Stock-based compensation expense	20,481
Deduct:	
Interest income	(451)
Nonrecurring gain, net	(5,099)
Consolidated EBITDA, as defined by the Corporation's Credit Agreement	$ 986,358
Consolidated net debt, as defined and including debt for which the Corporation is a co-borrower, at December 31, 2016	$1,708,777
Consolidated net debt-to-consolidated EBITDA, as defined by the Corporation's Credit Agreement, at December 31, 2016 for trailing-twelve month EBITDA	1.73x

Total equity was $4.14 billion at December 31, 2016. At that date, the Corporation had an accumulated other comprehensive loss of $130.7 million, resulting from unrecognized actuarial losses and prior service costs related to pension and postretirement benefits, foreign currency translation loss and the unamortized loss on terminated forward starting interest rate swap agreements.

The Corporation may repurchase shares of its common stock through open-market purchases pursuant to authority granted by its Board of Directors or through private transactions at such prices and upon such terms as the Chief Executive Officer deems appropriate. During 2015, the Board of Directors granted authority for the Corporation to repurchase an additional 15.0 million shares of common stock for a total repurchase authorization of 20.0 million shares. Under that authorization, the Corporation, in 2016, repurchased 1.6 million shares of its common stock for an aggregate purchase price of $259.2 million. In the near term, the Corporation expects to allocate capital for additional share repurchases based on available excess free cash flow, defined as operating cash flow less capital expenditures and dividends, subject to a leverage target of 2.0 times net debt-to-consolidated EBITDA and consideration of other capital needs. Future repurchases are expected to be carried out through a variety of methods, which may include open market purchases, privately negotiated transactions, block trades, accelerated share purchase transactions or any combination of such methods. The Corporation expects to complete the repurchase program over the next several years, though the actual timing of completion will be based on an ongoing assessment of the capital needs of the business, the market price of its common stock and general market conditions. Share repurchases will be executed based on then-current business and market factors so the actual return of capital in any single quarter may vary. The repurchase program may be modified, suspended or discontinued by the Board of Directors at any time without prior notice.

At December 31, 2016, the Corporation had $50.0 million in cash and short-term investments that are considered cash equivalents. The Corporation manages its cash and cash equivalents to ensure short-term operating cash needs are met and excess funds are managed efficiently. The Corporation subsidizes shortages in operating cash through credit facilities. The Corporation utilizes excess cash to either pay-down credit facility borrowings or invest in money market funds, money market demand deposit accounts or Eurodollar time deposit accounts. Money market demand deposits and Eurodollar time deposit accounts are exposed to bank solvency risk. Money market demand deposit accounts are FDIC insured up to $250,000. The Corporation's investments in bank funds generally exceed the $250,000 FDIC insurance limit. The Corporation's cash management policy prohibits cash and cash equivalents over $100 million to be maintained at any one bank.

Cash on hand, along with the Corporation's projected internal cash flows and availability of financing resources, including its access to debt and equity capital markets, is expected to continue to be sufficient to provide the capital resources necessary to support anticipated operating needs, cover debt service requirements including maturities in 2017 and

2018, meet capital expenditures and discretionary investment needs, fund certain acquisition opportunities that may arise and allow for payment of dividends for the foreseeable future. Borrowings under the Credit Agreement are unsecured and may be used for general corporate purposes. The Corporation's ability to borrow or issue securities is dependent upon, among other things, prevailing economic, financial and market conditions. At December 31, 2016, the Corporation had $657.5 million of unused borrowing capacity under its Revolving Facility and Trade Receivable Facility. The Revolving Facility expires on December 5, 2021 and the Trade Receivable Facility matures on September 27, 2017.

The Corporation may be required to obtain financing in order to fund certain strategic acquisitions, if any such opportunities arise, or to refinance outstanding debt. Any strategic acquisition of size would likely require an appropriate balance of newly-issued equity with debt in order to maintain a composite investment-grade credit rating. Furthermore, the Corporation is exposed to credit markets through the interest cost related to its variable-rate debt, which includes $300 million of Notes due 2017 and borrowings under its Revolving Facility and Trade Receivable Facility. The Corporation is currently rated by three credit rating agencies; two of those agencies' credit ratings are investment-grade level and the third agency's credit rating is one level below investment-grade.

Contractual and Off Balance Sheet Obligations

Postretirement medical benefits will be paid from the Corporation's assets. The obligation, if any, for retiree medical payments is subject to the terms of the plan. At December 31, 2016, the Corporation's recorded benefit obligation related to these benefits totaled $20.6 million.

The Corporation has other retirement benefits related to pension plans. At December 31, 2016, the qualified pension plans were underfunded by $133.3 million. Inclusive of required amounts, the Corporation estimates that it will make contributions of $25.0 million to qualified pension plans in 2017. Any contributions beyond 2017 are currently undeterminable and will depend on the investment return on the related pension assets. However, management's practice is to fund at least the normal service cost annually. At December 31, 2016, the Corporation had a total obligation of $102.3 million related to unfunded nonqualified pension plans and expects to make contributions of $7.5 million in 2017.

At December 31, 2016, the Corporation had $21.8 million accrued for uncertain tax positions, which was offset by a $14.4 million AMT credit. Such liabilities may become payable if the tax positions are not sustained upon examination by a taxing authority.

In connection with normal, ongoing operations, the Corporation enters into market-rate leases for property, plant and equipment and royalty commitments principally associated with leased land. Additionally, the Corporation enters into equipment rentals to meet shorter-term, nonrecurring and intermittent needs. At December 31, 2016, the Corporation had $15.6 million in capital lease obligations. Amounts due for operating leases and royalty agreements are expensed in the period incurred. Management anticipates that, in the ordinary course of business, the Corporation will enter into additional royalty agreements for land and mineral reserves during 2017.

The Corporation has purchase commitments for property, plant and equipment of $94.1 million as of December 31, 2016. The Corporation also has other purchase obligations related to energy and service contracts which totaled $106.3 million as of December 31, 2016.

The Corporation's contractual commitments as of December 31, 2016 are as follows:

(add 000)	Total	< 1 Year	1 to 3 Years	3 to 5 Years	> 5 Years
ON BALANCE SHEET:					
Long-term debt	$ 1,686,190	$ 180,036	$ 299,589	$ 459,158	$ 747,407
Postretirement benefits	20,590	3,070	4,120	3,654	9,746
Qualified pension plan contributions[1]	25,026	25,026	–	–	–
Unfunded pension plan contributions	102,297	7,512	17,088	22,860	54,837
Uncertain tax positions	7,407	–	7,407	–	–
Capital leases - principal portion	15,605	2,683	5,745	3,770	3,407
Other commitments	499	64	128	128	179
OFF BALANCE SHEET:					
Interest on publicly-traded long-term debt and capital lease obligations	546,440	63,806	91,206	80,806	310,622
Operating leases[2]	625,836	111,897	110,087	92,343	311,509
Royalty agreements[2]	90,069	13,420	18,127	14,113	44,409
Purchase commitments - capital	94,074	94,029	45	–	–
Other commitments - energy and services	106,307	60,775	40,963	3,433	1,136
Total	$ 3,320,340	$ 562,318	$ 594,505	$ 680,265	$ 1,483,252

[1] Qualified pension plan contributions beyond 2017 are not determinable at this time
[2] Represents future minimum payments

Notes A, G, I, J, L and N to the audited consolidated financial statements on pages 15 through 21; 23 through 25; 26 through 28; 28 through 32; 35; 36 and 37, respectively, contain additional information regarding these commitments and should be read in conjunction with the above table.

Contingent Liabilities and Commitments

The Corporation has a $5 million short-term line of credit. No amounts were outstanding under this line of credit at December 31, 2016.

The Corporation has entered into standby letter of credit agreements relating to certain insurance claims, utilities and property improvements. At December 31, 2016, the Corporation had contingent liabilities guaranteeing its own performance under these outstanding letters of credit of $45.4 million, of which $2.5 million were issued under the Corporation's Revolving Facility. Certain of these underlying obligations are accrued on the Corporation's consolidated balance sheets.

In the normal course of business at December 31, 2016, the Corporation was contingently liable for $381.5 million in surety bonds underwritten by Liberty Mutual and W.R. Berkley, which guarantee its own performance and are required by certain states and municipalities and their related agencies. Certain of the bonds guaranteeing performance of obligations, including those for asset retirement requirements and insurance claims, are accrued on the Corporation's balance sheet. Five of these bonds are for certain construction contracts and reclamation obligations and total $85.1 million, or 22% of all outstanding surety bonds. The Corporation has indemnified the underwriting insurance companies against any exposure under the surety bonds. In the Corporation's past experience, no material claims have been made against these financial instruments.

The Corporation is a co-borrower with an unconsolidated affiliate for a $25.0 million revolving line of credit agreement with Branch Banking & Trust. The line of credit expires in February 2018. The affiliate has agreed to reimburse and indemnify the Corporation for any payments and expenses the Corporation may incur from this agreement. The Corporation holds a lien on the affiliate's membership interest in a joint venture as collateral for payment under the revolving line of credit.

Quantitative and Qualitative Disclosures about Market Risk

As discussed earlier, the Corporation's operations are highly dependent upon the interest rate-sensitive construction and steelmaking industries. Consequently, these marketplaces could experience lower levels of economic activity in an environment of rising interest rates or escalating costs (see section *Business Environment* on pages 54 through 70).

Management has considered the current economic environment and its potential impact to the Corporation's business. Demand for aggregates products, particularly in the infrastructure construction market, is affected by federal and state budget and deficit issues. Further, delays or cancellations of capital projects in the nonresidential and residential construction markets could occur if companies and consumers are unable to obtain financing for construction projects or if consumer confidence is eroded by economic uncertainty.

Demand in the residential construction market is affected by interest rates. The Federal Reserve increased the federal funds rate 25 basis points, but the rate remained at less than one percent for the year ended December 31, 2016. The residential construction market accounted for 21% of the Corporation's aggregates product line shipments in 2016.

Aside from these inherent risks from within its operations, the Corporation's earnings are also affected by changes in short-term interest rates. However, rising interest rates are not necessarily predictive of weaker operating results. Historically, the Corporation's profitability increased during periods of rising interest rates. In essence, the Corporation's underlying business generally serves as a natural hedge to rising interest rates.

Variable-Rate Borrowing Facilities

At December 31, 2016, the Corporation had a $700 million Credit Agreement and a $300 million Trade Receivable Facility. The Corporation also has $300 million variable-rate senior notes. Borrowings under these facilities bear interest at a variable interest rate. A hypothetical 100-basis-point increase in interest rates on borrowings of $640 million, which was the collective outstanding balance at December 31, 2016, would increase interest expense by $6.4 million on an annual basis.

Pension Expense

The Corporation's results of operations are affected by its pension expense. Assumptions that affect pension expense include the discount rate and, for the defined benefit pension plans only, the expected long-term rate of return on assets. Therefore, the Corporation has interest rate risk associated with these factors. The impact of hypothetical changes in these assumptions on the Corporation's annual pension expense is discussed in the section *Critical Accounting Policies and Estimates – Pension Expense – Selection of Assumptions* on pages 74 through 76.

Energy Costs

Energy costs, including diesel fuel, natural gas, coal and liquid asphalt, represent significant production costs of the Corporation. The Magnesia Specialties and Cement businesses each have fixed price agreements covering 100% of their 2017 coal requirements. A hypothetical 10% change in the Corporation's energy prices in 2017 as compared with 2016, assuming constant volumes, would change 2017 energy expense by $23.1 million.

Commodity Risk

Cement is a commodity and competition is based principally on price, which is highly sensitive to changes in supply and demand. Prices are often subject to material changes in response to relatively minor fluctuations in supply and demand, general economic conditions and other market conditions beyond the Corporation's control. Increases in the production capacity of industry participants or increases in cement imports tend to create an oversupply of such products leading to an imbalance between supply and demand, which can have a negative impact on product prices. There can be no assurance that prices for products sold will not decline in the future or that such declines will not have a material adverse effect on the Corporation's business, financial condition and results of operations. A hypothetical 10% change in sales price of the Texas Cement business would impact net sales by $35.9 million. Cement is a key raw material in the production of ready mixed concrete. A hypothetical 10% change in cement costs in 2017 as compared with 2016, assuming constant volumes, would change ready mixed concrete cost of sales by $22.6 million.

Forward-Looking Statements – Safe Harbor Provisions

If you are interested in Martin Marietta Materials, Inc. stock, management recommends that, at a minimum, you read the Corporation's current annual report and Forms 10-K, 10-Q and 8-K reports to the Securities and Exchange Commission (SEC) over the past year. The Corporation's recent proxy statement for the annual meeting of shareholders also contains important information. These and other materials that have been filed with the SEC are accessible through the Corporation's website at www.martinmarietta.com and are also available at the SEC's website at www.sec.gov. You may also write or call the Corporation's Corporate Secretary, who will provide copies of such reports.

Investors are cautioned that all statements in this Annual Report that relate to the future involve risks and uncertainties, and are based on assumptions that the Corporation believes in good faith are reasonable but which may be materially different from actual results. Forward-looking statements give the investor the Corporation's expectations or forecasts of future events. These statements can be identified by the fact that they do not relate only to historical or current facts. They may use words such as "anticipate," "expect," "should be," "believe," "will," and other words of similar meaning in connection with future events or future operating or financial performance. Any or all of the Corporation's forward-looking statements here and in other publications may turn out to be wrong.

Factors that the Corporation currently believes could cause actual results to differ materially from the forward-looking statements in this Annual Report include the performance of the United States economy and the resolution and impact of the debt ceiling and sequestration issues; widespread decline in aggregates pricing; the history of both cement and ready mixed concrete being subject to significant changes in supply, demand and price; the termination, capping and/or reduction or suspension of the federal and/or state gasoline tax(es) or other revenue related to infrastructure construction; the level and timing of federal and state transportation funding, most particularly in Texas, North Carolina, Iowa, Colorado and Georgia; the ability of states and/or other entities to finance approved projects either with tax revenues or alternative financing structures; levels of construction spending in the markets the Corporation serves; a reduction in defense spending, and the subsequent impact on construction activity on or near military bases; a decline in the commercial component of the nonresidential construction market, notably office and retail space; a further slowdown in energy-related construction activity, particularly in Texas; a slowdown in residential construction recovery; a reduction in construction activity and related shipments due to a decline in funding under the domestic farm bill; unfavorable weather conditions, particularly Atlantic Ocean hurricane activity, the late start to spring or the early onset of winter and the impact of a drought or excessive rainfall in the markets served by the Corporation; the volatility of fuel costs, particularly diesel fuel, and the impact on the cost of other consumables, namely steel, explosives, tires and conveyor belts, and with respect to the Magnesia Specialties business, natural gas; continued increases in the cost of other repair and supply parts; unexpected equipment failures, unscheduled maintenance, industrial accident or other prolonged and/or significant disruption to cement production facilities; increasing governmental regulation, including environmental laws; transportation availability, notably the availability of railcars and locomotive power to move trains to supply the Corporation's Texas, Florida and Gulf Coast markets; increased transportation costs, including increases from higher passed-through energy and other costs to comply with tightening regulations as well as higher volumes of rail and water shipments; availability of trucks and licensed drivers for transport of the Corporation's materials, particularly in areas with significant energy-related activity, such as Texas and

Forward-Looking Statements – Safe Harbor Provisions

Colorado; availability and cost of construction equipment in the United States; weakening in the steel industry markets served by the Corporation's dolomitic lime products; proper functioning of information technology and automated operating systems to manage or support operations; inflation and its effect on both production and interest costs; ability to successfully integrate acquisitions quickly and in a cost-effective manner and achieve anticipated profitability to maintain compliance with the Corporation's leverage ratio debt covenant; changes in tax laws, the interpretation of such laws and/or administrative practices that would increase the Corporation's tax rate; violation of the Corporation's debt covenant if price and/or volumes return to previous levels of instability; downward pressure on the Corporation's common stock price and its impact on goodwill impairment evaluations; reduction of the Corporation's credit rating to non-investment grade resulting from strategic acquisitions; and other risk factors listed from time to time found in the Corporation's filings with the SEC. Other factors besides those listed here may also adversely affect the Corporation, and may be material to the Corporation. The Corporation assumes no obligation to update any such forward-looking statements.

For a discussion identifying some important factors that could cause actual results to vary materially from those anticipated in the forward-looking statements, see the Corporation's SEC filings including, but not limited to, the discussion of "Competition" in the Corporation's Annual Report on Form 10-K, "Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 46 through 54 of the 2016 Annual Report and "Note A: Accounting Policies" and "Note N: Commitments and Contingencies" of the "Notes to Financial Statements" on pages 15 through 21 and 36 and 37, respectively, of the audited consolidated financial statements included in the 2016 Annual Report.

QUARTERLY PERFORMANCE
(unaudited)

(add 000, except per share and stock prices)

	Total Revenues		Net Sales		Gross Profit		Consolidated Net Earnings		Net Earnings Attributable to Martin Marietta	
Quarter	**2016**	2015	**2016**	2015	**2016**	2015	**2016[4,5]**	2015[2,3]	**2016[4,5]**	2015[2,3]
First	**$ 788,734**	$ 691,347	**$ 733,960**	$ 631,876	**$ 144,634**	$ 74,261	**$ 45,055**	$ 6,159	**$ 44,994**	$ 6,126
Second	**977,298**	921,419	**915,436**	850,249	**246,701**	200,153	**122,113**	81,979	**122,052**	81,938
Third	**1,103,901**	1,082,249	**1,038,344**	1,005,218	**292,568**	262,504	**159,478**	117,578	**159,479**	117,544
Fourth	**948,816**	844,555	**889,027**	780,773	**225,063**	184,849	**98,798**	83,222	**98,861**	83,184
Totals	**$ 3,818,749**	$ 3,539,570	**$ 3,576,767**	$ 3,268,116	**$ 908,966**	$ 721,767	**$425,444**	$ 288,938	**$ 425,386**	$ 288,792

Per Common Share

	Basic Earnings[1]		Diluted Earnings[1]		Dividends Paid		Stock Prices			
							High	Low	High	Low
Quarter	**2016[4,5]**	2015[2,3]	**2016[4,5]**	2015[2,3]	**2016**	2015	**2016**		2015	
First	**$ 0.70**	$ 0.07	**$ 0.69**	$ 0.07	**$ 0.40**	$ 0.40	**$ 160.18**	**$ 108.31**	$ 146.21	$ 104.15
Second	**$ 1.91**	$ 1.23	**$ 1.90**	$ 1.22	**0.40**	0.40	**$ 193.87**	**$ 156.35**	$ 155.98	$ 134.10
Third	**$ 2.50**	$ 1.75	**$ 2.49**	$ 1.74	**0.42**	0.40	**$ 206.36**	**$ 172.49**	$ 178.67	$ 141.54
Fourth	**$ 1.56**	$ 1.27	**$ 1.55**	$ 1.26	**0.42**	0.40	**$ 236.41**	**$ 167.06**	$ 166.23	$ 136.20
Full Year	**$ 6.66**	$ 4.31	**$ 6.63**	$ 4.29	**$ 1.64**	$ 1.60				

[1] The sum of per-share earnings by quarter may not equal earnings per share for the year due to changes in average share calculations. This is in accordance with prescribed reporting requirements.

[2] Consolidated net earnings, net earnings attributable to Martin Marietta, and basic and diluted earnings per common share in the third quarter of 2015 were decreased $16.9 million, or $0.30 per basic and diluted share, due to the impact from the sale of the California cement business and related expenses, inclusive of the impact of a valuation allowance for certain net operating loss carry forwards.

[3] Consolidated net earnings, net earnings attributable to Martin Marietta, and basic and diluted earnings per common share in the fourth quarter of 2015 were increased by $6.7 million, or $0.10 per basic and diluted share, as a result of the gain on the sale of the San Antonio asphalt operations.

[4] Consolidated net earnings, net earnings attributable to Martin Marietta, and basic and diluted earnings per common share in the fourth quarter of 2016 were reduced by $7.5 million, or $0.12 per basic and diluted share, as a result of increased performance-based compensation expense.

[5] Consolidated net earnings, net earnings attributable to Martin Marietta, and basic and diluted earnings per common share for the full year 2016 were reduced by $8.8 million, or $0.14 per basic and diluted share, as a result of increased performance-based compensation expense.

At February 15, 2017, there were 982 shareholders of record.

FIVE YEAR SELECTED FINANCIAL DATA

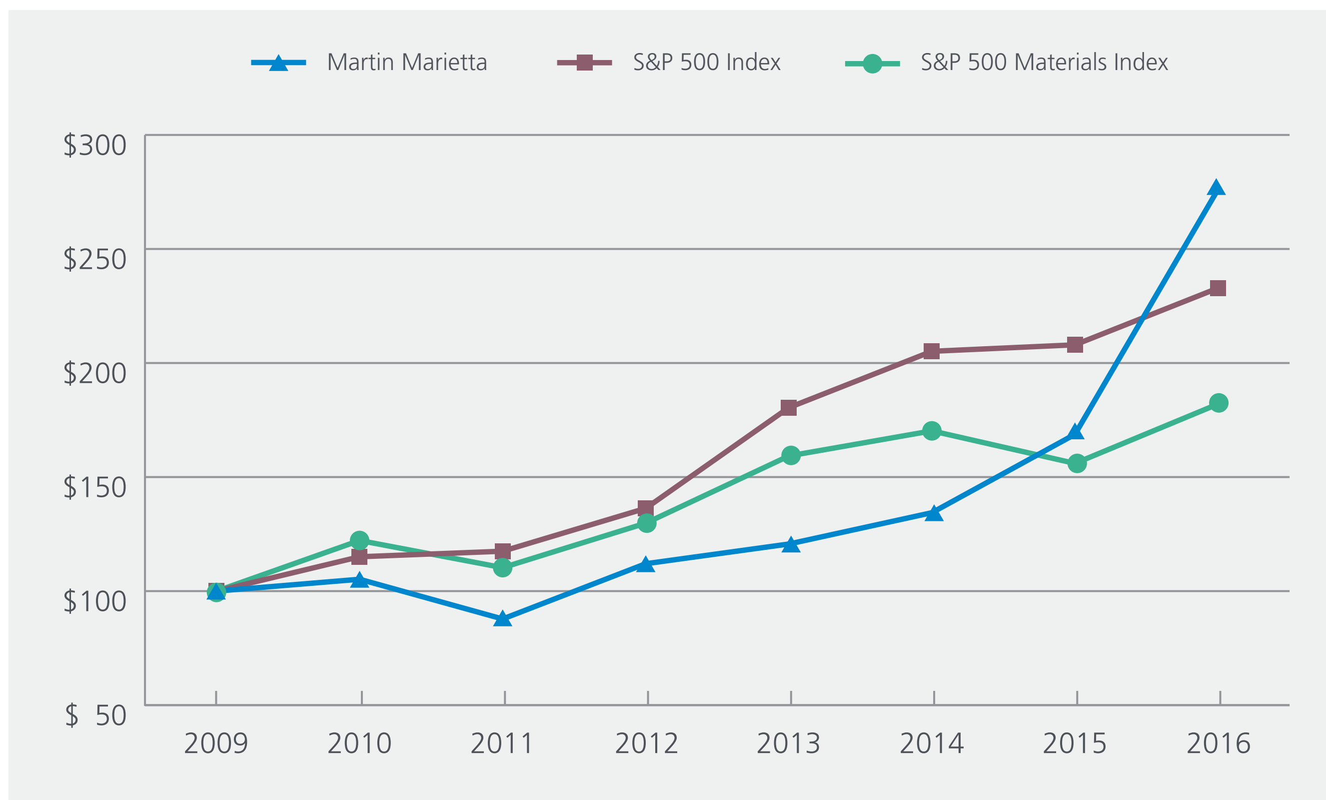
(add 000, except per share)

	2016	2015	2014	2013	2012
Consolidated Operating Results[1]					
Net sales	**$ 3,576,767**	$ 3,268,116	$ 2,679,095	$ 1,943,218	$ 1,832,957
Freight and delivery revenues	**241,982**	271,454	278,856	212,333	198,944
Total revenues	**3,818,749**	3,539,570	2,957,951	2,155,551	2,031,901
Cost of sales	**2,667,801**	2,546,349	2,156,735	1,579,261	1,505,823
Freight and delivery costs	**241,982**	271,454	278,856	212,333	198,944
Total cost of revenues	**2,909,783**	2,817,803	2,435,591	1,791,594	1,704,767
Gross Profit	**908,966**	721,767	522,360	363,957	327,134
Selling, general and administrative expenses	**248,005**	218,234	169,245	150,091	138,398
Acquisition-related expenses, net	**1,683**	8,464	42,891	671	35,140
Other operating (income) and expenses, net	**(8,043)**	15,653	(4,649)	(4,793)	(2,574)
Earnings from Operations	**667,321**	479,416	314,873	217,988	156,170
Interest expense	**81,677**	76,287	66,057	53,467	53,339
Other nonoperating (income) and expenses, net	**(21,384)**	(10,672)	(362)	295	(1,299)
Earnings from continuing operations before taxes on income	**607,028**	413,801	249,178	164,226	104,130
Taxes on income	**181,584**	124,863	94,847	44,045	17,431
Earnings from Continuing Operations	**425,444**	288,938	154,331	120,181	86,699
Discontinued operations, net of taxes	**–**	–	(37)	(749)	(1,172)
Consolidated net earnings	**425,444**	288,938	154,294	119,432	85,527
Less: Net earnings (loss) attributable to noncontrolling interests	**58**	146	(1,307)	(1,905)	1,053
Net Earnings Attributable to Martin Marietta	**$ 425,386**	$ 288,792	$ 155,601	$ 121,337	$ 84,474
Basic Earnings Attributable to Martin Marietta Per Common Share (see Note A):					
Earnings from continuing operations attributable to common shareholders[1]	**$ 6.66**	$ 4.31	$ 2.73	$ 2.64	$ 1.86
Discontinued operations attributable to common shareholders[1]	**–**	–	–	(0.02)	(0.03)
Basic Earnings Per Common Share	**$ 6.66**	$ 4.31	$ 2.73	$ 2.62	$ 1.83
Diluted Earnings Attributable to Martin Marietta Per Common Share (see Note A):					
Earnings from continuing operations attributable to common shareholders[1]	**$ 6.63**	$ 4.29	$ 2.71	$ 2.63	$ 1.86
Discontinued operations attributable to common shareholders[1]	**–**	–	–	(0.02)	(0.03)
Diluted Earnings Per Common Share	**$ 6.63**	$ 4.29	$ 2.71	$ 2.61	$ 1.83
Cash Dividends Per Common Share	**$ 1.64**	$ 1.60	$ 1.60	$ 1.60	$ 1.60
Condensed Consolidated Balance Sheet Data					
Total current assets[2]	**$ 1,086,385**	$ 1,081,635	$ 1,043,646	$ 680,080	$ 621,643
Property, plant and equipment, net	**3,423,395**	3,156,000	3,402,770	1,799,241	1,753,241
Goodwill	**2,159,337**	2,068,235	2,068,799	616,621	616,204
Other intangibles, net	**511,312**	510,552	595,205	48,591	50,433
Other noncurrent assets[2]	**120,476**	141,189	104,097	36,738	37,720
Total Assets	**$ 7,300,905**	$ 6,957,611	$ 7,214,517	$ 3,181,271	$ 3,079,241
Current liabilities – other	**$ 366,552**	$ 347,945	$ 382,312	$ 198,146	$ 167,659
Current maturities of long-term debt[2]	**180,036**	18,713	13,803	11,938	4,634
Long-term debt[2]	**1,506,153**	1,550,061	1,566,355	1,015,249	1,039,256
Pension, postretirement and postemployment benefits, noncurrent	**248,086**	224,538	249,333	78,489	183,122
Deferred income taxes, net	**663,019**	583,459	489,945	205,178	147,876
Other noncurrent liabilities	**194,469**	172,718	160,021	97,352	86,395
Shareholders' equity	**4,139,978**	4,057,284	4,351,166	1,537,877	1,410,545
Noncontrolling interests	**2,612**	2,893	1,582	37,042	39,754
Total Liabilities and Equity	**$ 7,300,905**	$ 6,957,611	$ 7,214,517	$ 3,181,271	$ 3,079,241

[1] Amounts for 2013 and 2012 may not equal amounts reported in the Corporation's prior years' Forms 10-K as amounts have been recast to reflect discontinued operations.
[2] Balance sheets reflect the adoption of Accounting Standards Update 2015-03, *Simplifying the Presentation of Debt Issuance Costs.*

COMMON STOCK PERFORMANCE GRAPH

The following graph compares the performance of the Corporation's common stock to that of the Standard and Poor's ("S&P") 500 Index and the S&P 500 Materials Index.



Cumulative Total Return[1]
(as of December 31)

	2009	2010	2011	2012	2013	2014	2015	2016
Martin Marietta	$100.00	$105.20	$ 87.78	$112.01	$120.65	$134.38	$168.74	$276.17
S&P 500 Index	$100.00	$115.06	$117.49	$136.30	$180.44	$205.14	$207.98	$232.85
S&P 500 Materials Index	$100.00	$122.20	$110.29	$126.79	$159.25	$170.26	$155.99	$182.02

[1] Assumes that the investment in the Corporation's common stock and each index was $100, with quarterly reinvestment of dividends.

AGGREGATES BUSINESS
Raleigh, North Carolina

MID-AMERICA GROUP
Raleigh, North Carolina

SOUTHEAST GROUP
Suwanee, Georgia

WEST GROUP
Dallas, Texas

CEMENT BUSINESS
Dallas, Texas

MAGNESIA SPECIALTIES BUSINESS
Nottingham, Maryland

Corporate Officers

Standing (left to right)

Donald A. McCunniff
Senior Vice President, Human Resources

Roselyn R. Bar
Executive Vice President, General Counsel and Corporate Secretary

C. Howard Nye
Chairman, President and Chief Executive Officer

Anne H. Lloyd
Executive Vice President and Chief Financial Officer

Seated (left to right)

Daniel L. Grant
Senior Vice President, Strategy and Development

Dana F. Guzzo
Senior Vice President, Chief Accounting Officer and Corporate Controller

Division Presidents

Standing (left to right)

William J. Gahan
President, Midwest Division

John J. Tiberi
President, Mid-Atlantic Division

Patrick H. Walker
President, Rocky Mountain Division

Larry J. Roberts
President, Southwest Division

Seated (left to right)

Robert B. Kidnew
President, Cement Business

Joseph H. Reilly
President, Southeast Division

John R. Harman
President, Mideast Division and Magnesia Specialties Business

C. Howard Nye
Chairman of the Board, President and Chief Executive Officer
Martin Marietta

Mr. Nye has served as Chairman of the Board since 2014, as President of Martin Marietta since 2006 and as Chief Executive Officer and a Director since 2010. Mr. Nye previously served as Chief Operating Officer from 2006 to 2009. Prior to joining Martin Marietta in 2006, Mr. Nye served as Executive Vice President, Hanson Aggregates North America, a producer of aggregates for the construction industry. Mr. Nye received a bachelor's degree with honors from Duke University and a law degree from Wake Forest University. In addition to his educational, professional and executive roles, Mr. Nye has been a gubernatorial appointee to the North Carolina Mining Commission and is a past Chairman and current Executive Committee member of the National Stone, Sand & Gravel Association (NSSGA). He also currently serves as Vice Chairman of the American Road Transportation Builders Association (ARTBA) and as a Director of the United States Chamber of Commerce, the world's largest business organization representing the interests of more than 3 million businesses. Mr. Nye also is an Independent Director of CREE, Inc. (NASDAQ: CREE), a multinational manufacturer of semiconductor light-emitting diode materials and devices where he is Chair of the Governance and Nominations Committee and a member of the Compensation Committee. Mr. Nye has further served on numerous other state, community and charitable organizations including the Duke University Alumni Association Board, Wake Forest University School of Law Alumni Board, and as Vice Chairman of UNC Rex Healthcare, Inc.'s Board of Trustees.

Sue W. Cole
Managing Partner
SAGE Leadership & Strategy, LLC

Ms. Cole has been a Director since 2002, and is currently the managing partner of SAGE Leadership & Strategy, LLC, an advisory firm for businesses, organizations and individuals relating to strategy, governance and leadership development. She was previously a principal of Granville Capital Inc., a registered investment advisor, from 2006 to 2011. Before that, Ms. Cole served as Regional Chief Executive Officer of the Mid-Atlantic Region of U.S. Trust Company, N.A., from 2003 to 2006, and as Chief Executive Officer of U.S. Trust Company of North Carolina and its predecessor, North Carolina Trust Company. Ms. Cole serves as Chair of the Management Development and Compensation Committee of Biscuitville, Inc., where she was previously Chairman of the Board. She also serves on the Investment Committee of the University of North Carolina at Greensboro and as a member of the North Carolina Economic Development Board. Ms. Cole is also past Chairman of the North Carolina Chamber of Commerce.

John J. Koraleski
Former Chairman of the Board, President and Chief Executive Officer
Union Pacific Corporation

Mr. Koraleski joined the Martin Marietta Board in 2016. Mr. Koraleski served from February 2015 through his retirement in September 2015 as executive Chairman of the Board of the Union Pacific Corporation (UP), which through its subsidiaries operates North America's premier railroad franchise, covering 23 states across the western two-thirds of the United States. Prior to that, he was named President and Chief Executive Officer of the UP in March 2012, elected as a Director of the UP in July 2012 and appointed Chairman of the Board in 2014. Since joining the Union Pacific (Railroad) in 1972, Mr. Koraleski held a number of executive positions in the UP and the Railroad, including, Executive Vice President – Marketing and Sales from 1999 to 2012, Executive Vice President – Finance and Information Technology, Chief Financial Officer and Controller. Mr. Koraleski served as the Chairman of The Bridges Investment Fund, Inc., a general equity fund whose primary investment objective is to seek long-term capital appreciation, from 2005 through March 2012 and is a past Chairman of the Association of American Railroads. Mr. Koraleski earned a Bachelor's and Master's degree in business administration from the University of Nebraska at Omaha.

David G. Maffucci
Former Executive Vice President and Chief Financial Officer
Xerium Technologies, Inc.

Mr. Maffucci has been a Director since 2005. He served as Executive Vice President and Chief Financial Officer of Xerium Technologies, Inc. from 2009 to 2010 and as a Director from 2008 until 2010. Xerium Technologies, Inc. is a manufacturer and supplier of consumable products used in paper production. Previously, Mr. Maffucci served as Executive Vice President of Bowater Incorporated and President of its Newsprint Division from 2005 to 2006. He served as Chief Financial Officer of Bowater Incorporated from 1995 to 2005. Mr. Maffucci is a Director of Domtar Corporation, where he serves as the Chair of its Audit Committee and a member of its Nominating and Corporate Governance and Finance Committees. Domtar Corporation designs, manufactures, markets and distributes a wide variety of fiber based products including communication papers, specialty and packaging papers, market pulp and absorbent hygiene products. Mr. Maffucci previously worked at KPMG.

William E. McDonald
Former Senior Vice President, Customer Service Operations
Sprint Corporation

Mr. McDonald has been a Director since 1996. He served as Senior Vice President, Customer Service Operations, of Sprint Corporation until his retirement in 2000. He was previously President and Chief Executive Officer of Sprint Mid-Atlantic Telecom and Sprint Mid-Atlantic Operations, positions he held from 1993 to 1998, and President and Chief Executive Officer for Sprint/United Telephone-Eastern from 1988 to 1993. Sprint Corporation provides telecommunications services for individuals, businesses and local telephone services.

Laree E. Perez
Owner and Managing Partner
The Medallion Company, LLC

Ms. Perez has been a Director since 2004, and is currently the Owner and Managing Partner of The Medallion Company, LLC, a consulting firm, since 2003. In 2015, she became employed as an investment consultant with DeRoy & Devereaux, an independent investment adviser, where she provides client consulting services. From 1996 until 2002, she was Vice President of Loomis, Sayles & Company, L.P. Ms. Perez was co-founder of Medallion Investment Company, Inc. and served as President and Chief Executive Officer from 1991 until it was acquired by Loomis Sayles in 1996. Ms. Perez was previously a Director of GenOn Energy, Inc., a large power producer in the United States, where she was Chair of its Audit Committee and a member of its Risk and Finance Oversight Committee.

Michael J. Quillen
Lead Independent Director
Martin Marietta

Former Chairman and Chief Executive Officer
Alpha Natural Resources, Inc.

Mr. Quillen has been a Director since 2008, and served as Lead Independent Director of Martin Marietta since 2014. Mr. Quillen served as Chairman of the Board of Directors and President of Alpha Natural Resources, Inc., an Appalachian coal supplier, from 2006 to 2009, as Chief Executive Officer from 2004 to 2009, and non-Executive Chairman through May 2012. Mr. Quillen has also served as Chairman (Rector) of the Board of Visitors of Virginia Polytechnic Institute and State University from July 2012 to June 2014 and was reappointed to an additional four-year term on the Board of Governors in July 2014. He was Chairman of the Audit and Finance Committee of Virginia Polytechnic Institute and State University from July 2010 to June 2012, and is currently Chairman of the Building and Grounds Committee of Virginia Polytechnic Institute and State University. He also served on the Virginia Port Authority from 2003 to 2012 and as Chairman from July 2011 to December 2012.

Dennis L. Rediker
Former President and Chief Operating Officer
Utility Composite Solutions International

Mr. Rediker has been a Director since 2003, and served as President and Chief Operating Officer of Utility Composite Solutions International, a developer and maker of composite materials for utility and municipal lighting applications, from 2011 to 2016, until its sale to Highland Industries. He is currently providing consulting and transition services to Highland Industries. From 2009 to 2011, Mr. Rediker served as the President and Chief Operating Officer of B4C, LLC, a developer and maker of ceramic materials for defense and aerospace applications. He previously served as President, Chief Executive Officer and a Director of The Standard Register Company until his retirement in 2008. Prior to joining The Standard Register Company in 2000, he was Chief Executive Officer and a Director of English China Clays, plc.

Donald W. Slager
President and Chief Executive Officer
Republic Services, Inc.

Mr. Slager has been a Director since 2016, and is currently the President and Chief Executive Officer of Republic Services, Inc., a service provider in the non-hazardous solid waste industry, holding this position since January 2011. Prior to this, he served as President and Chief Operating Officer. Mr. Slager also serves as a Director of Republic Services. Previously, Mr. Slager served as President and Chief Operating Officer for Allied Waste Industries, Inc., from 2005 to 2008, prior to its merger with Republic Services. Mr. Slager previously served as a Director of UTi Worldwide Inc. from 2009 until its sale in January 2016 to DSV A/S. UTi was a NASDAQ-listed international supply chain services and solutions company providing air and ocean freight forwarding, contract logistics, customs brokerage, distribution, inbound logistics, truckload brokerage and other supply chain management services. Mr. Slager served as Chair of UTi's Nominating and Corporate Governance Committee and a member of its Compensation Committee.

Stephen P. Zelnak, Jr.
Chairman of the Board
Beazer Homes

Former Chief Executive Officer
Martin Marietta

Mr. Zelnak served as Chairman of the Board of Martin Marietta from 1997 to 2014. From 1993 to 2009, Mr. Zelnak served as its Chief Executive Officer. Mr. Zelnak joined Martin Marietta Corporation in 1981. He served as president of the Materials group from 1992 until the formation of Martin Marietta in 1993. Mr. Zelnak is Chairman and majority owner of ZP Enterprises, a private investment firm engaged in the purchase of small manufacturing companies. He is also the Chairman of the Board of Directors of Beazer Homes USA, Inc. Mr. Zelnak is also past Chair of the North Carolina Chamber of Commerce and the National Stone, Sand & Gravel Association.

Board Committees

AUDIT COMMITTEE
David G. Maffucci, *Chair*
John J. Koraleski
Laree E. Perez
Dennis L. Rediker

ETHICS, ENVIRONMENT, SAFETY AND HEALTH COMMITTEE
Laree E. Perez, *Chair*
David G. Maffucci
Donald W. Slager
Stephen P. Zelnak

EXECUTIVE COMMITTEE
C. Howard Nye, *Chair*
John J. Koraleski
Michael J. Quillen

FINANCE COMMITTEE
Stephen P. Zelnak, *Chair*
Dennis L. Rediker
Donald W. Slager

MANAGEMENT DEVELOPMENT AND COMPENSATION COMMITTEE
Michael J. Quillen, *Chair*
Sue W. Cole
John J. Koraleski
William E. McDonald

NOMINATING AND CORPORATE GOVERNANCE COMMITTEE
Sue W. Cole, *Chair*
William E. McDonald
Michael J. Quillen

NOTICE OF PROXY

A formal notice of the Annual Meeting of Shareholders of the Corporation, together with a proxy and proxy statement, will be mailed to each shareholder approximately four weeks prior to the meeting. Proxies will be requested by the Board of Directors in connection with the meeting.

ANNUAL REPORT ON FORM 10-K

Shareholders may obtain, without charge, a copy of Martin Marietta's Annual Report on Form 10-K, as filed with the Securities and Exchange Commission for the fiscal year ended December 31, 2016, by writing to:

Martin Marietta
Attention: Corporate Secretary
2710 Wycliff Road
Raleigh, North Carolina 27607-3033

REGISTERED SHAREHOLDER CONTACT INFORMATION

American Stock Transfer & Trust Company, LLC
Shareholder Services Department
6201 15th Avenue
Brooklyn, NY 11219
Toll Free: (800) 937-5449
Local & International: (718) 921-8124
Email: info@amstock.com
Web site: www.astfinancial.com

Inquiries regarding your account records, issuance of stock certificates, distribution of dividends and IRS Form 1099 should be directed to American Stock Transfer & Trust Company, LLC.

COMMON STOCK

Listed: New York Stock Exchange
Stock Symbol: MLM

INDEPENDENT AUDITORS

PricewaterhouseCoopers LLP
4208 Six Forks Road, #1200
Raleigh, North Carolina 27609

CORPORATE HEADQUARTERS

2710 Wycliff Road
Raleigh, North Carolina 27607-3033
Telephone: (919) 781-4550

INVESTOR RELATIONS

Martin Marietta press releases and filings with the Securities and Exchange Commission can be accessed via the Corporation's web site.

Telephone: (919) 510-4776
Web site: **www.martinmarietta.com**

CORPORATE CODE OF ETHICS

Martin Marietta's Code of Ethical Business Conduct booklet is posted on the Corporation's web site, **www.martinmarietta.com**.

Martin Marietta
2710 Wycliff Road
Raleigh, NC 27607
(919) 781-4550
www.martinmarietta.com
NYSE Stock Symbol: MLM