GRANITE IS AMERICA'S INFRASTRUCTURE COMPANY

2018 ANNUAL REPORT & 2019 PROXY STATEMENT

GRANITE IS REBUILDING AMERICA'S INFRASTRUCTURE

1/3

One-third of the nation's major urban roads are rated in poor condition, costing the average motorist $599 annually in additional vehicle operating costs.

(Tripnet.org, October 2018)

$271 billion

in investment is needed to meet current and future demands for wastewater treatment over the next two decades, as an estimated 56 million new users connect to treatment systems.

(American Society of Civil Engineers, 2017 Infrastructure Report Card)

$836 billion

Chronic underinvestment in transportation infrastructure in the U.S. has led to an enormous backlog of highway and bridge capital needs.

(Federal Highway Administration, 2016, Tripnet.org, October 2018)

47,000

More than 47,000 of America's bridges are rated "structurally deficient" and need urgent repairs.

(American Road & Transportation Builders Association, March 2019)

Americans' daily lives and quality of life is being negatively impacted by decades of underinvestment in infrastructure, due to deterioration, congestion, and reduced reliability. The American Society of Engineers (ASCE) 2017 Infrastructure Report card gave America a "D+" with significant deficiencies in Transportation, Water, and Energy infrastructure sending the grade down from an initial "C" in 1988.[1] The estimated annual cost to improve America's infrastructure has risen nearly 77% in two decades, from an estimated $260 billion per year in 1988 to nearly $460 billion in 2017.[2]

Granite is a full-suite provider in the transportation, water infrastructure, and mining markets, and our diverse portfolio also includes power, renewable energy, and industrial and commercial development. We are America's Infrastructure Company, an award-winning firm in safety, quality and environmental stewardship, and honored for a decade straight as one of the World's Most Ethical Companies by Ethisphere® Institute.

With expanding capabilities and employees committed to living Granite's Core Values every single day, we are building and expanding geographic and end-market focused platforms for growth across the enterprise. Today, the Company is extremely well positioned to benefit from what we believe is now beginning – significant, incremental infrastructure investment, driven by long-overdue shifts in focus and investment at state and local levels across the U.S. Driven by the execution of our evolving Strategic Plan, Granite is committed to improve value creation for all stakeholders, including our shareholders, employees, partners and customers, and the communities in which we live and serve.

[1] The first infrastructure grades were given by the National Council on Public Works Improvements in its report "Fragile Foundations: A Report on America's Public Works," released in February 1988. ASCE's first Report Card for America's Infrastructure was issued a decade later.

[2] Figures calculated from 1988 "Fragile Foundations" report and 2017 ASCE Infrastructure Report Card.

A DISCUSSION WITH PRESIDENT AND CEO **JAMES H. ROBERTS** AND CHAIRMAN OF THE BOARD **CLAES G. BJORK**

WHAT WERE THE MOST SIGNIFICANT FINANCIAL AND NON-FINANCIAL ACCOMPLISHMENTS IN 2018?

Claes: From a Board perspective, the most significant accomplishments were related to improved safety and consistent execution, reflected in the successful completion of the largest acquisition in Granite's history, and in improved financial performance. Granite's expanded capabilities have positioned the Company extremely well to benefit from and leverage solid demand trends across geographies and across diverse end markets. In line with the Company's Strategic Plan execution, we continue to support the deliberate focus on reducing cyclicality through diversification.

Jim: In terms of financial performance, significant profit improvement in 2018, including adjusted net income up nearly 50 percent and adjusted EBITDA up 39 percent, was an exciting sign not only of our current financial health but also a window into our growth and profit outlook for

$3,318M
Revenue

$389M
Gross Profit

$0.96
EPS (Diluted)

$2.34
Adjusted EPS (Diluted)*

7.1%
Adjusted EBITDA Margin*

$339M
Cash & Marketable Securities

$3,690M
Contract Backlog*

* Please refer to the description and reconciliation of non-GAAP measures and reconciliations of these measures, which are included in 8-K filings, press releases, and publications on the Company's investor site, investor.graniteconstruction.com.

2018 Results

Granite is extremely well positioned to benefit from and leverage solid demand trends, across geographies and across diverse end markets.

2019 and beyond. However, the first things that come to my mind really should be viewed through a "lens" of who we are as a company, reflected in two of Granite's nine Core Values, "Safety" and "Integrity." Everything at Granite begins with our people and with Safety, working to ensure all Granite employees return home safely every single day. Specifically, improved performance is a direct reflection of our employees' hard work and dedication. Record safety performance in 2018, with an Occupational Safety & Health Administration Recordable Incident Rate[1] of 0.98, is a direct contributor to our improved financial results. We continually strive to reach zero incidents in any given year, and we are nearing our goal. And, of course, Integrity is a critical factor in our long-term success. We proudly highlight Granite's inclusion and recognition as one of the World's Most Ethical Companies® for the 10th consecutive year by the Ethisphere® Institute[2]. We believe that our strong culture of Safety and Integrity were cornerstones for strong financial performance for Granite in 2018, and they are drivers of continuing improved financial performance in 2019 and well beyond.

WHAT "INNING" IN THE GAME IS IT FOR GRANITE TODAY FROM AN ECONOMIC, PORTFOLIO, AND STRATEGIC STANDPOINT?

Claes: The Board has overseen robust strategic planning, while Granite's leaders have delivered on its execution, extending the Company's reach and its ambition to grow and deepen our presence; Granite is America's Infrastructure Company. Granite's emphasis on both geographic and end-market expansion positions the Company for solid near-term performance and significant, long-term growth. The strategic rationale is quite similar, contextually, with the broad geographic expansion and business rationalization process that I led at a global infrastructure firm two decades ago. This is a very exciting time for Granite to build on its foundation and drive shareholder value with consistent, long-term performance. Given this long-term focus, the Board continues to focus with the Granite team on leadership development and emerging leadership planning.

Jim: We are still situated in the early-to-middle innings of a nine-inning game, as medium- to long-term state

and local infrastructure programs have expanded across the country in the past five years. The markets in which we participate are highly competitive, but they also are largely bound or limited by geographic and capability restraints. In the near term, today's balance of public and private infrastructure demand remains the best we have seen in more than a decade. Today's markets are robust, driven by steady investment in commercial and industrial development, and by significant increases in state and local funding. In addressing these opportunities, we continue to emphasize patient, disciplined procurement strategies that increasingly work to align successful outcomes for our customers. Our intentional focus on growth and improved profitability from diversification has played a significant role in expanding Granite's footprint and capabilities, which has, in turn, expanded the Company's opportunity set, both on a near- and long-term basis. Granite is well-prepared to respond to the near-term ups and downs of seasonality and economic cycles across time to produce steady growth and improved financial performance over the long haul. We also believe that as we enter the mid-cycle innings of the current game, that not only are we harvesting proceeds from this economic cycle, but we are also preparing the company for long-term strategic opportunities.

PLEASE TALK ABOUT WHAT FACTORS DRIVE YOUR VIEW THAT GRANITE IS AMERICA'S INFRASTRUCTURE COMPANY? WHAT ARE THE KEY DIFFERENTIATORS FOR GRANITE?

Jim: Again, it all starts with thousands of talented people, who comprise Granite teams spread across the country and around the Americas. Granite is America's Infrastructure Company, as we deliver solutions across geographies and across end markets. We are not just builders, as we literally work from ground level up and down. We are vertically integrated, by harvesting raw materials, which creates opportunities for incremental operational and financial leverage across the enterprise. We are road builders, construction materials producers, bridge builders, and tunnelers. We install and repair water and wastewater facilities, install solar fields, upgrade the power grid with transmission and distribution projects, and we assist the mining industry in searching for and processing valuable resources and products. At Granite, we are not just builders; we are an infrastructure solutions resource for our customers and communities.

Claes: It has become clear over the past few years that Granite teams' intentional focus on growth and profit improvement through diversification is working. Development of new and deeper customer relationships, aligned with improved, disciplined bidding and pricing strategies are taking hold.

Granite teams will to benefit from a strong demand outlook, which is expected to create operational leverage and improved financial performance. It also has become increasingly clear that the public at large and voters widely have indicated to elected officials that now is the time to invest in infrastructure to preserve and improve their quality of life.

DOES THE SIGNIFICANT SHIFT IN PORTFOLIO DIVERSIFICATION LAST YEAR MARK A STRATEGIC CHANGE OR FOCUS FOR GRANITE?

Jim: Diversification and the resulting, intentional portfolio shifts in project size, scope, complexity, and risk, have been a key part of our strategic initiatives since 2013. And, the additions of Layne and LiquiForce in 2018 represent the follow-

[1] The Ethisphere® Institute is the global leader in defining and advancing the standards of ethical business practices that fuel corporate character, marketplace trust and business success. Ethisphere has deep expertise in measuring and defining core ethics standards using data-driven insights that help companies enhance corporate character. Ethisphere honors superior achievement through its World's Most Ethical Companies® recognition program, provides a community of industry experts with the Business Ethics Leadership Alliance (BELA) and showcases trends and best practices in ethics with the publication of Ethisphere magazine. More information about Ethisphere can be found at: http://ethisphere.com.

[2] The OSHA Recordable Incident Rate (or Incident Rate) is calculated by multiplying the number of recordable cases by 200,000, and then dividing that number by the number of labor hours at the company.

through of our well-articulated growth strategy. While acquisitions are certainly difficult and not without near-term risk, we intend to reap the long-term benefits of geographic, end-market, and customer diversification, with leverage and scale benefits increasing with time. Throughout the year, we also introduced Granite's strong safety culture to our newly acquired businesses, who welcomed it enthusiastically. We continue to look for profitable opportunities to expand our business both organically and through additional transactions.

Claes: The Company's course has not changed, as the Board continues to advise and support Granite teams in their execution of our five-year strategic plan. We continue to believe geographic and end-market expansion positions the company to create more long-term value for stakeholders than ever before. And we continue to emphasize key areas with Company management, including succession planning, workforce diversity, enterprise sustainability, and consistent financial performance.

We offer a special note of gratitude to all of Granite's stakeholders. We deeply appreciate our shareholders for their support and proactive engagement. And we also thank all of Granite's employees and teams for exhibiting Granite's Core Values every single day.

JAMES H. ROBERTS
President and Chief Executive Officer

CLAES G. BJORK
Chairman of the Board

BUILDING PLATFORMS FOR **SUSTAINED GROWTH**

Granite's infrastructure solutions create lasting impacts and assets for our public- and private-market clients.

Responding to the lessons learned in the last recession, Granite took significant steps toward geographic and end-market diversification in late-2012. By 2015, we began to pursue areas of interest for Granite to grow and diversify, highlighting targets in transportation, water, power, and mining markets.

The 2018 acquisitions of Layne Christensen Company and LiquiForce were an important step on the path of our organic and acquisition-led growth and diversification strategy, and they were an important step on our path as America's Infrastructure Company. Our segment reporting now reflects these efforts, and, we believe this view provides deeper visibility and insight to our business than ever before. We also believe an end-market focus coupled with geographic diversity is the most appropriate way to balance Granite's growth and risk opportunities.

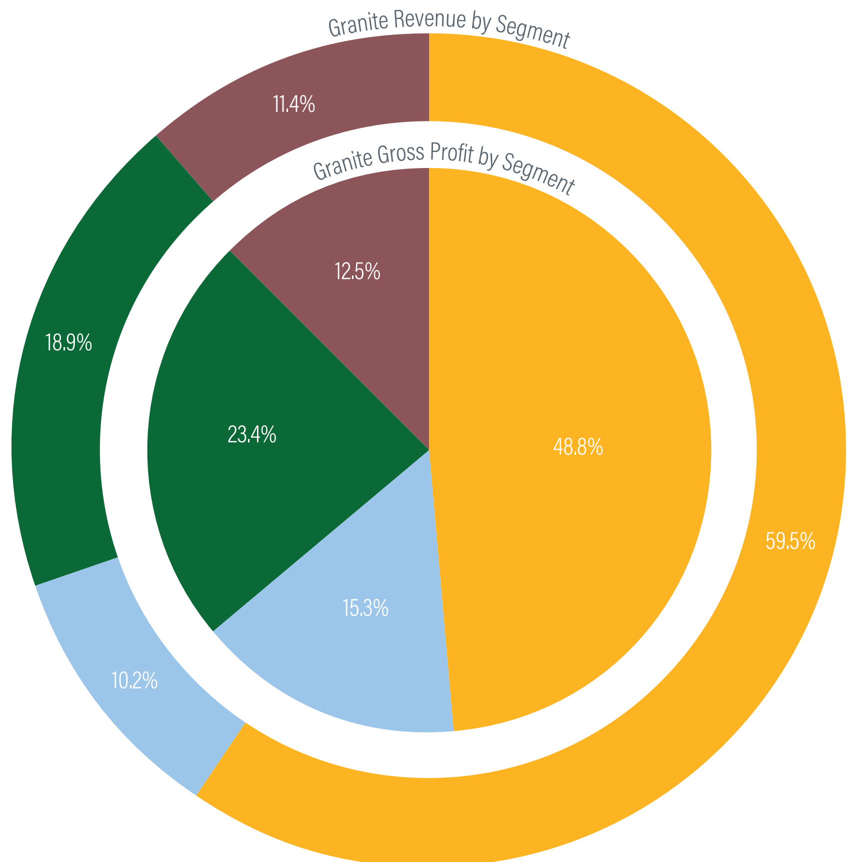
With more than nine decades of storied history to inform our perspective, Granite has built diversity across infrastructure solutions capabilities and geographies, guided by a long-term, business sustainability view and fueled by the leverage we expect from our broad, local presence and national resource base.

We continue to target geographic and end-market expansion, taking our vertically integrated model across the U.S. and exploring opportunities for incremental and bolt-on businesses – with a consistent, end-market focus on transportation, water, power, mining, and rail. We are positioning ourselves for the future, while remaining connected to our past by expanding a risk-balanced portfolio that drives consistent financial performance.

2018 Segment Overview

Segment	Revenue	Gross Profit
Transportation	$1,977M	$190M
Water	$338M	$60M
Specialty	$627M	$91M
Materials	$377M	$49M

(Figures may not reconcile to filings due to rounding.)



GRANITE CORE VALUES

Safety
Pursuit of Excellence
Integrity
Honesty
Fairness
Accountability
Consideration of Others
Citizenship
Reliability

"Boldly contending for that which is right and firmly rejecting that which is wrong."

—Granite Founder Walter J. "Pop" Wilkinson, 1940

Granite is America's Infrastructure Company, and we are building our projects and growing our business the Granite Way, based on our Code of Conduct and strong Core Values that guide our Company and our people to uphold the highest ethical standards. This is our mandate, providing Granite with its social license to operate. We are proud to have been recognized by the Ethisphere® Institute as one of the World's Most Ethical Companies for 10 consecutive years and certified as a "Great Place to Work" in 2017 & 2018.

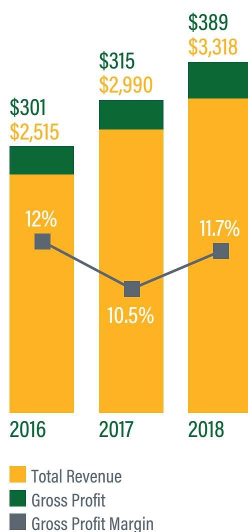
Our employees embody our Core Values, which guide them to improve the quality of life in the areas in which we work by designing and building infrastructure that is vital to the flow of commerce, supply of energy, and movement of goods and people. Granite works with customers to deliver infrastructure solutions safely, providing them with the highest standards of quality, safety, and service in diverse markets including transportation, power, water infrastructure, tunneling, and industrial facilities. Today it is clear that creating reliable infrastructure is itself a key component to creating a more sustainable society.

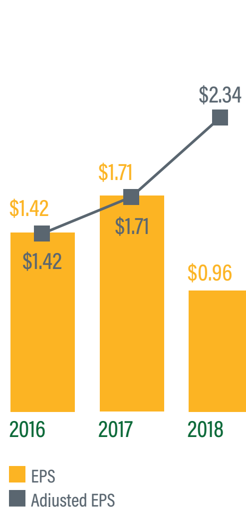
FINANCIAL HIGHLIGHTS*

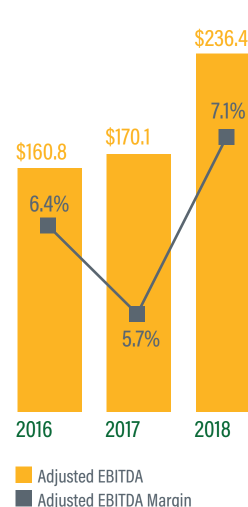
(Years Ended December 31,)

(In millions except per share amounts)	2018	2017	2016
Total revenue	$ 3,318,414	$ 2,989,713	$ 2,514,617
Gross profit	389,192	314,933	301,370
Gross profit margin	11.7%	10.5%	12.0%
EPS	$ 0.96	$ 1.71	$ 1.42
Adjusted EPS	$ 2.34	$ 1.71	$ 1.42
EBITDA	172,857	170,163	160,800
Adjusted EBITDA	236,480	170,163	160,800
Adjusted EBITDA margin	7.1%	5.7%	6.4%
Backlog	3,689,621	3,718,157	3,484,405
Cash & Marketable Securities	338,904	366,501	317,105

* Earnings per share (EPS) and Adjusted earnings per share on a fully diluted basis. Adjusted EPS, earnings before interest, taxes, depreciation, and amortization (EBITDA), adjusted EBITDA, adjusted EBITDA margin, and Backlog are non-GAAP measures. Please refer to the description and reconciliation of non-GAAP measures and reconciliations of these measures, which are included in 8-K filings, press releases, and publications on the Company's investor site, investor.graniteconstruction.com.







GRANITE IS AMERICA'S INFRASTRUCTURE COMPANY

2019 PROXY STATEMENT

GRANITE CONSTRUCTION INCORPORATED
585 West Beach Street
Watsonville, California 95076

Notice of Annual Meeting of Shareholders
April 23, 2019

Date: Thursday, June 6, 2019

Time: 10:30 a.m., Pacific Time

Place: Carmel Valley Ranch
1 Old Ranch Road
Carmel, CA 93923

Purposes of the Meeting:

- To elect four (4) directors for the ensuing three-year term;
- To hold an advisory vote on executive compensation for the Named Executive Officers;
- To ratify the appointment by the Audit/Compliance Committee of PricewaterhouseCoopers LLP as Granite's independent registered public accounting firm for the fiscal year ending December 31, 2019; and
- To consider any other matters properly brought before the meeting.

Who May Attend the Meeting:

Only shareholders, persons holding proxies from shareholders and invited representatives of the media and financial community may attend the meeting.

What to Bring:

If you received a Notice of Internet Availability of Proxy Materials, please bring that Notice with you. If your shares are held in the name of a broker, trust, bank, or other nominee, you will need to bring a proxy or letter from that broker, trust, bank, or other nominee that confirms you are the beneficial owner of those shares. If you hold shares through the Granite Construction Profit Sharing and 401(k) Plan, you will need to bring proof of ownership of the shares.

Record Date:

The record date for the 2019 Annual Meeting of Shareholders is April 12, 2019. This means that if you own Granite stock at the close of business on that date, you are entitled to receive notice of the meeting and vote at the meeting and any adjournments or postponements of the meeting.

Annual Report:

We have included a copy of the Annual Report on Form 10-K for the fiscal year ended December 31, 2018 with the proxy materials on Granite's website.

Shareholder List:

For 10 days prior to the meeting, a complete list of shareholders entitled to vote at the meeting will be available for examination by any shareholder for any purpose related to the meeting during regular business hours at Granite's headquarters located at 585 West Beach Street, Watsonville, CA 95076. The shareholder list will also be available at the annual meeting.

Information about the Notice of Internet Availability of Proxy Materials:

Instead of mailing a printed copy of our proxy materials, including our Annual Report, to each shareholder of record, we will provide access to these materials online. This reduces the amount of paper necessary to produce these materials, as well as the costs associated with mailing these materials to all shareholders. Accordingly, on or about April 23, 2019, we will begin mailing a Notice of Internet Availability of Proxy Materials to all shareholders of record as of April 12, 2019, other than persons who hold shares in the Granite Construction Profit Sharing and 401(k) Plan (such persons, the "401(k) Participants" and such plan, the "401(k) Plan"). We will also post our proxy materials on the website referenced in the notice (https://www.proxyvote.com). All 401(k) Participants will receive a package in the mail that includes all proxy materials. The proxy materials will be mailed to all 401(k) Participants on or about April 23, 2019.

All shareholders may choose to access our proxy materials online or may request to receive a printed set of our proxy materials. In addition, the notice and website provide information regarding how you may request to receive proxy materials in printed form by mail on an ongoing basis.

Proxy Voting:

Your vote is important. Please vote your proxy promptly so your shares can be represented at the annual meeting even if you plan to attend the meeting. Shareholders, including 401(k) Participants, can vote by Internet, telephone or mail. Shareholders, other than 401(k) Participants, may revoke a proxy and vote in person if attending the meeting.

To get directions to the 2019 Annual Meeting of Shareholders, call our Investor Relations Department at 831.724.1011 or visit our website at www.graniteconstruction.com at the "Investors" site.

By Order of the Board of Directors,

M. Craig Hall
Senior Vice President, General Counsel,
Corporate Compliance Officer and Secretary

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GRANITE CONSTRUCTION INCORPORATED
585 West Beach Street
Watsonville, California 95076

PROXY STATEMENT

As more fully described in the Notice of Internet Availability of Proxy Materials, Granite Construction Incorporated, a Delaware corporation (referred to herein as "we," "us," "our," "Granite" or the "Company"), on behalf of its Board of Directors, has made its proxy materials available to you on the Internet in connection with Granite's 2019 Annual Meeting of Shareholders, which will take place on June 6, 2019 at 10:30 a.m., Pacific Time, at the Carmel Valley Ranch, 1 Old Ranch Road, Carmel, California, 93923. The Notice of Internet Availability of Proxy Materials was mailed to all Granite shareholders of record, except 401(k) Participants, on or about April 23, 2019, and our proxy materials were posted on the website referenced in the Notice of Internet Availability of Proxy Materials and made available to shareholders on April 23, 2019. If you received a Notice of Internet Availability of Proxy Materials by mail and would like to receive a printed copy of our proxy materials, please follow the instructions included in the Notice of Internet Availability of Proxy Materials. The proxy materials were mailed to all 401(k) Participants on or about April 23, 2019.

Granite, on behalf of its Board of Directors, is soliciting your proxy to vote your shares at the 2019 Annual Meeting of Shareholders or any subsequent adjournment or postponement. We solicit proxies to give all shareholders of record an opportunity to vote on the matters listed in the accompanying notice and/or any other matters that may be presented at the annual meeting. In this proxy statement you will find information on these matters, which is provided to assist you in voting your shares.

Granite was incorporated in Delaware in January 1990 as the holding company for Granite Construction Company, which was incorporated in California in 1922. All dates in this proxy statement referring to service with Granite also include periods of service with Granite Construction Company, if applicable.

VOTING INFORMATION

Who Pays for This Solicitation?

Granite pays for the cost of this proxy solicitation. We will request brokers, trusts, banks and other nominees to solicit their customers who own our stock. We will reimburse their reasonable, out-of-pocket expenses for doing this. Our directors, officers and employees may also solicit proxies by mail, telephone, personal contact, or through online methods without additional compensation.

Who Can Vote?

You will have received notice of the annual meeting and can vote if you were a shareholder of record of Granite's common stock as of the close of business on April 12, 2019. You are entitled to one vote for each share of Granite common stock that you own. You may vote all shares owned by you as of the record date, including shares held directly in your name as the shareholder of record and shares held for you as the beneficial owner through a broker, trust, bank or other nominee. As of the close of business on April 12, 2019, there were 46,812,424 shares of common stock issued and outstanding.

How Do I Vote and What Is the Deadline for Voting My Shares?

Shareholders, other than 401(k) Participants, have the option to vote by proxy in the following three ways:

- ***By Internet:*** You can vote by Internet by following the instructions in the Notice of Internet Availability of Proxy Materials or by accessing the Internet at https://www.proxyvote.com and following the instructions at that website at any time prior to 11:59 p.m., Eastern Time, on June 5, 2019;
- ***By telephone:*** In the United States and Canada you can vote by telephone by following the instructions in the Notice of Internet Availability of Proxy Materials or by calling 1.800.690.6903 (toll free) and following the instructions at any time prior to 11:59 p.m., Eastern Time, on June 5, 2019; or
- ***By mail:*** If you have received a paper copy of the proxy card by mail you may submit your proxy by completing, signing and dating your proxy card and mailing it in the accompanying pre-addressed envelope. Instructions are also on the proxy card. Your proxy card must be received prior to 11:59 p.m., Eastern Time, on June 5, 2019.

Please refer to the Notice of Internet Availability of Proxy Materials or the information your broker, trust, bank or other nominee provides you for more information on the above options. If you vote your shares over the Internet or by telephone, you should not return a proxy card by mail (unless you are revoking your previous proxy).

401(k) Participants have the option to vote by proxy in the following three ways:

- ***By Internet:*** You can vote by Internet by following the instructions on your proxy card or by accessing the Internet at https://www.proxyvote.com and following the instructions at that website at any time prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019;
- ***By telephone:*** In the United States and Canada you can vote by telephone by following the instructions on your proxy card or by calling 1.800.690.6903 (toll free) and following the instructions at any time prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019; or
- ***By mail:*** You can submit your proxy by completing, signing and dating your proxy card and mailing it in the accompanying pre-addressed envelope. Instructions are also on the proxy card. Your proxy card must be received prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019.

If you vote your shares over the Internet or telephone, you should not return a proxy card by mail (unless you are revoking your previous proxy).

What Is the Voting Requirement To Approve the Proposals?

If there is a quorum, nominees for election to the Board in an uncontested election who receive the affirmative vote of a majority of the votes cast will be elected as members of our Board of Directors for the upcoming three-year term and until his/her successor is elected and qualified or he/she resigns or until his/her death, retirement or removal, or other cause identified in Granite's bylaws. This means that a majority of votes cast "for" the election of a nominee must exceed the number of votes cast "against" the

nominee's election. Each of the other matters identified in the Notice of Meeting will be approved if it receives the affirmative vote of a majority of the votes cast affirmatively or negatively on such matter. Any other matters properly proposed at the meeting, including a motion to adjourn the annual meeting to another time or place (including for the purpose of soliciting additional proxies), will also be determined by a majority of the votes cast affirmatively or negatively, except as otherwise required by law or by Granite's Certificate of Incorporation, as amended, or bylaws.

If you hold shares through a broker, trust, bank or other nominee (*i.e.*, in "street name"), and you do not provide your broker, trust, bank or other nominee with voting instructions, "broker non-votes" may occur. Generally, a broker non-vote occurs when a broker, trust, bank or other nominee who holds shares for a beneficial owner does not vote on a particular matter (i.e., a non-routine matter) because the broker, trust, bank or other nominee does not have discretionary voting power with respect to that matter and has not received instructions on such matter from the beneficial owner. Among our proposals, a broker, trust, bank or other nominee will have discretionary voting power only with respect to the proposal to ratify the appointment by the Audit/Compliance Committee of PricewaterhouseCoopers LLP as Granite's independent registered public accounting firm for the fiscal year ending December 31, 2019.

How Are Votes Counted?

In the election of directors and for all other proposals, you may vote "For," "Against" or "Abstain" with respect to each of the nominees and proposals. If you elect to abstain in the election of directors or any of the other matters, the abstention will not impact the outcome of these matters. In tabulating the voting results for the election of directors and such other matters, only "For" and "Against" votes are counted for purposes of determining whether a majority has been obtained. Abstentions and broker non-votes are not considered to be votes cast affirmatively or negatively and therefore will have no effect on the outcome of the vote on any of these matters.

If you vote by proxy card, telephone or the Internet, your shares will be voted at the annual meeting in the manner you indicated. James H. Roberts and Jigisha Desai are officers of the Company and were named by our Board of Directors as proxy holders. They will vote all proxies, or record an abstention, in accordance with the directions on the proxy. If no contrary direction is given, the shares will be voted as recommended by the Board of Directors. This proxy statement contains a description of each item that you are to vote on along with our Board's recommendations. Below is a summary of our Board's recommendations:

- ***For*** the election of each of the four (4) director nominees;
- ***For*** the approval of the compensation of the Named Executive Officers as disclosed in this proxy statement;
- ***For*** the ratification of the appointment by the Audit/Compliance Committee of PricewaterhouseCoopers LLP as Granite's independent registered public accounting firm for the fiscal year ending December 31, 2019.

As to any other matter that may be properly proposed at the annual meeting, including a motion to adjourn the annual meeting to another time or place, the shares will be voted in the discretion of the persons named on your proxy card.

After I Vote by Proxy Can I Change or Revoke My Proxy?

You can change your vote or revoke your proxy at any time before the annual meeting. Shareholders, other than 401(k) Participants, may change their vote by: (i) voting again by Internet at any time prior to 11:59 p.m., Eastern Time, on June 5, 2019, if you originally voted by Internet, (ii) voting again by telephone at any time prior to 11:59 p.m., Eastern Time, on June 5, 2019, if you originally voted by telephone, or (iii) returning a later dated proxy card such that it is received prior to 11:59 p.m., Eastern Time, on June 5, 2019, if you voted by mail. Shareholders, other than 401(k) Participants, may also revoke their proxy by filing with our Secretary a written revocation that is received by us before the polls close at the annual meeting. All 401(k) Participants may change their vote by: (i) voting again by Internet at any time prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019, if you originally voted by Internet, (ii) voting again by telephone at any time prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019, if you originally voted by telephone, or (iii) returning a later dated proxy card such that it is received prior to 12:00 p.m. (noon), Eastern Time, on June 4, 2019, if you voted by mail. Except for 401(k) Participants, shareholders may also change their vote or revoke their proxy by attending the annual meeting and voting in person if they are a shareholder of record.

If you hold your shares through a broker, bank, trust or other nominee, please refer to the information forwarded by your broker, bank, trust or other nominee for procedures on revoking your proxy.

Can I Vote at the Annual Meeting Instead of Voting by Proxy?

You may attend the annual meeting and, except for 401(k) Participants, vote in person instead of voting by proxy. However, even if you intend to attend the meeting we strongly encourage you to vote by Internet, telephone or mail prior to the meeting to ensure that your shares are voted. Although Granite's 401(k) Participants may attend the meeting, they cannot vote in person at the meeting.

What Constitutes a Quorum?

Granite's bylaws require a quorum to be present in order to transact business at the meeting. A quorum consists of a majority of the shares entitled to vote, either in person or represented by proxy. In determining a quorum, we count shares voted for or against, abstentions and broker non-votes as being present.

Who Supervises the Voting at the Meeting?

Granite's bylaws and policies specify that, prior to the annual meeting; management will appoint an independent Inspector of Elections to supervise the voting at the meeting and count the votes for each proposal following the closing of the polls at the annual meeting. The Inspector decides all questions as to the qualification of voters, the validity of proxy cards and the acceptance or rejection of votes. Before assuming his or her duties, the Inspector will take and sign an oath that he or she will faithfully perform his or her duties both impartially and to the best of his or her ability.

How Can I Find Out the Voting Results?

We will announce preliminary voting results at the annual meeting, and final results will be published on a Form 8-K to be filed with the Securities and Exchange Commission (the "SEC") within four business days following the annual meeting. If the final results are not available at that time, we will provide preliminary results in the Form 8-K, and we will provide the final results in an amendment to the Form 8-K as soon as they become available.

PROPOSAL 1: ELECTION OF DIRECTORS

The Board of Directors is divided into three classes. We keep the classes as equal in number as reasonably possible; however, the number of directors in a class depends on the total number of directors at any given time. Each director serves for a term of three years. The classes are arranged so that the terms of the directors in each class expire at successive annual meetings. This means that shareholders annually elect approximately one-third of the members of the Board. The Board currently consists of eleven directors.

The terms of Claes G. Bjork, Patricia D. Galloway, Alan P. Krusi and Jeffrey J. Lyash will expire at the 2019 Annual Meeting. The Board has nominated Claes G. Bjork, Patricia D. Galloway, Alan P. Krusi and Jeffrey J. Lyash for new terms. If elected, each of the nominees will serve as a director until the 2022 Annual Meeting and until his or her successor is elected and qualified or he or she resigns or until his or her death, retirement or removal, or other cause identified in Granite's bylaws.

James W. Bradford, Jr. was elected to his present term of office at the 2018 Annual Meeting. Pursuant to Granite’s retirement policy, Mr. Bradford’s service on the Board would normally conclude at this year’s Annual Meeting. However, upon recommendation of the Nominating and Corporate Governance Committee, the Board, at its February 6, 2019 meeting, approved an amendment to its retirement policy that will allow Mr. Bradford to remain on the Board until 2020.

Management knows of no reason why any of these nominees would be unable or unwilling to serve. All nominees have accepted the nomination and agreed to serve as a director if elected by the shareholders. However, if any nominee should for any reason become unable or unwilling to serve between the date of the proxy statement and the annual meeting, the Board may designate a new nominee and the persons named as proxies will vote for that substitute nominee.

BOARD OF DIRECTORS RECOMMENDATION

The Board of Directors unanimously recommends a vote “FOR” each of the above-named nominees.

Director Qualifications

The following paragraphs provide information as of the date of this proxy statement about each director and director nominee. The information presented includes information each director or director nominee has given us about his or her age, all positions he or she holds with Granite, his or her principal occupation and business experience for the past five years, and the names of other publicly-held companies of which he or she currently serves as a director or has served as a director during the past five years. In addition to the information presented below regarding each director’s and director nominee’s specific experience, qualifications, attributes and skills that led our Board to the conclusion that he or she should serve as a director, the Board also believes that all of our directors and director nominees have a reputation for integrity, honesty and adherence to high ethical standards. The Board also believes that all of our directors have demonstrated business acumen and an ability to exercise sound judgment, as well as a commitment of service to Granite and our Board.

Nominees for Director with Terms Expiring at the 2022 Annual Meeting

Claes G. Bjork **Director since 2006**

Mr. Bjork retired in 2002 as Chief Executive Officer of Skanska AB, Sweden, one of the world's largest construction companies, a position he had held since 1997. Prior to such time, Mr. Bjork held various executive and management positions within Skanska and served as Chairman of Scancem Cement. He is also a former Chairman and a current member of the board of directors of the Swedish American Chamber of Commerce, and he previously served on the boards of Consolidated Management Group and Qlik Technologies, Inc. We believe that Mr. Bjork's past experience as an executive with a major multi-national construction firm and his knowledge and understanding of the construction industry and Granite's competitors and customers qualify him to serve on our Board. Mr. Bjork studied Civil Engineering in Sweden. Age 73.

Patricia D. Galloway **Director since 2017**

Dr. Galloway assumed the role of Chairman of Pegasus Global Holdings, Inc., a firm that performs risk management, management consulting and strategic consulting business services in February 2018. From 2008 to 2018, Dr. Galloway served as Chief Executive Officer of Pegasus Global Holdings. Dr. Galloway served in various positions at The Nielsen-Wurster Group, Inc. including Chief Executive Officer and Principal, and President and Chief Financial Officer from 1981-2008. Dr. Galloway was the first woman President of the American Society of Civil Engineers and served from November 2003 to 2004. Dr. Galloway also serves as an arbitrator on construction and energy litigation cases. Dr. Galloway also serves as a director of the American Arbitration Association Board. From July 2018 to December 2018, Dr. Galloway served on the Board of SCANA Corporation as Chair of the Special Litigation Committee. Her service ended with the merger of SCANA and Dominion Energy, Inc. She also served on the National Science Board from 2006 to 2012. We believe that Dr. Galloway's experience in corporate risk management, combined with her executive-level and dispute resolution experiences, qualify her to serve on our Board. Dr. Galloway holds a Ph.D. in Infrastructure Systems Engineering (Civil) from Kochi University of Technology in Japan, an M.B.A. from the NY Institute of Technology and a Bachelor degree in Civil Engineering from Purdue University. Age 61.

Alan P. Krusi **Director since 2018**

Mr. Krusi served as President, Strategic Development of AECOM Technology Corporation, a NYSE-listed company, from 2008 through 2015, where he led the firm's M&A activities among other responsibilities. From 2003 until 2008, Mr. Krusi served as CEO and President of Earth Tech, Inc., a global engineering and construction firm, which primarily specialized in the design, construction, financing and operations of water treatment facilities, but also provided engineering and management services to the transportation and environmental markets. Prior to that, and over a period of twenty-six years, Mr. Krusi held a number of technical and management positions within the engineering and construction industries. From 1994 to 2003, Mr Krusi was president of Obrien Kreitzberg, a company which specialized in providing construction management services to the transportation markets. We believe that Mr. Krusi's extensive managerial experience attained from serving as the president and CEO of various companies in the engineering and construction services industry qualify him to serve on our Board. Mr. Krusi currently serves on the Board of Directors of Comfort Systems USA, Inc., Alacer Gold Corp., and Boxwood Merger Corp. Mr. Krusi holds a B.A. in Geological Sciences from the University of California, Santa Barbara. Age 64.

Jeffrey J. Lyash **Director since 2018**

Mr. Lyash assumed the role of President and CEO of the Tennessee Valley Authority in April 2019. The Tennessee Valley Authority is an corporate agency of the United States that provides electricity for business customers and local power companies and serves 10 million people in seven Southeastern states. Prior to joining the Tennessee Valley Authority, Mr. Lyash served as President and CEO of Ontario Power Generation from 2015 to March 2019. Mr. Lyash was formerly the president of CB&I Power, a position he held from 2013 to 2015, where he was responsible for a full range of engineering, procurement and construction of multi-billion dollar electrical generation projects in both domestic and international markets. Mr. Lyash served as Executive Vice President of Energy Supply for Duke/Progress Energy from 2008 to 2012. Mr. Lyash joined Progress Energy in 1993 where he held a wide range of management and executive roles. Mr. Lyash worked for the U.S. Nuclear Regulatory Commission in a number of senior technical and management positions throughout the Northeastern United States and in Washington, D.C, receiving the NRC Meritorious Service Award in 1987. We believe that Mr. Lyash's extensive managerial experience and his knowledge and understanding of the power industry qualify him to serve on our Board. Mr. Lyash earned a Bachelor's Degree in Mechanical Engineering from Drexel University, and was honoured with the Drexel University Distinguished Alumnus Award in 2009 and is a graduate of the U.S. Office of Personnel Management Executive Training Program and the Duke Fuqua School of Business Advanced Management Program. Age 57.

Continuing Directors with Terms Expiring at the 2020 Annual Meeting

James H. Roberts **Director since 2011**

Mr. Roberts joined Granite in 1981 and has served in various capacities, including President and Chief Executive Officer since September 2010. He also served as Executive Vice President and Chief Operating Officer from September 2009 to August 2010, Senior Vice President from May 2004 to September 2009, Granite West Manager from February 2007 to September 2009, Branch Division Manager from May 2004 to February 2007, Vice President and Assistant Branch Division Manager from 1999 to 2004, and Regional Manager of Nevada and Utah Operations from 1995 to 1999. Mr. Roberts served as Chairman of The National Asphalt Pavement Association in 2006. We believe that Mr. Roberts' knowledge of the construction industry, as well as his intimate knowledge of our business, employees, culture, and competitors, his understanding of the challenges and issues facing the Company and his insider's perspective of the Company's day-to-day operations and the strategic direction of the Company, qualify him to serve on our Board. He received a B.S.C.E. in 1979 and an M.S.C.E. in 1980 from the University of California, Berkeley, and an M.B.A. from the University of Southern California in 1981. He also completed the Stanford Executive Program in 2009. Age 62.

Gaddi H. Vasquez **Director since 2012**

Mr. Vasquez served as Senior Vice President of Government Affairs of Edison International and Southern California Edison, one of the nation's largest investor owned utility companies principally serving Southern California, from 2013 to February 2019. Prior to that, Mr. Vasquez served as Vice President of Public Affairs Southern California Edison from 2009 to 2013. From 1995 to 2002, Mr. Vasquez served as Division Vice President in Public Affairs of Southern California Edison. Mr. Vasquez also served as executive Director of the Annenberg Foundation Trust at Sunnylands in 2009, as U.S. Ambassador to the United Nations Agencies based in Rome, Italy from 2006 to 2009, and as Director of the U.S. Peace Corps from 2002 to 2006. Mr. Vasquez is currently a member of several national advisory boards, a member of the board of directors of the California Public Policy Institute, the National Advisory Board of the Salvation Army, the Pat Brown Policy Institute, a member of the board of governors of the California State University Foundation and a member of the board of trustees of Chapman University. We believe that Mr. Vasquez's executive level experience and his experience in public service, including leading major organizations involved in the development and construction of major public infrastructure and regional facilities, qualify him to serve on our Board. Mr. Vasquez holds a B.A. degree in Public Service Management from the University of Redlands. Age 64.

David C. Darnell **Director since 2017**

Mr. Darnell served as Vice Chairman of Global Wealth & Investment Management at Bank of America Corporation from September 2014 to December 2015 and served as its Co-Chief Operating Officer from September 2011 to September 2014. From July 2005 to September 2011, he served as the President of Global Commercial Banking at Bank of America Corporation. Prior to that, Mr. Darnell held various leadership positions at Bank of America since joining the company in 1979, including Middle Market Banking group president; Central Banking group president; and Midwest Region president. He also served as an Executive Vice President and Commercial Division Executive for Bank of America in Florida. We believe that Mr. Darnell's significant operational, acquisition, governmental, financial, leadership-development capabilities and technology execution skills qualify him to serve on our board. Mr. Darnell currently serves as a director of the Museum of the American Revolution and the United Services Automobile Association boards. Mr. Darnell holds an undergraduate degree from Wake Forest University and an M.B.A. from the University of North Carolina at Chapel Hill. Age 66.

Celeste B. Mastin **Director since 2017**

Ms. Mastin assumed the role of Chief Executive Officer of PetroChoice Lubrication Solutions in March 2018. PetroChoice is one of the largest petroleum-based lubricant distributors in the United States for passenger and commercial vehicles and industrial applications. Prior to joining PetroChoice, Ms. Mastin was the Chief Executive Officer of Distribution International, Inc., a supplier of certain construction equipment and environmental products from 2013 to 2017. From 2007 to 2011, she served as Chief Executive Officer and as Chief Operating Officer of MMI Products, Inc., a manufacturer and distributor of certain building materials. From 2004 to 2007, Ms. Mastin held the role of Vice President of color and glass performance materials and Vice President of growth and development at Ferro Corporation. Ms. Mastin started her career in sales at Shell Chemical. She held European and later global sales management positions as well as a management position at Bostik, Inc. We believe that Ms. Mastin's global chemicals and building materials sectors experience, as well as her operating experience in sales and marketing and proven leadership ability qualify her to serve on our Board. Ms. Mastin holds a B.S. in Chemical Engineering from Washington State University and a M.B.A. from the University of Houston. Age 50.

Continuing Directors with Terms Expiring at the 2021 Annual Meeting

David H. Kelsey **Director since 2003**

Mr. Kelsey served as Chief Financial Officer of Verdezyne, Inc. from 2016 to 2018. Verdezyne is a privately-owned company that uses synthetic biology to produce high-value chemicals. Prior to joining Verdezyne, Mr. Kelsey was the Chief Financial Officer of Elevance Renewable Sciences, Inc., a privately-owned producer of high performance specialty chemicals. From 2002 to 2011, Mr. Kelsey served as Chief Financial Officer of Sealed Air Corporation, an S&P 500 manufacturer of specialty packaging for food and other protective applications. We believe that Mr. Kelsey's experience as the chief financial officer of a major NYSE-listed company, as well as his in-depth knowledge and understanding of generally accepted accounting principles, experience in preparing, auditing and analyzing financial statements, understanding of internal control over financial reporting, and his understanding of audit committee functions qualify him to serve on our Board. Mr. Kelsey holds a B.S.E. degree in Civil and Geological Engineering from Princeton University and an M.B.A. degree from Harvard University Graduate School of Business. Age 68.

James W. Bradford, Jr. **Director since 2006**

Mr. Bradford retired in June 2013 as Dean and Ralph Owen Professor for the Practice of Management at Vanderbilt University, Owen School of Management, in which capacities he served since 2005. Upon retirement from Vanderbilt, Mr. Bradford was awarded the title of Dean Emeritus. Between 2002 and 2005, Mr. Bradford served as Acting Dean, Associate Dean Corporate Relations, Clinical Professor of Management and Adjunct Professor at Vanderbilt University, Owen School of Management. He has also served as President and Chief Executive Officer of United Glass Corporation, and President and Chief Executive Officer of AFG Industries. Mr. Bradford is currently also a member of the boards of directors of Genesco, Inc. and Cracker Barrel Old Country Store, Inc. We believe that Mr. Bradford's perspective as an academic, his experience in corporate compliance and governance matters and his knowledge of business strategies and financial matters, combined with his executive-level and legal experiences, qualify him to serve on our Board. Mr. Bradford holds a B.A. degree from the University of Florida and a J.D. degree from Vanderbilt University, and he has completed the Harvard Business School Advanced Management Program. Age 71.

Michael F. McNally **Director since 2016**

Mr. McNally retired in 2014 as President and Chief Executive Officer of Skanska USA Inc., a subsidiary of Skanska AB, one of the world's largest construction companies, a position he had held since 2008. During that time, he also served as one of nine members of Skanska AB's senior executive team. Prior to his tenure at Skanska, Mr. McNally held various management positions over a 38 year career with Fluor, Marshall Contractors, Mobil Oil and J. Ray McDermott. Mr. McNally is also currently a member of the boards of directors of Limbach Holdings Inc., Terracon, the U.S. Green Building Council and the Rhode Island Commerce Corporation. We believe that Mr. McNally's past experience as an executive with a major multi-national construction firm and his knowledge and understanding of the construction industry and Granite's customers qualify him to serve on our Board. Mr. McNally holds a B.S. degree in Civil Engineering from the University of Notre Dame and an M.B.A. from the University of Rhode Island. Age 64.

INFORMATION ABOUT THE BOARD OF DIRECTORS AND CORPORATE GOVERNANCE

Committees of the Board

The following chart shows the standing committees of the Board of Directors, the current membership of the committees and the number of meetings held by each committee in 2018.

	Audit / Compliance	Compensation	Nominating and Corporate Governance	Executive
Claes G. Bjork[(1)(2)]		✓	✓	Chair
James W. Bradford, Jr.[(1)]	✓	Chair		✓
David C. Darnell[(1)]	✓			✓
Patricia D. Galloway[(1)]	✓			✓
David H. Kelsey[(1)]	Chair		✓	
Alan P. Krusi[(1)]			✓	✓
Jeffrey J. Lyash[(1)]	✓	✓		
Celeste B. Mastin[(1)]		✓	✓	
Michael F. McNally[(1)]		✓	Chair	✓
James H. Roberts				✓
Gaddi H. Vasquez[(1)]		✓	✓	
Number of Meetings in 2018	**8**	**6**	**5**	**7**

(1) Independent directors pursuant to the listing standards of the NYSE.

(2) Chairman of the Board.

Audit/Compliance Committee

All members of the Audit/Compliance Committee are non-employee directors who are determined by the Board to be independent under the listing standards of the NYSE. Each member also satisfies the independence requirements for audit committee members of public companies established by the SEC. The Board has determined that Mr. Kelsey meets the criteria as an audit committee financial expert as defined by the SEC rules. The Board has also determined that all members of the Audit/Compliance Committee are financially literate as required by the listing standards of the NYSE. The Audit/Compliance Committee has direct responsibility for risk oversight related to accounting matters, financial reporting, and enterprise, legal and compliance risks. A more complete description of the risk responsibility, functions and activities of the Audit/Compliance Committee can be found under "Board Leadership Structure and its Role in Risk Oversight" on page 15 of this proxy statement and in "Report of the Audit/Compliance Committee" on page 44 as well as in the Audit/Compliance Committee charter. You can view and print the Audit/Compliance Committee charter on Granite's website. See "Granite Website" below.

Compensation Committee

All members of the Compensation Committee are non-employee directors who are determined by the Board to be independent under the listing standards of the NYSE. The Compensation Committee reviews and approves all aspects of compensation for our directors, our Chief Executive Officer and our other executive officers. In addition, the Compensation Committee is responsible for risks related to employment policies and our compensation and benefit systems, including consideration of whether any risks associated with such policies and systems are likely to have a material adverse effect on Granite. The Compensation Committee also reviews our overall compensation plans and strategies and makes recommendations to the Board for their consideration and approval. The Chief Executive Officer attends Compensation Committee meetings and recommends annual salary levels, incentive compensation and payouts for other executive officers for the Compensation Committee's approval. The Compensation Committee also administers the 2012 Equity Incentive Plan and the Amended and Restated 1999 Equity Incentive Plan, as

amended (the "1999 Equity Plan"), with respect to persons subject to Section 16 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). The Compensation Committee may delegate any of its responsibilities to a subcommittee composed of one or more members of the Committee. If you desire additional information concerning the Compensation Committee, you can read the Compensation Committee charter on Granite's website. See "Granite Website" below.

Nominating and Corporate Governance Committee

All members of the Nominating and Corporate Governance Committee are non-employee directors who are determined by the Board to be independent under the listing standards of the NYSE. The Nominating and Corporate Governance Committee recommends and nominates persons to serve on the Board. The Nominating and Corporate Governance Committee also develops and recommends corporate governance principles and practices to the Board and oversees the annual evaluations of the Board and certain senior executive officers of the Company. Additionally, the Nominating and Corporate Governance Committee oversees risks associated with our Corporate Governance Guidelines and Policies and Code of Conduct. The Nominating and Corporate Governance Committee's policy for considering director candidates, including shareholder recommendations, is discussed in more detail below under the heading "Board of Directors' Nomination Policy." This policy and the Nominating and Corporate Governance Committee charter are available on Granite's website. See "Granite Website" below.

Executive Committee

The Executive Committee's responsibility is to carry out the powers and authority of the Board in the management of Granite's business within limits set by the Board. The Executive Committee also meets regularly to consider the approval of certain large project bidding decisions, as well as to assess and monitor ongoing risks and contingencies related to large projects. The scope of the Executive Committee's authority is determined in accordance with the "Delegation of Authority and Policy" as adopted and revised from time to time by the Board.

Role of the Compensation Consultant

The Compensation Committee directly retained the services of Frederic W. Cook & Co., Inc. ("FW Cook") to provide advice and recommendations to the Compensation Committee on executive officer and Board of Director compensation programs.

During 2018, FW Cook provided the following services to the Compensation Committee related to executive officer compensation:

- Attended meetings of the Compensation Committee as the Committee's advisor;
- Evaluated the competitive positioning of Granite's executive officers' base salaries, annual incentive and long-term incentive compensation relative to our market data;
- Advised on target award levels within the annual and long-term incentive program and, as needed, on actual compensation actions;
- Assessed the alignment of executive officer compensation levels relative to our performance against Granite's peer companies and relative to the Compensation Committee's articulated compensation philosophy;
- Provided advice on the design of Granite's annual and long-term incentive plans;
- Advised on the performance measures and performance targets for the annual and long-term incentive programs;
- Assisted with the preparation of the "Compensation Discussion and Analysis" for the 2019 proxy statement;
- Assessed the potential for material risk within Granite's compensation policies and practices for all employees, including executive officers.

Based in part on the policies and procedures FW Cook and the Compensation Committee have in place, the Compensation Committee believes that the advice it receives from the executive compensation consultant, a FW Cook representative, is objective and not influenced by FW Cook's or its affiliates' relationships with Granite. These policies and procedures include:

- FW Cook's professional standards prohibit the executive compensation consultant from considering any other relationships FW Cook or any of its affiliates may have with Granite in rendering his or her advice and recommendations;

- The executive compensation consultant receives no incentive or other compensation based on the fees charged to Granite for other services provided by FW Cook or any of its affiliates;
- The executive compensation consultant is only responsible for selling compensation consulting services to Granite, not any other services provided by FW Cook or affiliate companies;
- The Compensation Committee has the sole authority to retain and terminate the executive compensation consultant;
- The executive compensation consultant has direct access to the Compensation Committee without management intervention;
- The Compensation Committee evaluates the quality and objectivity of the services provided by the executive compensation consultant each year and determines whether to continue to retain the consultant; and
- The protocols for the engagement limit how the executive compensation consultant may interact with management.

In retaining FW Cook, the Compensation Committee considered the six factors set forth in Exchange Act Rule 10C-1(b)(4)(i) through (vi) and concluded that no conflict of interest existed that would prevent FW Cook from serving as an independent compensation consultant to the Compensation Committee.

While it is necessary for the executive compensation consultant to interact with management to gather information, the Compensation Committee has adopted protocols governing if and when the executive compensation consultant's advice and recommendations can be shared with management. These protocols are included in the Compensation Committee's engagement letters with FW Cook. The Compensation Committee also determines the appropriate forum for receiving the executive compensation consultant's recommendations. Where appropriate, management invitees are present to provide context for the recommendations.

The Lead Director and Executive Sessions

Our bylaws provide that in the event the Chairman of the Board does not meet the independence requirements of the rules and regulations of the SEC and the listing standards of the NYSE, the directors shall elect a Lead Director to serve for a two-year term or until such time, if earlier, at which an independent Chairman is elected. Because Claes G. Bjork, the current Chairman of the Board, is an independent director, we currently do not have a Lead Director. In his capacity as Chairman, Mr. Bjork chairs all Board meetings and presides over all executive sessions of the non-employee members of the Board.

Board Leadership Structure and Its Role in Risk Oversight

The Board of Directors has determined that having an independent director serve as the Chairman of the Board is in the best interest of Granite and its shareholders at this time. The Board believes that having a strong independent director serve as Chairman promotes greater oversight of Granite by the independent directors and provides for greater management accountability. The structure ensures more active participation by the independent directors in setting the Board's agenda and establishing the Board's priorities. However, the Board, in accordance with its Corporate Governance Guidelines and Policies, retains the flexibility to decide, as new circumstances arise, whether or not to combine or separate the position of Chairman and Chief Executive Officer.

As with all companies, we face a variety of risks in our business. Our Board of Directors is responsible for oversight of our Company's risks, and effective risk management is a top priority of the Board and management. The Board believes that having a system in place for risk management and implementing strategies responsive to our risk profile and exposures will adequately identify our material risks in a timely manner. In order to more efficiently manage these risks, the Board has delegated certain risk management oversight responsibilities to relevant Board committees.

The Audit/Compliance Committee has direct responsibility for risk oversight relating to accounting matters, financial reporting, and enterprise, legal and compliance risks. Our Chief Financial Officer (who is responsible for managing the risk management function), General Counsel (who serves as our Corporate Compliance Officer), Vice President of Internal Audit, management, and independent registered public accounting firm, PricewaterhouseCoopers LLP, all report directly to, and meet with, the Audit/Compliance Committee on a regular basis. The Audit/Compliance Committee and the Board also meet periodically with management to review Granite's major financial risk exposures and the steps that management has taken to monitor and control such exposures, which include Granite's risk assessment and risk management policies.

The Executive Committee is responsible for overseeing management's efforts to assess risks related to the decision to bid on large projects, and monitoring ongoing risks and contingencies related to those projects. The Compensation Committee is responsible for overseeing the management of risks which are mitigated by our employment policies and our compensation and benefits systems, and the Nominating and Corporate Governance Committee oversees the management of risks which are mitigated by our Corporate Governance Guidelines and Policies and Code of Conduct, including compliance with listing standards for independent directors and committee assignments. The committee chairs report on risk related matters to the full Board from time to time as appropriate.

Board of Directors' Nomination Policy

Evaluation Criteria and Procedures

Members of the Board of Directors of Granite are divided into three classes and are nominated for election for staggered three-year terms. The Board, its members, its committee structure, its governance plans and its overall performance are continuously reviewed. Included in this review is a careful evaluation of the diversity of skills and experience of Board members weighed against Granite's current and emerging operating and strategic challenges and opportunities. The Board makes every effort to nominate individuals who bring a variety of complementary skills and, as a group, possess the appropriate skills and experience to oversee our business. Accordingly, although diversity is a consideration in the nominating and evaluation process, the Nominating and Corporate Governance Committee and the Board do not have a formal policy with respect to the consideration of diversity. Evaluations are made on the basis of observations and interviews with management and with Board members conducted annually by the Nominating and Corporate Governance Committee.

Current Board members whose performance, capabilities, and experience meet Granite's expectations and needs are nominated for re-election in the year of their respective term's completion. In accordance with Granite's Corporate Governance Guidelines and Policies, Board members will not stand for re-nomination and no proposed candidate will be re-nominated if the nominee's 72nd birthday occurs prior to the annual meeting of shareholders in the year of re-nomination or nomination. Moreover, Directors will retire no later than the first annual meeting of shareholders immediately following their 72nd birthday. The Board granted an exception to this policy for Messrs. Bjork and Bradford upon recommendation of the Nominating and Corporate Governance Committee.

Each member of the Board must meet a set of core criteria, referred to as the "three C's": Character, Capability and Commitment. Granite was founded by persons of outstanding character, and it is Granite's intention to ensure that it continues to be governed by persons of high integrity and worthy of the trust of its shareholders. Further, Granite intends to recruit and select persons whose capabilities, including their educational background, their work and life experiences, and their demonstrated records of performance will ensure that Granite's Board will have the balance of expertise and judgment required for its long-term performance and growth. Finally, Granite will recruit and select only those persons who demonstrate they have the commitment to devote the time, energy, and effort required to guarantee Granite will have the highest possible level of leadership and governance.

In addition to the three C's, the Board recruitment and selection process assures that the Board composition meets all of the relevant standards for independence and specific expertise. For each new recruitment process, a set of specific criteria is determined by the Nominating and Corporate Governance Committee with the assistance of the Chairman of the Board and an executive search firm, if the Committee deems engagement of such a firm appropriate. These criteria may specify, for example, the type of industry or geographic experience that would be useful to maintain and improve the balance of skills and knowledge on the Board. After the search criteria are established, an executive search firm is typically engaged to use its professional skills and its data sources and contacts, including current Granite Board members and officers, to identify appropriate candidates. The credentials of a set of qualified candidates provided by the search process are submitted for review by the Nominating and Corporate Governance Committee, the Chairman of the Board and senior officers. Based on this review, the Nominating and Corporate Governance Committee invites the top candidates for personal interviews with the Nominating and Corporate Governance Committee and Granite's executive management team.

Normally, the search, review and interview process results in a single nominee to fill a specific vacancy. However, a given search may be aimed at producing more than one nominee, or the search for a single nominee may result in multiple candidates of such capability and character that multiple candidates might be nominated and the Board may be expanded accordingly.

It is Granite's intention that this search and nomination process consider qualified candidates referred by a wide variety of sources, including all of Granite's constituents - its customers, employees and shareholders and members of the communities in which it operates. The Nominating and Corporate Governance Committee is responsible for assuring that relevant sources of potential candidates have been appropriately canvassed.

The Board used the evaluation criteria and procedures listed in this section to nominate and appoint Mr. Bjork, Dr. Galloway, Mr. Krusi and Mr. Lyash for election at the Annual Meeting.

Shareholder Recommendation and Direct Nomination of Board Candidates

Consistent with our bylaws and the Nominating and Corporate Governance Committee charter, Granite will review and consider for nomination any candidate for membership to the Board recommended by a shareholder, utilizing the same evaluation criteria and selection process described in "Evaluation Criteria and Procedures" above. The Committee will consider nominees to the Board recommended by shareholders. Shareholders wishing to recommend a candidate for consideration in connection with an election at a specific annual meeting should notify Granite well in advance of the meeting date to allow adequate time for the review process and preparation of the proxy statement, and in no event later than December 25, 2019 with respect to direct nominations.

In addition, Granite's bylaws provide that any shareholder entitled to vote in the election of directors may directly nominate a candidate or candidates for election at a meeting provided that timely notice of his or her intention to make such nomination is given. To be timely, a shareholder nomination for a director to be elected at an annual meeting must be received at Granite's principal office, addressed to the Corporate Secretary, not less than 120 days prior to the first anniversary of the date the proxy statement for the preceding year's annual meeting of shareholders was released to shareholders and must contain the information specified in our bylaws. If no meeting was held in the previous year, the date of the annual meeting is changed by more than 30 calendar days from the previous year, or in the event of a special meeting, to be on time, the notice must be delivered by the close of business on the tenth day following the day on which notice of the date of the meeting was mailed or public announcement of the date of the meeting was made.

To be timely, a shareholder nomination for a director to be elected at the 2020 Annual Meeting of Shareholders must be received at Granite's principal office, addressed to the Corporate Secretary, on or before December 25, 2019. For further information, see "Shareholder Proposals to be Presented at the 2020 Annual Meeting of Shareholders."

Director Independence

Under the listing standards of the NYSE, a director is considered independent if the Board determines that the director has no material relationship with Granite. In determining independence, the Board considers pertinent facts and circumstances including commercial, industrial, banking, consulting, legal, accounting, charitable and familial relationships, among others. The Board follows these guidelines, established by the NYSE, when assessing the independence of a director:

- A director who, within the last three years is, or has been, an employee of Granite or whose immediate family member is, or has been within the last three years, an executive officer of Granite, may not be deemed independent until three years after the end of such employment relationship. Employment as an interim Chairman or Chief Executive Officer or other executive officer shall not disqualify a director from being considered independent following that employment.

- A director who has received, or has an immediate family member who has received, during any twelve-month period within the last three years more than $120,000 in direct compensation from Granite, other than director and committee fees and pension or other forms of deferred compensation for prior service (provided such compensation is not contingent in any way on continued service), may not be deemed independent. Compensation received by a director for former service as an interim Chairman or Chief Executive Officer or other executive officer and compensation received by an immediate family member for service as an employee of Granite (other than an executive officer) will not be considered in determining independence under this test.

- The following directors may not be deemed independent: (a) a director who is a current partner or employee of a firm that is Granite's internal or external auditor; (b) a director who has an immediate family member who is a current partner of such a firm; (c) a director who has an immediate family member who is a current employee of such a firm and who personally works on Granite's audit; or (d) a director or immediate family member who was within the last three years a partner or employee of such a firm and personally worked on Granite's audit within that time.

- A director who, or whose immediate family member, is or has been within the last three years, employed as an executive officer of another company where any of Granite's present executive officers at the same time serves or served on that company's compensation committee may not be deemed independent.
- A director who is a current employee, or whose immediate family member is a current executive officer, of a company that has made payments to, or received payments from, Granite for property or services in an amount which, in any of the last three fiscal years, exceeds the greater of $1 million, or 2% of such other company's consolidated gross revenues for that fiscal year may not be deemed independent.

The Board reviews the independence of all non-employee directors every year. For the review, the Board relies on information from responses to questionnaires completed by directors and other sources. Directors are required to immediately inform the Nominating and Corporate Governance Committee of any material changes in their or their immediate family members' relationships or circumstances that could impact or change their independence status.

The following non-employee directors are independent under the listing standards of the NYSE: Claes G. Bjork, James W. Bradford, Jr., David C. Darnell, Patricia D. Galloway, David H. Kelsey, Alan P. Krusi, Jeffrey J. Lyash, Celeste B. Mastin, Michael F. McNally and Gaddi H. Vasquez.

Board and Annual Shareholder Meeting Attendance

During 2018, the Board of Directors held eight meetings. Each of the directors attended at least 75% of the aggregate of the total number of meetings of the Board and the total number of meetings of any committee(s) on which he or she served. Except for irreconcilable conflicts, directors are expected to attend the annual meeting of shareholders.

The annual meeting attendance policy is a part of Granite's Board of Directors Corporate Governance Guidelines and Policies and is posted on Granite's website. See "Granite Website" below. All eleven directors then in office attended Granite's 2018 Annual Meeting of Shareholders.

Communications with the Board

Any shareholder or other interested party wishing to communicate with the Board of Directors, or any particular director, including the Chairman of the Board or the Lead Director, if there is one, can do so by following the process described in the Communications with the Board of Directors Policy. The policy is posted on Granite's website. See "Granite Website" below.

Corporate Governance Guidelines and Policies

Granite's Board of Directors is subject to the Board of Directors Corporate Governance Guidelines and Policies. The Board of Directors Corporate Governance Guidelines and Policies is available on our website. See "Granite Website" below.

Code of Conduct

Granite's Code of Conduct applies to all Granite employees, including the Chief Executive Officer and the Chief Financial Officer, and to all directors, including the Chairman of the Board. The Code of Conduct is available on Granite's website. We will also post any amendments to the Code of Conduct, or waivers of the application of provisions of the Code of Conduct to any of our directors or executive officers, on our website. See "Granite Website" below.

Granite Website

The following charters and policies are available on Granite's website at www.graniteconstruction.com at the "Investors" site, then under "Corporate Governance": the Audit/Compliance Committee Charter, the Nominating and Corporate Governance Committee Charter, the Compensation Committee Charter, the Board of Directors Corporate Governance Guidelines and Policies, the Board of Directors' Nomination Policy, and the Communication with the Board of Directors Policy. You can also obtain copies of these charters and policies, without charge, by contacting Granite's Investor Relations Department at 831.724.1011. The Code of Conduct is available on Granite's website at www.graniteconstruction.com at the "Our Company" site under "Code of Conduct." You can obtain a copy of the Code of Conduct and any amendments to the Code of Conduct, without charge, by contacting Granite's Human Resources Department at 831.724.1011.

EXECUTIVE AND DIRECTOR COMPENSATION AND OTHER MATTERS

Compensation Discussion and Analysis

Objective of the Compensation Program

The market for executive talent is highly competitive and the objective of our executive compensation program is to attract and retain talented, creative, and experienced executives with the skills and leadership qualities necessary to compete in the marketplace, deliver consistent financial performance and grow shareholder value. The Compensation Committee believes that an effective way to enhance Granite's performance is through variable compensation structured to align our executives' interests with the Company's short and long-term performance objectives. Key elements of the executive officer program are as follows:

- Total direct compensation generally is targeted within the range of the 50th percentile of comparable positions in the market;
- Actual pay levels reflecting market data, individual experience, tenure and ability to impact business and financial results;
- Short-term and long-term goals aligned with interests of shareholders, with cash and stock-based incentives earned upon the attainment of pre-established financial and non-financial goals;
- A comprehensive benefits program which includes: medical, dental, vision, life, accidental death and dismemberment insurance, short-term and long-term disability insurance, 401(k) Plan, Employee Stock Purchase Plan, health and wellness benefits, paid vacation, holiday pay; and
- Eligibility, along with other management employees, to participate in our Non-Qualified Deferred Compensation Program.

Executive Officer Compensation Program

During 2018, we conducted our annual "Say on Pay" shareholder advisory vote, as required by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and Securities and Exchange Commission ("SEC") rules. This resulted in the approval of the compensation of our Named Executive Officers for 2017 by approximately 98% of the votes cast. The Compensation Committee considers these voting results when planning compensation for subsequent years and believes the results affirm the Company's executive compensation pay levels, programs and policies. Accordingly, the Compensation Committee did not adopt any changes to this program as a result of this vote, although the Compensation Committee is continually evaluating our executive compensation to further align the program with shareholders' interests. In addition to this endorsement by our shareholders of our executive compensation programs and practices, management values the views of our largest institutional shareholders and proxy advisory firms on our compensation practices and disclosures.

The key components of the 2018 program for compensating our Named Executive Officers are as follows:

- Adjustments to align target total direct compensation closer with market median levels if deemed necessary by the Compensation Committee;
- An Annual Incentive Plan ("AIP") with Net Income, Operating Income and Safety as the key performance measures to reward our Named Executive Officers for achieving these measures during the current year (for a detailed explanation, please refer to "2018 Annual Incentive Plan Compensation"); and
- A Long Term Incentive Plan ("LTIP") that includes a performance-based component that is based on relative Total Shareholder Return ("TSR") and a service based component to reward and sustain long term performance (for a detailed explanation, please refer to "Long Term Incentive Compensation").

The specific provisions of the compensation opportunity, plan design, and performance objectives are described in greater detail in the remainder of this Compensation Discussion and Analysis.

The following table identifies our 2018 Named Executive Officers:

Named Executive Officer	Title During 2018
James H. Roberts	President and Chief Executive Officer (CEO)
Jigisha Desai[1]	Senior Vice President and Chief Financial Officer (CFO)
Kyle T. Larkin	Senior Vice President and California Group Manager
James D. Richards	Senior Vice President and Northwest Group Manager
Dale A. Swanberg	Senior Vice President and Large Projects Group Manager
Laurel J. Krzeminski[2]	Retired Executive Vice President and Chief Financial Officer

(1) Ms. Desai was appointed Senior Vice President and CFO effective July 9, 2018.
(2) Ms. Krzeminski retired from the Company effective July 6, 2018.

Role of the Compensation Committee and Chief Executive Officer in Determining Executive Compensation

The Compensation Committee is actively engaged in the design and approval of all elements of the compensation program for our executive officers. Compensation and potential payouts are determined with assistance and recommendations from the compensation consultant as discussed below. The annual salary levels, incentive compensation targets and potential payouts of the other executive officers are reviewed and approved by the Compensation Committee based on recommendations of the CEO and the compensation consultant. The Compensation Committee determines the compensation of the CEO. For a detailed explanation, please refer to "Information About the Board of Directors and Corporate Governance — Committees of the Board — Compensation Committee."

Role of the Compensation Consultant

The Compensation Committee retained the services of FW Cook as its Compensation Consultant to provide advice and recommendations on executive officer and Board of Director compensation programs. Representatives of the compensation consultant attended Compensation Committee meetings and provided guidance and expertise on competitive pay practices and plan designs that are consistent with the key objectives of the compensation program. For a detailed explanation, please refer to "Information About the Board of Directors and Corporate Governance — Role of the Compensation Consultant."

Annual Risk Assessment

The Compensation Committee annually reviews the balance between risk and reward in the design of the executive officer and employee incentive compensation programs. The AIP and LTIP utilize a portfolio of performance metrics across the company designed to balance short and long term financial objectives and generate sustainable shareholder value. Performance goals are set as a range for each objective with a maximum payout opportunity assigned to each performance goal. The Compensation Committee carefully reviews incentive plan goals to ensure the appropriate levels of difficulty and reviews the financial performance of Granite and its peers to ensure performance goals and payout opportunities are appropriately calibrated. The performance measures, maximum payout opportunities and the calibration of achievability of incentive plan goals are all designed to help ensure that the incentive plans appropriately balance risk and reward, limiting excessive risk-taking and the potential for windfall payouts. Finally, the Company maintains several risk mitigating governance policies such as executive stock ownership guidelines, anti-hedging/pledging policies and an incentive compensation recoupment policy. As a result of the above, the Compensation Committee believes that the compensation program is not reasonably likely to have a material adverse effect on the Company.

Market Data Considered in Determining Executive Compensation for 2018

The Compensation Committee reviews available industry compensation data to establish competitive compensation levels which will reward our executive officers if performance targets are achieved. During 2018, benchmark data from 2017 was obtained from a single peer group consisting of eleven public companies representing the construction, engineering, and/or construction materials industries. The Compensation Committee believes that industry-specific companies are the most appropriate source of benchmark data as they are most representative of Granite's market for talent. The data from the peer group of eleven public companies is used by the Compensation Committee to establish base salary, target total cash and long term incentive compensation levels and as the comparative group to measure relative Total Shareholder Return performance. For a detailed explanation, please refer to "Long Term Incentive Compensation – Performance Awards."

Peer Group of Public Companies

The eleven public companies selected for the peer group to inform 2018 target total direct compensation levels are in the construction, engineering, and/or construction materials industries and compete for executive talent in the same market as Granite.

The table below names each of the companies in the 2018 peer group.

Company Name		
Aegion Corporation	MasTec, Inc.	Summit Materials, Inc.
Dycom Industries, Inc.	MYR Group, Inc.	Tutor Perini Corporation
EMCOR Group, Inc.	Primoris Services Corporation	Vulcan Materials Company
Martin Marietta Materials, Inc.	Quanta Services, Inc.	

Compensation Elements

Base Salaries

The Compensation Committee reviews and sets the base salaries for the Named Executive Officers annually. Salary increases are based on individual performance and tenure in their respective positions, and any increases are supported by the market median data from Granite's peer group.

Effective July 9, 2018, Ms. Desai was promoted from Vice President, Corporate Finance and Treasurer to Senior Vice President and CFO. In connection with her promotion, Ms. Desai's base salary was set at $425,000. Named Executive Officer base salaries for 2018 were 11% below the median data, in aggregate, reflecting a conservative positioning for certain Named Executive Officers that were new to their respective role. Mr. Larkin was promoted to Senior Vice President and California Group Manager effective October 16, 2017 and did not receive an increase to his base salary for 2018 due to his recent promotion.

Base salaries for 2018 and 2017 for the Named Executive Officers were as follows:

BASE SALARY CHART

Named Executive Officer	2017 Base Salary	2018 Base Salary	% of Change
James H. Roberts	$ 850,000	$ 900,000	5.9%
Jigisha Desai[(1)]	—	$ 425,000	n/a
Kyle T. Larkin	$ 350,000	$ 350,000	0.0%
James D. Richards	$ 400,000	$ 425,000	6.3%
Dale A. Swanberg	$ 400,000	$ 425,000	6.3%
Laurel J. Krzeminski[(2)]	$ 500,000	$ 500,000	0.0%

(1) Ms. Desai was promoted to Senior Vice President and CFO effective July 9, 2018.

(2) Ms. Krzeminski retired from the Company effective July 6, 2018.

2018 Annual Incentive Plan Compensation

Effective January 1, 2018, the Compensation Committee approved changes to the 2018 Annual Incentive Plan to support a heightened focus on the achievement of the Company's annual financial plan. The 2018 plan used a goal attainment approach that pays a target award for achieving pre-established target Company Net Income and/or Group Operating Income goals, a change from the funded pool approach used in prior years. Annual profitability forecasts were made at the beginning of the year and were used to set the target performance goals. Threshold and maximum goals were also established, and payouts were determined based on achievement versus the goals. As in prior years, performance against Company and/or Operating Group safety objectives served as a modifier to the calculated bonus based on financial performance.

ANNUAL INCENTIVE OPPORTUNITY

The Named Executive Officers participate in the AIP pursuant to which annual incentive compensation is determined by overall company performance and/or applicable group performance. As presented in more detail below, each Named Executive Officer's targeted annual incentive opportunity is based on external benchmark data for similar positions and is expressed as a percentage of base salary. Pursuant to the terms of the AIP, maximum cash payouts cannot exceed two times the target opportunity. The aggregate AIP target opportunities were 3% below peer group median data.

The 2018 AIP opportunities for the Named Executive Officers are presented below:

ANNUAL INCENTIVE OPPORTUNITY

		Annual Incentive Opportunity			
Named Executive Officer	**2018 Base Salary**	**Target[1] as % of Base Salary**	**Threshold**	**Target**	**Maximum**
James H. Roberts	$ 900,000	115%	$517,500	$ 1,035,000	$ 2,070,000
Jigisha Desai[2]	$ 425,000	75%	$159,375	$ 318,750	$ 637,500
Kyle T. Larkin	$ 350,000	75%	$131,250	$ 262,500	$ 525,000
James D. Richards	$ 425,000	75%	$159,375	$ 318,750	$ 637,500
Dale A. Swanberg[3]	$ 425,000	75%	$159,375	$ 318,750	$ 637,500
Laurel J. Krzeminski[4]	$ 500,000	75%	$187,500	$ 375,000	$ 750,000

(1) The "target" is set by the Compensation Committee after a review of annual incentive opportunity target awards at Granite's peer group and is the basis for establishing the threshold and maximum annual incentive.

(2) Ms. Desai's annual incentive target opportunity and payout presented in the table were prorated as a result of her promotion to Senior Vice President and CFO effective July 9, 2018. For additional information regarding Ms. Desai's incentive compensation plan prior to her promotion, please refer to "2018 Incentive Compensation Plan for Jigisha Desai."

(3) In connection with his appointment to Senior Vice President and Large Projects Group Manager, Mr. Swanberg was guaranteed a minimum award of $200,000, provided that if actual performance under the AIP resulted in a greater award, the award would be based on actual performance.

(4) Ms. Krzeminski retired from the Company effective July 6, 2018, and in accordance with the terms of her AIP agreement, she was eligible to receive a prorated award based on full-year Company performance.

2018 AIP Performance Measures

At the beginning of the annual performance period (January 1st – December 31st), the Compensation Committee approved the 2018 AIP weighting and financial performance goals. The Compensation Committee determined that 2018 AIP payouts for Mr. Roberts, Mses. Desai and Krzeminski were to be determined based on Company financial performance and a Company safety multiplier. For Messrs. Larkin, Richards and Swanberg (the Operating Group Named Executive Officers), the Committee established independent measures for the 2018 AIP to be paid out based on Company financial performance and applicable Group financial performance with the respective safety multipliers applied.

The following table illustrates the 2018 AIP performance measures:

	Company Performance		Group Performance	
Named Executive Officer	**Weighting**	**Performance Measure**	**Weighting**	**Performance Measure[1]**
James H. Roberts	100%	Company Net Income[2] x Company Safety Multiplier[4]	—	Group Operating Income[3] x Group Safety Multiplier[4]
Jigisha Desai	100%		—	
Kyle T. Larkin	40%		60%	
James D. Richards	40%		60%	
Dale A. Swanberg	40%		60%	
Laurel J. Krzeminski	100%		—	

(1) Measured based on each individual Group performance, where applicable.

(2) Company Net Income is defined as actual consolidated Net Income attributable to Granite Construction Incorporated calculated in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP") and adjusted for items permitted by the AIP which were primarily related to business acquisitions during 2018.

(3) Operating Income is defined as actual operating income for the applicable Group calculated in accordance with U.S. GAAP and adjusted for items permitted by the AIP which were primarily related to business acquisitions during 2018.

(4) Granite uses the OSHA Recordable Incident Rate ("ORIR"), a nationally recognized metric, to benchmark its safety performance against the construction industry. ORIR tracks all injuries which require OSHA documentation (i.e., those that result in medical treatment, restricted duty or lost time) and represents the number of events per 100 full-time employees. It is calculated by multiplying the number of OSHA recordable injuries (total injuries or lost time injuries) by 200,000 (2,000 hours per employee per year x 100 employees) and dividing by the total number of hours of employee exposure.

2018 AIP Performance Measure and Results

The Compensation Committee considered the Company's annual operating plan for the year in setting threshold, target and maximum performance goals for 2018 AIP performance metrics. The payout based on Company and/or Group financial performance is zero if Company and/or applicable Group performance, respectively, is below the financial performance threshold. Once threshold requirements are met, Named Executive Officers can earn between 50% and 200% of their annual target opportunity depending on the level of achievement of the Company and/or Group financial performance. Linear interpolation applies for performance between threshold/target and target/maximum performance levels. The calculated bonus under Company and/or Group performance components is subject to a safety multiplier ranging from 90% to 110% based on Company and/or Group safety performance, as applicable.

The following were the financial measures set for 2018:

2018 AIP FINANCIAL PERFORMANCE GOALS

Performance Level	Threshold 50%	Target 100%	Maximum 200%
Company Net Income	$81.9M	$102.4M	$122.9M
California Operating Income	$76.5M	$ 95.6M	$114.7M
Northwest Operating Income	$60.0M	$ 75.0M	$ 90.0M
Large Projects Operating Income	$23.1M	$ 34.6M	$ 41.5M

The following table outlines the safety performance goals and results. Linear interpolation is used to determine the multiplier when actual performance attained falls between threshold/target and target/maximum performance levels:

2018 AIP SAFETY MULTIPLIER GOALS

Performance Level & Payouts	Threshold 90%	Target 100%	Maximum 110%	Safety ORIR Results	Safety Multiplier
Company Safety ORIR	1.6	1.0	0.8	0.95	103%
California Safety ORIR	1.6	1.0	0.8	0.78	110%
Northwest Safety ORIR	1.6	1.0	0.8	0.72	110%
Large Projects Safety ORIR	1.6	1.0	0.8	2.00	90%

Based on actual performance, individual incentives earned by the Named Executive Officers were as follows:

SUMMARY OF ACTUAL 2018 AIP TOTAL BONUS PAYOUTS

Named Executive Officer	Total AIP Target Opportunity	Actual Company Bonus Payout	Actual Group Bonus Payout	Other	Total Actual AIP Bonus Payout[(1)]
James H. Roberts	$1,035,000	$628,970	n/a	—	$628,970
Jigisha Desai[(2)]	$ 140,294	$ 85,257	n/a	—	$ 85,257
Kyle T. Larkin	$ 262,500	$ 63,810	$272,003	—	$335,813
James D. Richards	$ 318,750	$ 77,485	$155,678	—	$233,163
Dale A. Swanberg[(3)]	$ 318,750	$ 77,485	—	$122,515	$200,000
Laurel J. Krzeminski[(4)]	$ 201,923	$122,705	n/a	—	$122,705

(1) Represents the sum of 2018 Company and Group bonus payouts.

(2) Ms. Desai's annual incentive target opportunity and payout presented in the table above were prorated as a result of her promotion to Senior Vice President and CFO effective July 9, 2018. For additional information regarding Ms. Desai's incentive compensation plan prior to her promotion, please refer to "2018 Incentive Compensation Plan for Jigisha Desai."

(3) In connection with his appointment to Senior Vice President and Large Projects Group Manager, Mr. Swanberg was guaranteed a minimum award of $200,000, provided that if actual performance under the AIP resulted in a greater award, the award would be based on actual performance. The amount included under "Other" reflects a payment to Mr. Swanberg as a result of his guaranteed minimum award.

(4) Ms. Krzeminski retired from the Company effective July 6, 2018 and in accordance with the terms of her AIP agreement, she was eligible to receive a prorated award based on full-year Company performance.

Long Term Incentive Compensation

To emphasize and reward sustained long term performance all Named Executive Officers, except for Ms. Desai, participated in the 2018 LTIP. The LTIP target opportunity was 10% below the median data, in aggregate, and varied by each Named Executive Officer and their role. No changes were made to the LTIP incentive target opportunity for our Named Executive Officers for 2018.

The LTIP incentive target opportunities for the Named Executive Officers under the 2018 LTIP are presented below:

Named Executive Officer	LTIP Incentive Target Opportunity
James H. Roberts	$2,000,000
Jigisha Desai[(1)]	n/a
Kyle T. Larkin	$ 450,000
James D. Richards	$ 450,000
Dale A. Swanberg	$ 450,000
Laurel J. Krzeminski[(2)]	$ 650,000

(1) Ms. Desai became an Executive Officer effective July 9, 2018 and was not eligible to participate in the 2018 – 2020 LTIP. For additional information regarding Ms. Desai's incentive compensation plan prior to her promotion, please refer to "2018 Incentive Compensation Plan for Jigisha Desai."

(2) Ms. Krzeminski retired from the Company effective July 6, 2018 and was not eligible to receive a prorated award for 2018 - 2020.

Each Named Executive Officer's target award is divided into two components – Performance Awards and Service Awards. The table below reflects the weighting of the two components:

LTIP COMPONENTS WEIGHTING

	Weighting
Performance Award	80%
Service Award	20%
Total	**100%**

Performance Awards

The Compensation Committee set payouts for the 2018 – 2020 performance period to be calculated based on Granite's TSR rank relative to a peer group of companies in the Standard & Poor's Construction Materials and Construction Equipment classification. The higher Granite's overall performance ranking is, the greater the payout percentage. However, the Compensation Committee has the ability to reduce the payout percentage for the performance period in its sole discretion. The TSR award calculation methodology will remove any acquired peers from the measurement group.

The following are the 2018 – 2020 peer group companies and funding mechanism.

2018 – 2020 TSR Peer Group (12 companies, including Granite)

• Aegion Corporation	• MasTec Inc.	• Summit Materials Inc.
• Dycom Industries	• MYR Group Inc.	• Tutor Perini Corporation
• EMCOR Group Inc.	• Primoris Services Corporation	• Vulcan Materials Company
• Martin Marietta Materials Inc.	• Quanta Services, Inc.	

2018 – 2020 TSR FUNDING MECHANISM

(Utilizes a Relative TSR Percentile Ranking System to determine payout as a percentage of Target.)

2018 – 2020 Relative TSR Percentile Rank	Payout (% of Target)[1]
80th Percentile or better	200%
50th Percentile	100%
35th Percentile	50%
Below 35th Percentile	0%

(1) Linear interpolation applies between performance levels.

Total Shareholder Return Performance Calculation

TSR is calculated by dividing (i) the sum of the closing price on the last trading day of the performance period and all dividends and per-share cash equivalents paid during the performance period, by (ii) the closing price on the day before the first day of the performance period. The performance awards are calculated at the end of a three-year performance period. The 2015 performance awards were calculated for the three-year period ending December 31, 2017 with vesting and payment in March 2018. The 2016 performance awards were calculated for the three-year period ending December 31, 2018 with vesting and payment in March 2019. The 2017 performance awards will be calculated for the three-year period ending December 31, 2019 with vesting and payment the following year. The 2018 performance awards will be calculated for the three-year period ending December 31, 2020 with vesting and payment the following year.

TSR Performance Period	Award Opportunity	Payout Timing (if award earned based on performance)
January 1, 2015 – December 31, 2017	0% – 200% of 2015 Performance Award	Q1 2018
January 1, 2016 – December 31, 2018	0% – 200% of 2016 Performance Award	Q1 2019
January 1, 2017 – December 31, 2019	0% – 200% of 2017 Performance Award	Q1 2020
January 1, 2018 – December 31, 2020	0% – 200% of 2018 Performance Award	Q1 2021

Payouts for 2015 – 2017 Total Shareholder Return Awards Paid in 2018

Payouts for the 2015 – 2017 TSR performance period are reflected in the 2018 Summary Compensation and 2018 Grant Plan Based Award tables. TSR was calculated on Granite's performance relative to the industry peer group of construction, engineering and construction materials used for benchmarking data as approved by the Compensation Committee effective January 1, 2015.

The following are the 2015 – 2017 peer group companies and funding mechanism.

2015 – 2017 TSR Peer Group (12 companies, including Granite)

• Aegion Corporation	• Martin Marietta Materials Inc.	• Quanta Services, Inc.
• Dycom Industries	• MasTec Inc.	• Tutor Perini Corporation
• EMCOR Group Inc.	• MYR Group Inc.	• Vulcan Materials Company
• Layne Christensen Company	• Primoris Services Corporation	

2015 – 2017 TSR FUNDING MECHANISM

(Utilizes a Relative Percentile Ranking System to determine payout as a percentage of Target.)

2015 – 2017 Relative Percentile Ranking	Payout (% of Target)[1]
90th Percentile or better	200%
75th Percentile	150%
50th Percentile	100%
25th Percentile	50%
Below 25th Percentile	0%

(1) Linear interpolation applies between performance levels.

Granite's three-year TSR performance as of December 31, 2017 for the performance period from January 1, 2015 through December 31, 2017 was at the 55th percentile, reflecting a share-based earnout of 109% of the target. See "2015 – 2017 TSR Funding Mechanism" above. The earned awards for the performance period are presented in the following table.

TSR PERFORMANCE PERIOD JANUARY 1, 2015 – DECEMBER 31, 2017

Named Executive Officer	Target TSR Incentive	Actual TSR Incentive	Restricted Stock Units Awarded[1]
James H. Roberts	$1,133,333	$1,235,333	34,808
Jigisha Desai[2]	n/a	n/a	n/a
Kyle T. Larkin[3]	n/a	n/a	n/a
James D. Richards	$ 300,000	$ 327,000	9,214
Dale A. Swanberg[3]	n/a	n/a	n/a
Laurel J. Krzeminski	$ 366,667	$ 399,667	11,261

(1) Awards are denominated as a cash value until earned based on performance. The number of RSUs awarded was calculated by dividing the actual long-term incentive value by $35.49, which was the average stock price over the first 30 days of January 2015.

(2) Ms. Desai became an Executive Officer effective July 9, 2018 and was not eligible to participate in the 2015 – 2017 LTIP. For a detailed explanation of Ms. Desai's incentive compensation program, please refer to "2018 Incentive Compensation Plan for Jigisha Desai."

(3) Due to the performance period beginning prior to becoming an Executive Officer, Messrs. Larkin and Swanberg were not eligible to participate in the 2015 – 2017 TSR program.

Service Awards

The Compensation Committee believes granting a portion of equity awards as Restricted Stock Units ("RSUs") assists in maintaining competitive levels of compensation, encourages the continued retention of key management, and aligns the interest of Named Executive Officers with that of the shareholders. Service Awards vest in three equal annual installments beginning on the date of grant, subject to continued service.

2018 SERVICE AWARDS

Named Executive Officer	Service Award	RSUs Awarded[1]
James H. Roberts	$400,028	6,513
Jigisha Desai[2]	n/a	n/a
Kyle T. Larkin	$ 89,980	1,465
James D. Richards	$ 89,980	1,465
Dale A. Swanberg	$ 89,980	1,465
Laurel J. Krzeminski[3]	$130,026	2,117

(1) The number of RSUs awarded was calculated by dividing the service award by the closing stock price of $61.42 on March 14, 2018.

(2) Ms. Desai became an Executive Officer effective July 9, 2018 and was not eligible to participate in the LTIP at the time the awards were made. For a detailed explanation of Ms. Desai's incentive compensation program, please refer to "2018 Incentive Compensation Plan for Jigisha Desai."

(3) Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Ms. Krzeminski qualified for retirement eligibility on June 30, 2018 and all of her outstanding equity awards vested on that date.

2018 Incentive Compensation Prorated Plan for Jigisha Desai

Ms. Desai participated in the Granite 2018 Corporate Incentive Compensation Plan prior to her promotion to Senior Vice President and CFO. As a result of Ms. Desai's promotion, she began participating in the Executive Officer Compensation Program effective July 9, 2018.

In her role as Vice President, Corporate Finance and Treasurer, Ms. Desai was eligible to participate in the 2018 Corporate Annual Incentive Plan based on applicable Company Net Income and a 2018 LTIP based on the performance of the Company's Return on Net Operating Assets ("RONA").

2018 Corporate Annual Incentive Plan

In her role as Vice President, Corporate Finance and Treasurer, Ms. Desai was eligible to receive an award based on the Company's Net Income for performance at or above a threshold amount. The calculated bonus was subject to a safety multiplier from -10% to +10% based on the Company's safety performance (for additional information, please refer to "2018 AIP Safety Multiplier Goals"). In addition, the Corporate AIP allows for a discretionary bonus based on individual performance.

2018 Actual Prorated Performance

The Company Net Income performance exceeded threshold, and the Company's safety performance multiplier was 103%. Ms. Desai's actual prorated AIP award for January 1, 2018 – July 8, 2018 is as follows:

2018 INCENTIVE COMPENSATION PLAN – CORPORATE AIP BONUS PAYOUTS

	Corporate Bonus Target	Corporate Bonus Payout (before Safety Multiplier)	Company Safety Multiplier	Actual Corporate Payout	AIP Discretionary Award	Total AIP Award
Jigisha Desai	$60,260	$29,577	103%	$30,464	$46,000	$76,464

2018 Long Term Incentive Plan

In her role as Vice President, Corporate Finance and Treasurer, Ms. Desai was eligible to participate in the 2018 LTIP with an established incentive target opportunity divided into two components – Performance Awards and Service Awards.

The table below reflects the weighting of the two components:

LTIP COMPONENTS WEIGHTING

	Weighting
Performance Award	80%
Service Award	20%
Total	**100%**

Performance Award

Under the 2018 LTIP, a performance award is achieved if RONA performance exceeds a pre-established threshold goal for the year. For 2018, performance did not achieve the threshold goal. In recognition of her contributions in her prior role, Ms. Desai received a discretionary RSU award with a fair market value of $75,000 granted on March 14, 2019. This RSU award will vest in three equal annual installments beginning on the date of grant, subject to continued service.

Service Award

Under the 2018 LTIP, Ms. Desai received an RSU service award that vests in three equal annual installments beginning on the date of grant, subject to continued service.

2018 SERVICE AWARD

	Service Award	RSUs Awarded[1]
Jigisha Desai	$35,562	579

[1] The number of RSUs awarded was calculated by dividing the service award by the closing stock price of $61.42 on March 14, 2018.

Policy Regarding Recovery of Award if Basis Changes Because of Restatement

If the basis upon which a previous compensation award was made is determined to have been in error due to a restatement of a prior year's financial results, it is Granite's policy to either recover the amount overpaid or to offset the overpayment against future incentive compensation earned. This policy applies to AIP and LTIP awards. There were no adjustments to calculations that affected incentive compensation calculated or paid in 2018.

Stock Ownership Guidelines

Our Board of Directors has adopted Stock Ownership Guidelines to align the interests of Granite's Named Executive Officers with the interests of shareholders and to promote Granite's commitment to sound corporate governance. Named Executive Officers are expected to own and hold a minimum number of shares of Granite common stock based on relevant market standards. Stock ownership guidelines are determined as a multiple of the Named Executive Officer's base salary, and are as follows:

- Chief Executive Officer: 3 x annual base salary
- Other Named Executive Officers: 2 x annual base salary

Minimum stock ownership levels are to be achieved within five years following the later of the May 13, 2009 adoption of the Stock Ownership Guidelines and the date an individual becomes a Named Executive Officer. Compliance with the guidelines is reviewed by the Compensation Committee on an annual basis. Shares that count toward the satisfaction of the guidelines include:

- Shares owned outright by the Named Executive Officer or his or her immediate family members residing in the same household, whether held individually or jointly;
- Any vested and deferred RSUs;
- Shares held for the Named Executive Officer's account in the Granite Construction Incorporated Profit Sharing and 401(k) Plan ("401(k) Plan"); and
- Shares held in trust for the benefit of the Named Executive Officer or his or her family.

Until the applicable guideline is achieved, the Named Executive Officer is required to retain an amount equal to 25% of net shares received as a result of the vesting of RSUs through Granite's stock incentive plans.

The following table contains the 2018 percentage of attainment of the Company's stock ownership guidelines for Named Executive Officers:

STOCK OWNERSHIP

Named Executive Officer	2018 Base Salary	Stock Ownership as Multiple of Base	Required Value of Stock Ownership	Date to be Achieved[1]	# Vested Shares Owned[2]	Value of Shares Owned[3]	Percentage of Attainment
James H. Roberts[4]	$900,000	3	$2,700,000	May 2014	173,008	$9,188,455	340%
Jigisha Desai	$425,000	2	$ 850,000	April 2024	29,529	$1,568,285	185%
Kyle T. Larkin	$350,000	2	$ 700,000	April 2023	767	$ 40,735	6%
James D. Richards	$425,000	2	$ 850,000	April 2019	34,168	$1,814,662	213%
Dale A. Swanberg	$425,000	2	$ 850,000	April 2023	4,049	$ 215,042	25%

(1) To be achieved within five years after the later of (a) 2009 or (b) becoming a Named Executive Officer.

(2) As of January 1, 2019.

(3) Based on the 2018 annual average stock price of $53.11.

(4) Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Mr. Roberts qualified as retirement eligible on January 28, 2019 and his outstanding 17,197 RSUs fully vested as of that date.

Anti-Hedging Policy

The Company's Insider Trading Policy, which applies to employees, officers and directors of the Company and their family members and affiliates, provides that such individuals are prohibited from engaging in hedging transactions involving the Company's securities.

Anti-Pledging Policy

In accordance with the Company's Insider Trading Policy, a transaction in which a holder of a security of the Company uses that security as collateral for a loan or other extension of credit or a pledge is prohibited.

Non-Qualified Deferred Compensation

Granite offers its executive officers, Board of Directors, and other key executives, participation in the Granite Construction Key Management Deferred Compensation Plan II (the "NQDC"), which:

- Allows executive officers to defer up to 50% of their base compensation and up to 100% of their incentive compensation (cash and equity);
- Allows non-employee directors to defer receipt of their annual cash retainer and RSU awards;
- Allows participants to choose from a menu of investment options. Granite determines the investment options for the NQDC menu and may add or remove investment options based on a review of the performance of the particular investment;
- Includes a Rabbi Trust, which provides participants a measure of added security that benefit obligations will be satisfied;
- Includes an option under which participants can voluntarily direct Granite to purchase life insurance on their behalf and are eligible for a survivor benefit equal to one year's base salary payable in the event of death. The survivor benefit is payable only while the participant is employed with Granite.

Flexible Bonus Policy

The Compensation Committee has the authority to award discretionary bonuses to employees of the Company. In 2013, our Compensation Committee determined that it would be beneficial to define and limit its authority to award discretionary bonuses and adopted the Flexible Bonus Policy pursuant to which employees of the Company, including our Named Executive Officers, are eligible to receive a discretionary bonus, which may be based on Company performance, individual performance or such other factors as our Compensation Committee may consider appropriate. In determining Company performance, our Compensation Committee may consider the achievement of corporate financial, strategic and operational objectives including, but not limited to, revenue, income, and backlog. In determining individual performance, our Compensation Committee may consider the achievement of personal objectives including, but not limited to, business targets, budgetary targets, succession planning, and safety targets. It is our intention that the discretionary bonuses be fixed and determinable as of year-end; this would require approval prior to year-end. The aggregate amount of any bonus or bonuses payable under the Flexible Bonus Policy to any one participant in any calendar year may not exceed $250,000. Our Compensation Committee believes that the flexible design of this policy is necessary to consider the effects of unanticipated events and circumstances on the Company's business or on a participant's performance. The Compensation Committee awarded a $46,000 cash bonus and an RSU award with a fair market value of $75,000 granted on March 14, 2019 to Ms. Desai in recognition of her contributions in her prior role as Vice President, Corporate Finance and Treasurer in 2018. The Compensation Committee also awarded an RSU award with a fair market value of $200,000 granted on December 17, 2018 to Mr. Swanberg in recognition of his contributions to the Large Projects Group in 2018. These RSU awards will vest in three equal annual installments beginning on the date of grant, subject to continued service.

Other Compensation

The Named Executive Officers are eligible to participate in the 401(k) Plan. Granite provides matching contributions up to 6% of an employee's gross pay at the discretion of the Board of Directors. Under the terms of a policy applicable to Mr. Roberts, Mses. Desai and Krzeminski, each are required to maintain a $5,000,000 personal umbrella liability insurance policy to provide coverage while conducting company business. They are reimbursed for the costs incurred to purchase and maintain the required insurance. Mr. Roberts, Ms. Desai, and prior to her retirement, Ms. Krzeminski, receive a $1,417 per month vehicle allowance which includes reimbursement for the personal umbrella liability insurance. Messrs. Larkin, Richards, and Swanberg receive a $1,000 per month vehicle allowance. Granite also offers a health and wellness program and provides employees rewards for participation. In 2018, Ms. Desai earned a reward with a total grossed-up value of $832 for a total net value of $550.

Impact of Accounting and Tax Treatments of a Particular Form of Compensation

In connection with its determination of the various elements of compensation for our executive officers, the Compensation Committee has taken into account the impact of Section 162(m) of the Internal Revenue Code on the deductibility of compensation for federal income tax purposes. Section 162(m) limits the deductibility of compensation paid to our CEO, our CFO (for years prior to 2018 our CFO was exempt from the limitation) and our next three highest paid individuals to $1 million annually. For years prior to 2018, some of the elements of our executive compensation package, including certain payments under our AIP and LTIP, were intended to qualify as "performance-based" compensation, which was exempt from the limitation on deductibility under Section 162(m). The performance-based compensation exemption under Section 162(m) was repealed effective January 1, 2018, except for certain grandfathered arrangements in effect as of November 2, 2017. However, because of ambiguities and uncertainties as to the application and interpretation of Section 162(m) and the regulations issued thereunder, including the uncertain scope of the transition relief under the legislation repealing Section 162(m)'s exception to the deduction limit for performance-based compensation, we cannot guarantee that future compensation paid to our covered officers will qualify for grandfathered status. Therefore, to the extent that in 2018 or any later year, the aggregate amount of any covered officer's salary, bonus, and amounts realized from RSUs or other equity awards, including under our AIP and LTIP, and certain other compensation amounts that are recognized as taxable income by the officer exceeds $1 million in any year, we may not be entitled to a U.S. federal income tax deduction for the amount over $1 million in that year. The Compensation Committee has the discretion to design and implement elements of executive compensation that may not be fully deductible for income tax purposes.

Change-in-Control Arrangements

All of our Named Executive Officers are participants in the Executive Retention and Severance Plan. The purpose of the plan is to:

- Provide an incentive to the existing management to continue their employment with Granite during the pendency of a potential change-in-control transaction; and
- Attract and retain executives by reducing their concerns regarding future employment following a change-in-control.

The Executive Retention and Severance Plan originally provided that if a participant's employment with Granite is terminated by Granite within three years after a "change-in-control" (as defined below) of Granite other than for cause, or if the participant resigns from such employment within three years after a "change-in-control" of Granite for "good reason," (as defined below) the participant would be entitled to the following benefits:

- A lump sum payment equal to three times the participant's annual base salary rate in effect immediately prior to the participant's termination;
- A lump sum payment equal to three times the average of the aggregate of all annual incentive bonuses earned by the participant for the three fiscal years immediately preceding the fiscal year of the change-in-control;
- A lump sum payment equal to three times the average of the aggregate annual employer contribution, less applicable withholding, made on behalf of the participant for the three fiscal years preceding the fiscal year of the change-in-control to the 401(k) Plan, and any other retirement plan in effect immediately prior to the change-in-control;
- A lump sum payment equal to three times the average annual premium cost for group health, life, and long-term disability benefits, provided for the three fiscal years preceding the fiscal year of termination;
- Accelerated vesting of equity awards in accordance with the provisions contained in such plans; and
- Reasonable professional outplacement services for the participant until the earlier of two years following the date of termination or the date on which the participant obtains employment.

Payments made to the terminated participant do not include tax gross-up payments and are capped. The amount of the payment will not exceed and will be reduced if required in order not to exceed, the "safe harbor" amount allowable under Section 4999 of the Internal Revenue Code, but only if the reduction would increase the net after-tax amount received by the participant.

In August 2010, the Compensation Committee approved changes to the Executive Retention and Severance Plan for future participants that the Compensation Committee believed to be in alignment with emerging best practices. Benefits to subsequent new participants will be dependent upon their level of responsibility within the organization and will include the following severance multiples:

Position	Severance Multiple
Chief Executive Officer	2.99x
Chief Financial Officer	2x
Chief Operating Officer	2x
Senior Vice Presidents and Officers	1x

Mr. Roberts is entitled to a severance multiple of 3x under the Executive Retention and Severance Plan because he was a participant in the plan before the changes were made to the plan in August 2010. Ms. Desai is entitled to a severance multiple of 2x and Messrs. Larkin, Richards, and Swanberg are entitled to a severance multiple of 1x under the Executive Retention and Severance Plan because they became participants in the plan after the changes were made to the plan in August 2010.

Change in control and good reason have the following meanings under the Executive Retention and Severance Plan:

- A "change-in-control" is defined as (i) a merger, consolidation or acquisition of Granite where our shareholders do not retain a majority interest in the surviving or acquiring corporation; (ii) the transfer of substantially all of our assets to a corporation not controlled by Granite or its shareholders; or (iii) the transfer to affiliated persons of more than 30% of our voting stock, which leads to a change of a majority of the members of the Board of Directors; and

- "Good reason" means (i) a material diminution in the participant's authority, duties or responsibilities, causing the participant's position to be of materially lesser rank or responsibility within Granite or an equivalent business unit of its parent; (ii) a decrease in the participant's base salary rate; (iii) relocation of the participant's work place that increases the regular commute distance between the participant's residence and work place by more than 30 miles (one way); or (iv) any material breach of the plan by Granite with respect to the participant during a change-in-control period.

The 2012 Equity Incentive Plan authorizes the Compensation Committee to set the terms of any equity award to provide that there will be no acceleration of the exercisability, vesting or payment of such award upon the occurrence of a change-in-control unless the change-in-control is accompanied by the award recipient's involuntary termination without cause or the award recipient's resignation for good reason. However, under the Executive Retention and Severance Plan, RSU awards vest in full upon the consummation of a change-in-control, provided the award recipient remains an employee prior to the change-in-control. In addition, the Executive Retention and Severance Plan provides that if the surviving, successor or acquiring corporation does not either assume, continue or substitute outstanding option awards and the award recipient remains an employee prior to the change-in-control, then the vesting and exercisability of such option awards will be accelerated in full upon the consummation of the change-in-control.

Compensation Committee Report

The Compensation Committee has reviewed and discussed with management the "Compensation Discussion and Analysis" contained in this proxy statement. Based on such review and discussions, the Committee recommended to the Board of Directors that the "Compensation Discussion and Analysis" be included in this proxy statement and incorporated by reference into Granite's Annual Report on Form 10-K for the fiscal year ended December 31, 2018.

Members of the Compensation Committee:

James W. Bradford, Jr., Chair
Claes G. Bjork
Jeffrey J. Lyash
Celeste B. Mastin
Michael F. McNally
Gaddi H. Vasquez

This Report of the Compensation Committee does not constitute soliciting material and shall not be deemed filed or incorporated by reference into any other filing made by us under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that we specifically incorporate this Report of the Compensation Committee by reference therein.

Executive Compensation Tables

Summary Compensation Table 2018

The following table summarizes, for the fiscal years specified, the compensation for our CEO, our CFO and other Named Executive Officers.

Named Executive Officer and Position (a)	Year (b)	Salary (c)	Bonus[1] (d)	Stock Awards[2] (e)	Non-Equity Incentive Plan Compensation[3] (f)	All Other Compensation[4] (g)	Total (h)
James H. Roberts	2018	$900,000	—	$2,537,935	$628,970	$ 59,718	$4,126,623
President and CEO	2017	$850,000	—	$2,719,073	$709,831	$128,491	$4,407,395
(Principal Executive Officer)	2016	$800,000	—	$1,823,501	$659,271	$132,096	$3,414,868
Jigisha Desai	2018	$387,927	$ 46,000	$ 35,562	$115,721	$ 51,008	$ 636,218
Senior Vice President and CFO	—	—	—	—	—	—	—
(Principal Financial	—	—	—	—	—	—	—
and Accounting Officer)	—	—	—	—	—	—	—
Kyle T. Larkin	2018	$350,000	—	$ 89,980	$335,813	$ 95,395	$ 871,188
Senior Vice President	2017	$260,346	$100,000	$ 25,512	$266,227	$ 40,288	$ 692,373
and California Group Manager	—	—	—	—	—	—	—
James D. Richards	2018	$425,000	—	$ 655,904	$233,163	$ 47,684	$1,361,751
Senior Vice President and	2017	$400,000	—	$ 669,757	$560,639	$ 50,455	$1,680,851
Northwest Group Manager	2016	$400,000	—	$ 422,187	$438,586	$ 50,927	$1,311,700
Dale A. Swanberg	2018	$425,000	$122,515	$ 289,961	$ 77,485	$ 47,145	$ 962,106
Senior Vice President and Large	2017	$400,000	$135,469	$ 190,025	$ 64,531	$ 46,273	$ 836,298
Projects Group Manager	—	—	—	—	—	—	—
Laurel J. Krzeminski	2018	$269,231	—	$ 821,677	$122,705	$ 71,240	$1,284,853
Retired Executive Vice President	2017	$500,000	—	$ 880,304	$283,933	$ 51,409	$1,715,646
and CFO (Principal Financial and Accounting Officer)	2016	$475,000	—	$ 590,960	$263,708	$ 52,247	$1,381,915

(1) The amounts in column (d) reflect a discretionary bonus award approved by the Compensation Committee in recognition of Ms. Desai's contributions to the Company in her prior role as Vice President, Corporate Finance and Treasurer. Additionally, in connection with his appointment to Senior Vice President and Large Projects Group Manager, Mr. Swanberg was guaranteed a minimum award of $200,000, provided that if actual performance under the AIP resulted in a greater award, the award would be based on actual performance. The amount included reflects a payment to Mr. Swanberg as a result of his guaranteed minimum award.

(2) The awards in column (e) reflect the grant date fair value of stock awards granted pursuant to (i) service in the stated year based on the Service Award feature of the LTIP, (ii) the grant date fair value of stock awards granted in the stated year based on performance for the three-year performance period, including the prior year pursuant to the performance based component of the LTIP and (iii) the grant date fair value of stock awards granted in the stated year approved by the Compensation Committee. For a detailed explanation, regarding RSUs granted during 2018 to the Named Executive Officers, please refer to the Grants of Plan-Based Awards table. The grant date fair value is determined in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 718, without regard to potential forfeitures and is determined using the fair value of the Company's common stock based on the market price at the date of grant. For additional information about the assumptions used in these calculations, see Note 17 of the Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018. For a detailed explanation, please refer to the "Compensation Discussion and Analysis — Compensation Elements — Long Term Incentive Compensation"

(3) The amounts in column (f) reflect the cash awards earned for performance in 2018 and paid in March 2019. For a detailed explanation of cash awards for performance in 2018, please refer to "Compensation Discussion and Analysis — Compensation Elements — Annual Incentive Compensation".

(4) Please refer to the Other Compensation Table below for details with respect to all other compensation.

OTHER COMPENSATION TABLE 2018

Named Executive Officer (a)	401(k) Match[1] (b)	Dividends[2] (c)	Vehicle Allowances[3] (d)	Insurance[4] (e)	Other[5] (f)	Total (g)
James H. Roberts	$16,500	$8,908	$17,004	$17,306	—	$59,718
Jigisha Desai	$11,638	$3,549	$17,004	$17,985	$ 832	$51,008
Kyle T. Larkin	$16,500	$1,303	$12,238	$17,083	$48,271	$95,395
James D. Richards	$16,500	$2,004	$12,000	$17,180	—	$47,684
Dale A. Swanberg	$16,500	$3,492	$12,000	$15,153	—	$47,145
Laurel J. Krzeminski	$16,500	$2,167	$ 9,919	$ 9,063	$33,591	$71,240

(1) The amounts in column (b) reflect the company matching contribution, not to exceed 6% on compensation deferred into the 401(k) Plan.

(2) The amounts in column (c) reflect RSU dividend equivalent units.

(3) The amounts in column (d) reflect the vehicle allowances provided to the Named Executive Officers. Mr. Larkin's vehicle allowance total includes $238 of taxable income related to his 2017 vehicle reimbursement program prior to becoming an Executive Officer.

(4) The amounts in column (e) reflect the company expense for medical, dental, vision, life, short and long-term disability insurance, Accidental Death & Dismemberment, Executive Liability Insurance, and Employee Assistance Program.

(5) The amounts in column (f) include; (i) Ms. Desai's health and wellness program reward with a total grossed-up value of $832 for a total net value of $550; (ii) relocation expenses incurred on behalf of Mr. Larkin, and (iii) Ms. Krzeminski received a payment by the Company for unused accrued vacation of $33,591.

Grants of Plan-Based Awards Table 2018

The following table provides additional information about incentive plan awards and other equity awards granted to our Named Executive Officers during the year ended December 31, 2018.

		Estimated Future Payouts under Non-Equity Incentive Plan Awards[1]			Estimated Future Payouts under Equity Incentive Plan Awards[2]			All Other Stock Awards: Number of Shares or Stock Units	Grant Date Fair Value of Stock Awards[3]
Named Executive Officer (a)	Grant Date (b)	Threshold (c)	Target (d)	Maximum (e)	Threshold (f)	Target (g)	Maximum (h)	(i)	(j)
James H. Roberts	—	$517,500	$1,035,000	$2,070,000	—	—	—	—	—
	—	—	—	—	$800,000	$1,600,000	$3,200,000	—	—
	03/14/18	—	—	—	—	—	—	6,513[4]	$ 400,028
	03/14/18	—	—	—	—	—	—	34,808[5]	$2,137,907
Jigisha Desai	—	$159,375	$ 318,750	$ 637,500	—	$ 143,871	—	—	—
	—	—	—	—	—	—	—	—	—
	03/14/18	—	—	—	—	—	—	579[4]	$ 35,562
Kyle T. Larkin	—	$131,250	$ 262,500	$ 525,000	—	—	—	—	—
	—	—	—	—	$180,000	$ 360,000	$ 720,000	—	—
	03/14/18	—	—	—	—	—	—	1,465[4]	$ 89,980
James D. Richards	—	$159,375	$ 318,750	$ 637,500	—	—	—	—	—
	—	—	—	—	$180,000	$ 360,000	$ 720,000	—	—
	03/14/18	—	—	—	—	—	—	1,465[4]	$ 89,980
	03/14/18	—	—	—	—	—	—	9,214[5]	$ 565,924

Named Executive Officer (a)	Grant Date (b)	Estimated Future Payouts under Non-Equity Incentive Plan Awards[1] Threshold (c)	Target (d)	Maximum (e)	Estimated Future Payouts under Equity Incentive Plan Awards[2] Threshold (f)	Target (g)	Maximum (h)	All Other Stock Awards: Number of Shares or Stock Units (i)	Grant Date Fair Value of Stock Awards[3] (j)
Dale A. Swanberg	—	$159,375	$ 318,750	$ 637,500	—	—	—	—	—
	—	—	—	—	$180,000	$ 360,000	$ 720,000	—	—
	03/14/18	—	—	—	—	—	—	1,465[4]	$ 89,980
	12/17/18	—	—	—	—	—	—	4,966[6]	$ 199,981
Laurel J. Krzeminski	—	$187,500	$ 375,000	$ 750,000	—	—	—	—	—
	—	—	—	—	$260,000	$ 520,000	$1,040,000	—	—
	03/14/18	—	—	—	—	—	—	2,117[4]	$ 130,026
	03/14/18	—	—	—	—	—	—	11,261[5]	$ 691,651

(1) Amounts in columns (c) through (e) reflect threshold, target and maximum incentives, as applicable (subject to rounding), under the 2018 AIP. For a detailed discussion of annual incentive compensation and the payout actually received by each Named Executive Officer under the 2018 AIP, please refer to "Compensation Discussion and Analysis — Compensation Elements — 2018 Annual Incentive Compensation", 2018 AIP Performance Measures and Results, and "2018 Incentive Compensation Plan for Jigisha Desai".

(2) Amounts in columns (f) through (h) reflect the threshold, target and maximum award amounts applicable to the performance based (TSR) component of our 2018 LTIP. Each of our Named Executive Officers has the ability to earn from 0% to 200% of the TSR component of the LTIP target opportunity. Any payouts under the LTIP are made in the form of RSUs. Payouts on the TSR component of the LTIP are made after the end of the performance period. For more detailed discussion of the 2018 LTIP, please refer to "Compensation Discussion and Analysis — Compensation Elements — Long Term Incentive Compensation" and "2018 Incentive Compensation Plan for Jigisha Desai."

(3) Amounts in column (j) reflect all RSU awards granted on March 14, 2018. The grant date fair market value was calculated by multiplying the number of RSUs awarded by the closing price of our common stock of $61.42 on the date of the grant.

(4) The RSUs granted on March 14, 2018 reflect the service awards granted under the LTIP. The number of RSUs granted for the service award was calculated by dividing the service award by the closing price of our common stock of $61.42 on the date of the grant. The granted service award RSUs vest in three equal annual installments beginning on March 14, 2019, subject to continued service; unless retirement eligibility per the 2012 Equity Plan is met, in which case vesting is accelerated. The holders of RSUs are entitled to receive dividend equivalent units in lieu of cash dividends declared by the Board on the outstanding common stock of the Company.

(5) The RSUs granted on March 14, 2018 reflect the performance awards granted under the LTIP. The number of RSUs granted for the 2015 – 2017 Total Shareholder Return performance award was calculated by dividing the performance award by the average stock price over the first 30 days of January 2015 of $35.49. The RSUs granted as performance awards are fully vested on the date of grant. The holders of RSUs are entitled to receive dividend equivalent units in lieu of cash dividends declared by the Board on the outstanding common stock of the Company.

(6) The RSUs granted on December 17, 2018 reflect an award to Mr. Swanberg approved by the Compensation Committee in recognition of his contributions to the Large Projects Group. The number of RSUs granted was determined by dividing $199,981 by $40.27, the fair market value of the Company's common stock on the date of grant. The RSUs granted to Mr. Swanberg will ratably vest over three years beginning on December 17, 2019, subject to continued service. The holders of RSUs are entitled to receive dividend equivalent units in lieu of cash dividends declared by the Board on the outstanding common stock of the Company.

Outstanding Equity Awards at Fiscal Year-End Table 2018

The following table summarizes equity awards made to the Named Executive Officers that were outstanding as of December 31, 2018.

Named Executive Officer (a)	Stock Awards: Number of Shares or RSUs That Have Not Vested[1][2] (b)	Market Value of Shares or RSUs That Have Not Vested[3] (c)
James H. Roberts	17,197	$692,695
Jigisha Desai	2,032	$ 81,849
Kyle T. Larkin	2,516	$101,344
James D. Richards	3,869	$155,843
Dale A. Swanberg	10,003	$402,921
Laurel J. Krzeminski[4]	—	—

(1) Upon death or disability, all of the equity awards of a Named Executive Officer would vest immediately.

(2) Vesting dates for each outstanding RSU awards for the Named Executive Officers are set forth in the table below.

(3) The amounts shown in column (c) are based on the December 31, 2018 closing price of the Company's common stock of $40.28.

(4) Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Ms. Krzeminski qualified as retirement eligible on June 30, 2018 and all of her outstanding equity awards vested as of that date.

VESTING DATES FOR EACH OUTSTANDING RSU AWARDS FOR THE NAMED EXECUTIVE OFFICERS

		Number of RSUs Underlying Vesting Awards				
Vesting Date	**Award Type**	**James H. Roberts[1]**	**Jigisha Desai**	**Kyle T. Larkin**	**James D. Richards**	**Dale A. Swanberg**
2019						
01/03/19	RSU	—	—	—	—	616
01/28/19	RSU	17,197	—	—	—	—
03/14/19	RSU	—	1,413	1,362	2,285	2,222
12/17/19	RSU	—	—	—	—	1,655
2020						
01/03/20	RSU	—	—	—	—	615
03/14/20			424	662	1,092	1,092
12/17/20	RSU	—	—	—	—	1,655
2021						
03/14/21	RSU	—	195	492	492	492
12/17/21	RSU	—	—	—	—	1,656

(1) Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Mr. Roberts qualified as retirement eligible on January 28, 2019 and all of his outstanding equity awards vested as of that date.

Stock Vested Table 2018

The following table summarizes the number of shares our Named Executive Officers acquired upon the vesting of stock awards during 2018 and the value realized before payment of any applicable withholding tax and broker commissions.

	Stock Awards	
Named Executive Officer (a)	**Number of Shares Acquired on Vesting (b)**	**Value Realized Upon Vesting[1] (c)**
James H. Roberts	48,768	$2,728,742
Jigisha Desai[2]	1,548	$ 95,147
Kyle T. Larkin	1,110	$ 68,272
James D. Richards	12,596	$ 703,059
Dale A. Swanberg	3,164	$ 182,516
Laurel J. Krzeminski[3]	21,351	$1,193,074

(1) The amounts in column (c) are based on the fair market value of our common stock on the applicable vesting date.

(2) Ms. Desai participates in the NQDC plan and defers 100% of her RSU awards.

(3) Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Ms. Krzeminski qualified as retirement eligible on June 30, 2018 and all of her equity awards vested as of that date. Ms. Krzeminski retired from the Company effective July 6, 2018.

Nonqualified Deferred Compensation Table 2018

The following table summarizes our Named Executive Officers' compensation under our NQDC plan for the year ended December 31, 2018, which is also reflected in the Summary Compensation Table.

Named Executive Officer (a)	Executive Contribution in Last Fiscal Year[1][2] (b)	Registrant Contributions in Last Fiscal Year (c)	Aggregate Earnings in Last Fiscal Year[3] (d)	Aggregate Withdrawals/ Distributions (e)	Aggregate Balance at Last Fiscal Year End (f)
James H. Roberts	$411,678	—	($118,908)	—	$1,357,072
Jigisha Desai	$399,788	—	($239,000)	—	$2,051,048
Kyle T. Larkin[4]	n/a	n/a	n/a	n/a	n/a
James D. Richards[4]	n/a	n/a	n/a	n/a	n/a
Dale A. Swanberg[4]	n/a	n/a	n/a	n/a	n/a
Laurel J. Krzeminski	$ 56,786	—	($ 27,162)	—	$ 388,046

(1) The NQDC plan allows Named Executive Officers to defer base salary and incentive compensation, which includes equity and cash awards. Participants are required to make an election each plan year with respect to the amount to be deferred, future distribution date, and form of distribution. A distribution election is irrevocable on the first day of each plan year. For a detailed explanation of the NQDC, please refer to "Compensation Discussion and Analysis — Non-Qualified Deferred Compensation".

(2) The amounts in column (b) include (i) Mr. Roberts's base salary deferral of $269,712 and deferred annual cash incentive award of $141,966, (ii) Ms. Desai's base salary deferral of $193,964, deferred annual cash incentive award of $110,677, 33%, or $20,920, of her deferred service award granted on March 13, 2015 and vested on March 13, 2018, 33%, or $44,099, of her deferred performance award granted on March 14, 2016 and vested on March 14, 2018, 33%, or $16,092, of her deferred service award granted on March 14, 2016 and vested on March 14, 2018, and 33%, or $14,036, of her deferred service award granted March 14, 2017 and vested on March 14, 2018, and (iii) Ms. Krzeminski's deferred annual cash incentive award of $56,786.

(3) The amounts in column (d) do not include above market or preferential earnings (of which there were none) and, accordingly, such amounts are not reported in the Summary Compensation Table as above market or preferential earnings.

(4) Messrs. Larkin, Richards, and Swanberg elected to not participate in the NQDC Plan in 2018.

Potential Payments Upon Change-in-Control

Except in the case of a change-in-control, Granite is not obligated to pay severance or other enhanced benefits to any of the Named Executive Officers in connection with a termination of their employment. Upon death or disability, all of the equity awards of a Named Executive Officer would vest immediately.

The following table sets forth an example of the potential payments and benefits under Granite's compensation and benefit plans and arrangements to which the Named Executive Officers would be entitled upon termination of employment under certain circumstances within three years following a change-in-control of Granite.

The amounts set forth in the following table are based on the assumption that such termination event occurred on the last business day of fiscal year 2018.

Named Executive Officer (a)	Cash Severance Payment[1] (b)	Insurance Benefits[2] (c)	Other Compensation[3] (d)	Accelerated Equity Awards[4] (e)	Total (f)	Section 280G Safe Harbor Provision[5] (g)	Adjusted Total (h)
James H. Roberts	$5,049,524	$47,883	$40,050	$692,695	$5,830,152	$0	$5,830,152
Jigisha Desai	$1,010,657	$31,816	$17,204	$ 81,849	$1,141,526	$0	$1,141,526
Kyle T. Larkin	$ 591,210	$15,339	$12,818	$101,344	$ 720,711	$0	$ 720,711
James D. Richards	$ 830,158	$15,767	$13,070	$155,843	$1,014,838	$0	$1,014,838
Dale A. Swanberg	$ 506,573	$14,056	$11,418	$402,921	$ 934,968	$0	$ 934,968

(1) The amount in column (b) for Mr. Roberts reflect a lump sum payment equal to (i) three times the annual average of the aggregate annual incentive bonuses earned for the three fiscal years preceding the fiscal year of the change-in-control plus (ii) three times the annual base salary rate in effect immediately prior to the termination. The amount in column (b) for Ms. Desai reflect a lump sum payment equal to (i) two times the annual average of the aggregate annual incentive bonuses earned for the three fiscal years preceding the fiscal year of the change-in-control plus (ii) two times the annual base salary rate in effect immediately prior to the termination. The amounts in column (b) for Messrs. Larkin, Swanberg and Richards reflect a lump sum payment equal to one times the annual average of the aggregate annual incentive bonuses earned for the three fiscal years preceding the fiscal year of the change-in-control plus (ii) one times the current annual base salary rate in effect immediately prior to the termination. For a detailed explanation, please refer to "Change-in-Control Agreements."

(2) The amount in column (c) for Mr. Roberts reflect a lump sum payment equal to three times the average annual cost to Granite of the Named Executive Officer's group insurance benefits, such as life, health and long-term disability, for the three fiscal years ending before the date of termination. The amount in column (c) for Ms. Desai reflect a lump sum payment equal to two times the average annual cost to Granite of the Named Executive Officer's group insurance benefits, such as life, health and long-term disability, for the three fiscal years ending before the date of termination. The amounts in column (c) for Messrs. Larkin, Swanberg and Richards reflect a lump sum payment equal to one times the annual average cost to Granite of their group insurance benefits. For a detailed explanation, please refer to "Change-in-Control Agreements."

(3) The amount in column (d) for Mr. Roberts reflect a lump sum payment equal to three times the annual average cash equivalent of contributions which were made on behalf of the Named Executive Officer for the three fiscal years ending before the date of termination to the 401(k) Plan and any other retirement plan provided by Granite and in effect as of the date of termination. The amount in column (d) for Ms. Desai reflect a lump sum payment equal to two times the annual average cash equivalent of contributions which were made on behalf of the Named Executive Officer for the three fiscal years ending before the date of termination to the 401(k) Plan and any other retirement plan provided by Granite and in effect as of the date of termination. The amounts in column (d) for Messrs. Larkin, Swanberg and Richards reflect a lump sum payment of one times the annual average cash equivalents of such contributions. These amounts do not include additional amounts that may be payable for reasonable professional outplacement services for the Named Executive Officer to which the Named Executive Officer is entitled under the plan until the earlier of (i) two years following the date of termination and (ii) the date on which the Named Executive Officer obtains other employment. For a detailed explanation, please refer to "Change-in-Control Agreements."

(4) In the event of a change-in-control, if the acquiring person does not assume or replace outstanding equity awards, all non-exercisable, unvested or unpaid portions of the outstanding equity awards would become immediately exercisable and fully vested. The amounts in column (e) reflect the outstanding equity awards valued at the December 31, 2018 closing price of our common stock of $40.28. Pursuant to the terms of the Granite Construction Incorporated 2012 Equity Plan, Mr. Roberts qualified as retirement eligible on January 28, 2019 and therefore all his RSUs vested as of that date.

(5) Payments under the Executive Retention and Severance Plan are subject to reduction to the extent necessary not to exceed the "safe harbor" amount under Section 4999 of the Internal Revenue Code, but only if the reduction would increase the net after-tax amount received by the participant.

Director Compensation

Stock Ownership

All non-employee directors are required to own and maintain three times their Annual Board Cash Retainer from Granite in Granite common stock within five years after joining the Board. As of December 31, 2018, all non-employee directors with 5 or more years of service to the Board had achieved the stock ownership levels. For additional information, please refer to "Stock Ownership Guidelines".

Cash and Equity Compensation Policy

Granite's non-employee directors receive annual cash retainers and equity grants as set forth in the table below. Key highlights of the director compensation program are as follows:

1. Cash retainers are paid in quarterly installments. No additional fees are paid for attendance at meetings whether in person or telephonically;

2. The Chairman of the Board's retainer is inclusive of all Committee retainers; and

3. Directors, other than the Chairman of the Board, receive an annual grant of RSUs valued at $110,000 on the date of grant. The Chairman of the Board receives an annual grant of RSUs equal to $175,000 in value on the date of grant. All RSUs vest in full on the first anniversary of the date of grant (typically May 20th of each year).

Annual Cash Board Retainers	
Member	$ 90,000
Chairman of the Board	$175,000

Annual Cash Committee Service Retainers	
Audit/Compliance Non-Chair Member	$ 10,000
Audit/Compliance Chair	$ 20,000
Nominating and Corporate Governance Non-Chair Member	$ 7,500
Nominating and Corporate Governance Chair	$ 15,000
Compensation Non-Chair Member	$ 8,500
Compensation Chair	$ 17,000
Executive Member	$ 5,000

Annual Equity Grants		
Member	$110,000	RSUs
Chairman of the Board	$175,000	RSUs

Director Compensation Table 2018

The following table presents the compensation provided by Granite to our directors for the year ended December 31, 2018.

Name (a)	Fees Earned or Paid in Cash[1] (b)	Stock Award[2] (c)	All Other Compensation[3] (d)	Total (e)
Claes G. Bjork[4]	$150,385	$175,000	$12,417	$337,802
James W. Bradford, Jr.[4]	$122,000	$110,000	$ 8,212	$240,212
David C. Darnell	$105,000	$110,000	$ 986	$215,986
Patricia D. Galloway	$105,000	$110,000	$ 986	$215,986
David H. Kelsey[4]	$117,500	$110,000	$12,611	$240,111
Alan P. Krusi	$ 54,339	$110,000	$ 745	$165,084
Jeffrey J. Lyash	$ 61,631	$110,000	$ 728	$172,359
Celeste B. Mastin	$106,000	$110,000	$ 986	$216,986
Michael F. McNally[4]	$116,322	$110,000	$ 1,767	$228,089
William H. Powell[5]	$ 76,353	—	$ 1,818	$ 78,171
Gaddi H. Vasquez[4]	$106,000	$110,000	$ 7,233	$223,233

(1) The amounts in column (b) reflect the annual cash retainer paid to non-employee directors for the year ended December 31, 2018. In 2018 each non-employee director was paid an annual retainer as a member of the Board and additional retainers for service as a member of a Board committee. The cash retainer was paid quarterly in equal payments; no meeting fees were paid. Mr. Bjork's annual retainer and retainers for services as a member of a Board committee were prorated to reflect his appointment as Chairman of the Board effective June 7, 2018. Mr. Lyash's annual retainer and retainers for services as a member of a Board committee were prorated to reflect his appointment to the Board of Directors effective June 6, 2018. Mr. Krusi's annual retainer and retainers for services as a member of a Board committee were prorated to reflect his appointment to the Board of Directors effective June 20, 2018. Mr. Powell's retainer for service as a member of the Board of Directors was prorated to reflect his retirement effective June 7, 2018.

(2) The amounts in column (c) reflect the grant date fair market value of the 2018 RSU awards. The grant date fair value is determined in accordance with Financial Accounting Standards Code Topic 718, without regard to potential forfeitures and is determined using the fair value of the Company's common stock based on market price at the date of grant. For additional information about the assumptions used in these calculations, see Note 17 of the Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018. These awards have a one year vesting schedule. On June 8, 2018, Dr. Galloway, Ms. Mastin and Messrs. Bradford, Darnell, Kelsey, Lyash, McNally and Vasquez received an annual grant of 1,861 RSUs with a grant date fair market value of $59.11 per share. As Chairman of the Board, Mr. Bjork received a grant of 2,961 RSUs with a grant date fair market value of $59.11 per share. On June 29, 2018, Mr. Krusi received an annual grant of 1,905 RSUs with a June 21, 2018 (the day following his appointment to the Board) grant date fair market value of $57.73 per share. As of December 31, 2018: Mr. Bjork had an outstanding balance of 21,736 deferred RSUs and 2,976 RSUs; Mr. Bradford had an outstanding balance of 14,473 deferred RSUs and 1,870 RSUs; Dr. Galloway, Ms. Mastin, and Messrs. Darnell and Lyash, had an outstanding balance of 1,870 RSUs, respectively; Mr. Kelsey had an outstanding balance of 22,692 deferred RSUs and 1,870 RSUs; Mr. Krusi had an outstanding balance of 1,914 RSUs; Mr. McNally had an outstanding balance of 2,005 deferred RSUs and 1,870 RSUs; Mr. Powell had an outstanding balance of 3,521 deferred RSUs; and Mr. Vasquez had an outstanding balance of 12,559 deferred RSUs, and 1,870 RSUs.

(3) The amounts in column (d) include the cash value of dividend equivalents from deferred units in prior years and RSUs.

(4) Messrs. Bjork and McNally deferred 100% of both their annual cash retainers and RSU awards into the NQDC Plan. Dr. Galloway and Messrs. Bradford and Vasquez deferred 100% of their RSU awards into the NQDC Plan. Dr. Galloway, Ms. Mastin and Messrs. Bradford, Darnell, Kelsey, Powell and Vasquez made no deferrals of their annual cash retainers into the NQDC Plan. Messrs. Krusi and Lyash were not eligible to participate in the NQDC Plan in 2018. For a detailed explanation of the NQDC Plan, please refer to "Non-Qualified Deferred Compensation."

(5) Mr. Powell retired from the Board effective June 7, 2018. Board fees were prorated according to his retirement date and all outstanding RSUs vested on May 20, 2018.

CEO Pay Ratio Disclosure

The Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”) requires we disclose the ratio of our CEO’s total annual compensation to the median of the annual total compensation of all of our employees and those of our consolidated subsidiaries other than our CEO.

To determine our median employee, we made a direct determination from our total employee population (excluding the CEO). Using a consistently applied compensation measure, which included base pay, overtime, and short-term incentives, we ranked our employees from the highest paid to the lowest paid. Our employee population was evaluated as of October 30, 2017 to determine our median employee. There have been no changes in our employee population or compensation arrangements since our evaluation that we believe would significantly impact our pay ratio disclosure, except for the acquisitions of LiquiForce and Layne Christensen Company (“Layne”), which are discussed further below.

Based on the above determination, our median employee’s total annual compensation (calculated in accordance with Item 402(c)(2)(x) of Regulation S-K) was $114,909. Our CEO’s total annual compensation (calculated in accordance with Item 402(c)(2)(x) of Regulation S-K and as reported in the Summary Compensation Table) was $4,126,623. The resulting ratio was 36:1. This ratio is a reasonable estimate calculated in a manner consistent with Item 402(u) of Regulation S-K using the data and assumptions summarized above.

On April 3, 2018, the Company completed an acquisition of LiquiForce, a privately-owned company serving public and private sector water and wastewater customers, which had approximately 100 employees. On June 14, 2018, the Company completed the acquisition of Layne, a leading global water management, infrastructure services and drilling company, which had approximately 2,100 employees. As permitted by SEC rules, we did not include LiquiForce and Layne employees in our determination of the median employee.

The Dodd-Frank Act rules for identifying the median employee and calculating the pay ratio based on that employee’s annual total compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their compensation practices. As such, the pay ratio reported by other companies may not be comparable to the pay ratio reported above, as other companies may have different employment and compensation practices and may utilize different methodologies, exclusions, estimates, and assumptions in calculating their own pay ratios.

Our pay ratio is not an element that the Compensation Committee considers in setting the compensation of our CEO, nor is our CEO’s compensation a material element that management considers in making compensation decisions for non-officer employees. However, the compensation of our employees is periodically reviewed to ensure alignment with our compensation philosophy of paying at the market median.

STOCK OWNERSHIP OF BENEFICIAL OWNERS AND CERTAIN MANAGEMENT

The following table provides information regarding the ownership of our common stock as of February 28, 2019 by each person known to us to beneficially own 5% or more of our common stock, each of our directors and nominees, each of our Named Executive Officers who were employed by Granite on February 28, 2019, and all of our current directors and executive officers as a group.

Name	Amount and Nature Beneficial Ownership[1]	Percentage (%) of Common Stock Outstanding[2]
BlackRock, Inc[3]	5,084,256	10.89 %
55 East 52nd Street New York, NY 10055		
The Vanguard Group[4]	4,313,639	9.24 %
100 Vanguard Blvd. Malvern, PA 19355		
Dimensional Fund Advisors LP[5]	2,664,608	5.71 %
Building One 6300 Bee Cave Road Austin, TX 78746		
Wellington Management Group LLP[6]	2,654,947	5.69 %
c/o Wellington Management Company LLP 280 Congress Street Boston, MA 02210		
Claes G. Bjork	34,692	*
James W. Bradford, Jr.	15,571	*
David C. Darnell	2,606	*
Patricia D. Galloway	2,806	*
David H. Kelsey	997	*
Jeffrey J. Lyash	0	*
Celeste B. Mastin	2,606	*
Michael F. McNally	3,196	*
Alan Krusi	0	*
Gaddi H. Vasquez[7]	1,950	*
James H. Roberts[8]	175,685	*
Jigisha Desai[9]	26,164	
Kyle Larkin[10]	2,140	*
James D. Richards[11]	42,685	*
Dale A. Swanberg[12]	6,310	*
All Executive Officers and Directors as a Group (15 Persons)[7-12]	317,408	*

* Less than 1%

(1) Except as indicated in the footnotes to this table, the persons named in the table have sole voting and dispositive power with respect to all shares of common stock shown as beneficially owned by them, subject to community property laws where applicable. Such shares do not include the individuals' NQDC shares, if any.

(2) Calculated on the basis of 46,685,414 shares of common stock issued and outstanding as of February 28, 2019. For all executive officers and directors as a group the percentage is calculated on the basis of the number of shares of common stock issued and outstanding as of February 28, 2019 and includes 52,718 shares of common stock issuable upon the vesting of restricted stock units within 60 days after February 28, 2019 that are deemed outstanding in accordance with the rules of the Securities and Exchange Commission.

(3) Based upon a Schedule 13G/A filed by BlackRock, Inc. ("BlackRock") with the SEC (i) the number of shares beneficially owned is 5,084,256 as of December 31, 2018, and (ii) BlackRock has sole voting power with respect to 4,984,357 shares and sole dispositive power with respect to all 5,084,256 shares.

(4) Based on a Schedule 13G/A filed by The Vanguard Group ("Vanguard") with the SEC (i) the number of shares beneficially owned is 4,313,639 as of December 31, 2018, and (ii) Vanguard has sole voting power with respect to 81,506 shares, shared voting power with respect to 6,380 shares, sole dispositive power with respect to 4,230,112 shares and shared dispositive power with respect to 83,527 shares.

(5) Based upon a Schedule 13G/A filed by Dimensional Fund Advisors LP ("Dimensional") with the SEC (i) the number of shares beneficially owned is 2,664,608 as of December 31, 2018, and (ii) Dimensional has sole voting power with respect to 2,603,767 shares and sole dispositive power with respect to all 2,664,608 shares.

(6) Based upon a Schedule 13G filed by Wellington Management Group LLP, Wellington Group Holdings LLP and Wellington Investment Advisors Holdings LLP (collectively "Wellington") with the SEC (i) the number of shares beneficially owned is 2,654,947 as of December 31, 2018, and (ii) each of the entities has shared voting power with respect to 2,215,365 shares and shared dispositive power with respect to all 2,654,947 shares.

(7) The shares of common stock are held in trust for the benefit of Mr. Vasquez and his wife as to which Mr. Vasquez and his wife share voting and investment power.

(8) Includes 129,203 shares of common stock owned by the ESOP but allocated to Mr. Roberts' account as of February 28, 2019 and 2,229 shares of common stock issuable upon the vesting of restricted stock units within 60 days after February 28, 2019. As a result of having attained age 55 and continuing to be employed by Granite, Mr. Roberts is currently eligible to make withdrawals of his ESOP shares.

(9) Includes 4,330 shares of Common Stock owned by the ESOP but allocated to Ms. Desai's account as of February 28, 2019, 1,000 shares owned by her spouse and 15,544 shares in trust for the benefit of Ms. Desai's family as to which shares Ms. Desai and her spouse share voting and investment power and 1,418 shares of Common Stock issuable upon the vesting of restricted stock units within 60 days after February 28, 2019. Subject to continued employment by Granite, Ms. Desai will become eligible to make withdrawals of his ESOP shares when she attains age 55.

(10) Includes 1,365 shares of Common Stock issuable upon the vesting of restricted stock units within 60 days after February 28, 2019.

(11) Includes 6,239 shares of Common Stock owned by the ESOP but allocated to Mr. Richards' account as of February 28, 2019 and 8,486 shares of common stock issuable upon the vesting of restricted stock units within 60 days after February 28, 2019. Subject to continued employment by Granite, Mr. Richards will become eligible to make withdrawals of his ESOP shares when he attains age 55.

(12) Includes 2,229 shares of Common Stock issuable upon vesting of restricted stock units within 60 days after February 28, 2019.

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our executive officers, directors and any persons who beneficially own more than 10% of our common stock to report ownership of, and transactions in, Granite stock with the SEC. Our executive officers, directors and any persons who beneficially own more than 10% of our common stock are required by SEC regulation to furnish to Granite copies of all Section 16(a) reports they file.

Based solely on our review of these reports and written representations from all of our executive officers and directors that no other reports were required with respect to their beneficial ownership of our common stock during fiscal year 2018, we believe that all reporting requirements applicable to our executive officers, directors and any persons who beneficially own more than 10% of our common stock pursuant to Section 16(a) of the Exchange Act were satisfied.

EQUITY COMPENSATION PLAN INFORMATION

The following table contains information as of December 31, 2018 regarding stock authorized for issuance under the 1999 and 2012 Equity Incentive Plan:

Plan Category	Number of Securities to be issued upon exercise of outstanding options, warrants and rights (a)[1]	Weighted average exercise price of outstanding options, warrants and rights (b)[2]	Number of Securities remaining available for future issuance under equity compensation plans (excluding stock reflected in column (a)) (c)
Equity Compensation Plans Approved by Shareholders	441,750	$0.00	952,454
Equity Compensation Plans Not Approved by Shareholders	—	—	—
Total	441,750	$0.00	952,454

(1) Reflects Restricted Stock Units covering 441,750 shares of common stock.

(2) Reflects the exercise price per share of common stock purchasable upon the exercise of stock options only. As of December 31, 2018, no stock options were outstanding.

TRANSACTIONS WITH RELATED PERSONS

Granite's legal staff is primarily responsible for the development and implementation of processes and controls to obtain information from the directors and executive officers with respect to related person transactions (transactions involving an executive officer, director, director nominee or greater than 5% beneficial owner of Granite common stock or an immediate family member of, or anyone (other than a tenant or employee) residing in the home of, an executive officer, director, director nominee or greater than 5% beneficial owner of Granite common stock). They also determine, based on the facts and circumstances, whether a related person has a direct or indirect interest in the transaction. In addition, the Board of Directors has adopted a written policy and written procedures for review and approval or ratification of related party transactions involving Granite. The policy requires the Audit/Compliance Committee's review and approval or ratification of any related party transaction (as defined in the policy) in which Granite is a participant. This includes, among other things, any related party transaction that would be required to be disclosed under the rules and regulations of the SEC.

Under the policy, the Audit/Compliance Committee reviews the material facts of all related party transactions that require the Audit/Compliance Committee's approval and either approves or disapproves of the entry into the related party transaction. If advance Audit/Compliance Committee approval of a related party transaction is not feasible, the transaction may only be entered into subject to the Audit/Compliance Committee's later approval. Thereafter, the Audit/Compliance Committee will consider the transaction, and, if the Audit/Compliance Committee determines it to be appropriate, ratify it at the next regularly scheduled meeting of the Audit/Compliance Committee. In determining whether to approve or ratify a related party transaction, the Audit/Compliance Committee takes into account, among other factors it deems appropriate, whether the related party transaction is on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related person's interest in the transaction.

The Audit/Compliance Committee has determined that the following transactions shall be deemed to be pre-approved: (i) employment of an executive officer if (a) the executive officer's compensation is required to be reported in Granite's proxy statement or (b) the executive officer is not an immediate family member of another executive officer or director of Granite, the executive officer's compensation would be reported in Granite's proxy statement if the executive officer were a "named executive officer" and the Compensation Committee approved (or recommended that the Board approve) such compensation; (ii) compensation to a director required to be disclosed in Granite's proxy statement; (iii) any transaction with another company at which the related person's only relationship is as an employee (other than an executive officer), director or beneficial owner of less than 10% of that company's shares, if the aggregate amount involved does not exceed the greater of $1,000,000 or 2% of that company's annual revenues; (iv) any charitable contribution, grant or endowment by Granite to a charitable organization, foundation or university at which a related person's only relationship is as an employee (other than an executive officer) or a director, if the aggregate amount involved does not exceed the lesser of $100,000 or 2% of the charitable organization's total

annual receipts; (v) any transaction where the related person's interest arises solely from the ownership of Granite common stock and all holders of Granite common stock receive the same benefit on a pro rata basis; and (vi) any transaction with a related person involving services as a bank depositary of funds, transfer agent, registrar or trustee under a trust indenture or similar services.

In addition, the Board has delegated to the Chair of the Audit/Compliance Committee the authority to pre-approve or ratify (as applicable) any related person transaction in which the aggregate amount involved is expected to be less than $100,000.

No director who has an interest in the transaction under consideration may participate in the approval process. All related party transactions approved by the Audit/Compliance Committee must be disclosed to the full Board of Directors.

REPORT OF THE AUDIT/COMPLIANCE COMMITTEE

The Audit/Compliance Committee is appointed by the Board of Directors and reports to the Board at each meeting. Its purpose is to (a) assist the Board in its oversight of (1) Granite's accounting and financial reporting principles and policies, and internal and disclosure controls and procedures, including the internal audit function, (2) Granite's system of internal control over financial reporting as required by Section 404 of the Sarbanes-Oxley Act of 2002, (3) the integrity of Granite's financial statements, (4) the qualifications and independence of Granite's independent registered public accounting firm, (5) Granite's compliance with legal and regulatory requirements, and (6) Granite's Corporate Compliance Program and Code of Conduct; and (b) serve as the Qualified Legal Compliance Committee of the Board of Directors as required. The Audit/Compliance Committee is solely responsible for selecting, evaluating, setting the compensation of, and, where deemed appropriate, replacing the independent registered public accounting firm.

Management has the primary responsibility for the financial statements and the reporting process, including the systems of internal controls and the effectiveness of the internal control over financial reporting. In fulfilling its oversight responsibilities, the Audit/Compliance Committee reviewed and discussed with management the audited financial statements in the Annual Report on Form 10-K for fiscal year ended December 31, 2018, including a discussion of the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments, and the clarity of disclosures in the financial statements.

The Audit/Compliance Committee also oversees our Ethics and Compliance Program, participates in the annual evaluation of our Corporate Compliance Officer and the Director of Internal Audit, and provides a detailed Annual Report to the Board on the progress of the program and plans for future activities.

The Director of Internal Audit reports directly to the Chairman of the Audit/Compliance Committee and has direct access and meets regularly with the Audit/Compliance Committee to discuss the results of internal audits and the quality of internal controls. The Corporate Compliance Officer also reports directly to the Audit/Compliance Committee.

The Audit/Compliance Committee reviewed and discussed with the independent registered public accounting firm, who is responsible for expressing an opinion on the conformity of Granite's audited financial statements with generally accepted accounting principles, its judgments as to the quality of Granite's accounting principles, the clarity of disclosures in the financial statements and such other matters as are required to be discussed with the Committee under generally accepted auditing standards, including Public Company Accounting Oversight Board (United States) Auditing Standard No. 16, "Communications with Audit Committees," as currently in effect. In addition, the Audit/Compliance Committee has discussed with the independent registered public accounting firm the auditor's independence from Granite and its management, and the matters in the written disclosures and the letter received by the Audit/Compliance Committee from the independent registered public accounting firm required by the Public Company Accounting Oversight Board.

The Audit/Compliance Committee discussed with the independent registered public accounting firm the overall scope and plans for their audit. The Audit/Compliance Committee meets with the independent registered public accounting firm, with and without management present, to discuss the results of their examination, their evaluation of Granite's internal controls, including internal control over financial reporting, and the overall quality of Granite's financial reporting. In addition, the Audit/Compliance Committee reviewed with management and the independent registered public accounting firm drafts of Granite's quarterly and annual financial statements and press releases prior to the public release of the quarterly earnings. In addition to the quarterly review, the Audit/Compliance Committee met with the Chief Executive Officer and the Chief Financial Officer to discuss the process adopted by management to enable them to sign the certifications that are required to accompany reports filed with the SEC.

Based on the review and discussions referred to above, the Audit/Compliance Committee recommended to Granite's Board of Directors that Granite's audited financial statements be included in Granite's Annual Report on Form 10-K for the fiscal year ended December 31, 2018.

Members of the Audit/Compliance Committee:

David H. Kelsey, Chair
James W. Bradford, Jr.
David C. Darnell
Patricia D. Galloway
Jeffrey J. Lyash

This Report of the Audit/Compliance Committee does not constitute soliciting material and shall not be deemed filed or incorporated by reference into any other filing made by us under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that we specifically incorporate this Report of the Audit/Compliance Committee by reference therein.

INDEPENDENT REGISTERED PUBLIC ACCOUNTANTS

Principal Accountant Fees and Services

Aggregate fees for professional services rendered for us by PricewaterhouseCoopers LLP for the years ended December 31, 2018 and December 31, 2017 were:

	2018	2017
Audit Fees[(1)]	$4,713,700	$3,287,125
Audit-Related Fees[(2)]	$ 150,666	$ 53,000
All Other Fees[(3)]	$ 8,042	$ 7,100
Total	$4,872,408	$3,347,225

(1) Audit Fees paid in 2017 and 2018 were for professional services rendered for the audits of Granite's consolidated financial statements, including audits of internal control over financial reporting, audits of subsidiary financial statements, quarterly financial reviews and audit related expenses.

(2) Audit-Related Fees paid in 2018 included professional services rendered in connection with pre-qualifications and S-4 filing related to the acquisition of Layne Christensen Company. Audit-Related Fees paid in 2017 were for pre-qualifications.

(3) All Other Fees include benchmark study, inform, and disclosure checklist paid in 2017 and 2018.

Audit/Compliance Committee Pre-Approval Policies and Procedures

The Audit/Compliance Committee's policy is to pre-approve all audit and permissible non-audit services provided by the independent registered public accounting firm. During 2018, no services were provided to us by PricewaterhouseCoopers LLP other than in accordance with the pre-approval policies and procedures.

Based on its review of the non-audit services provided by PricewaterhouseCoopers LLP, the Audit/Compliance Committee believes that PricewaterhouseCoopers LLP's provision of such non-audit services is compatible with maintaining their independence.

PROPOSAL 2: ADVISORY VOTE ON EXECUTIVE COMPENSATION

The Board of Directors is asking shareholders to approve an annual advisory resolution on executive compensation. The Board of Directors is providing such vote pursuant to Section 14A of the Exchange Act. The advisory vote is a non-binding vote on the compensation of our Named Executive Officers. The vote is not intended to address any specific item of compensation, but rather the overall compensation of our Named Executive Officers and the philosophy, policies and practices described in this proxy statement. We received a favorable vote on a similar resolution at our 2018 Annual Meeting of Shareholders, with approximately 98% of our shareholders approving the resolution. The text of the resolution to be voted on at the annual meeting is as follows:

> **Resolved,** that the shareholders of Granite Construction Incorporated approve, on an advisory basis, the compensation of the Company's Named Executive Officers as disclosed in the proxy statement for the Company's 2019 Annual Meeting of Shareholders pursuant to the compensation disclosure rules of the Securities Exchange Act of 1934, as amended (which disclosure includes the Compensation Discussion and Analysis section, the Summary Compensation Table for 2018 and the related compensation tables and narrative disclosure within the Executive and Director Compensation and Other Matters section of the proxy statement).

The Company urges you to read the disclosure under "Compensation Discussion and Analysis," which discusses how our compensation policies and procedures implement our pay-for-performance compensation philosophy. You should also read the Summary Compensation Table and other related compensation tables and narrative disclosure which provide additional details about the compensation of our Named Executive Officers. We have designed our executive compensation structure to attract, motivate and retain executives with the skills required to formulate and implement the Company's strategic objectives and create shareholder value. We believe that our executive compensation program is reasonable, competitive and strongly focused on pay for performance principles, and provides an appropriate balance between risk and incentives. In particular, key elements of our executive compensation program are:

- Market competitive base salaries targeted at the 50th percentile of comparable positions in the market;
- Actual pay levels reflecting market data, individual experience, tenure and ability to impact business and financial results;
- Short-term and long-term goals aligned with the interests of shareholders, with cash and stock-based incentives earned upon the attainment of pre-established financial and non-financial goals;
- A comprehensive benefits program which is also available to all salaried employees and includes: medical, dental, vision, life, accidental death and dismemberment insurance, short-term and long-term disability insurance, paid vacation and holiday pay; and
- Eligibility, along with other management employees, to participate in our Non-Qualified Deferred Compensation Program.

The vote regarding the compensation of the Named Executive Officers described above, referred to as a "say-on-pay advisory vote," is advisory, and is therefore not binding on the Company, the Compensation Committee or the Board of Directors. Although non-binding, the Compensation Committee and the Board of Directors value the opinions that shareholders express in their votes and will review the voting results and take them into consideration when making future decisions regarding our executive compensation programs as they deem appropriate.

BOARD OF DIRECTORS RECOMMENDATION

The Board of Directors unanimously recommends a vote "FOR" the approval of the compensation of the Named Executive Officers as disclosed in this proxy statement and as described pursuant to the compensation disclosure rules of the Exchange Act.

PROPOSAL 3: RATIFICATION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit/Compliance Committee of the Board of Directors has appointed PricewaterhouseCoopers LLP to serve as Granite's independent registered public accounting firm to perform the audit of our financial statements for the fiscal year ending December 31, 2019. PricewaterhouseCoopers LLP and its predecessor, Coopers & Lybrand, have been our auditors since 1982.

A representative of PricewaterhouseCoopers LLP will be present at the annual meeting. He or she will be given the opportunity to make a statement if he or she desires and will be available to respond to appropriate shareholder questions.

Although ratification is not required by Granite's bylaws or otherwise, the Board is submitting the selection of PricewaterhouseCoopers LLP to our shareholders for ratification as a matter of good corporate practice. If shareholders do not ratify the appointment of PricewaterhouseCoopers LLP as Granite's independent registered public accounting firm, the Audit/Compliance Committee will reconsider the appointment. Even if the selection is ratified, the Audit/Compliance Committee, in its discretion, may select a different independent registered public accounting firm at any time during the year if it determines that such a change would be in the best interest of Granite and our shareholders.

BOARD OF DIRECTORS RECOMMENDATION

The Board of Directors unanimously recommends a vote "FOR" the ratification of the appointment by the Audit/Compliance Committee of PricewaterhouseCoopers LLP as Granite's independent registered public accounting firm for the fiscal year ending December 31, 2019.

SHAREHOLDER PROPOSALS TO BE PRESENTED AT THE 2020 ANNUAL MEETING OF SHAREHOLDERS

Under Granite's bylaws, director nominations and proposals for other business to be presented at the annual shareholder meeting by a shareholder may be made only if that shareholder is entitled to vote at the meeting, timely gave the required notice, and was a shareholder of record at the time when he or she gave the required notice. The required notice must be in writing, must contain the information specified in our bylaws, and must be received at our principal executive offices, addressed to the Corporate Secretary, not less than 120 days prior to the first anniversary of the date the proxy statement for the preceding year's annual meeting of shareholders was released to shareholders. If no meeting was held in the previous year, the date of the annual meeting is changed by more than 30 calendar days from the previous year, or in the event of a special meeting, to be on time, the notice must be delivered by the close of business on the tenth day following the day on which notice of the date of the meeting was mailed or public announcement of the date of the meeting was made.

Separate from the requirements in our bylaws, you may submit proposals on matters appropriate for shareholder action at our annual meeting of shareholders in accordance with Rule 14a-8 promulgated under the Exchange Act ("Rule 14a-8"). Rule 14a-8 entitles a shareholder to require us to include certain shareholder proposals in Granite's proxy materials if the shareholder meets certain eligibility and timing requirements set forth in Rule 14a-8.

Pursuant to Granite's bylaws and Rule 14a-8, to be considered for inclusion in Granite's proxy statement or otherwise presented at our 2020 annual meeting of shareholders, a shareholder nomination or proposal must be received by our Secretary at Granite's principal executive offices on or before Wednesday, December 25, 2019.

HOUSEHOLDING

As permitted by the Exchange Act, only one copy of the Notice of Internet Availability of Proxy Materials or proxy materials is being delivered to shareholders residing at the same address, unless any shareholder has notified us of its desire to receive multiple copies of the Notice of Internet Availability of Proxy Materials or proxy materials, as applicable. This is known as householding. We will promptly deliver, upon oral or written request, a separate copy of the Notice of Internet Availability of Proxy Materials or the proxy materials, as applicable, to any shareholder residing at a shared address to which only one copy was mailed. Requests for additional copies of the Notice of Internet Availability of Proxy Materials or proxy materials, or requests to receive multiple or single copies of the Notice of Internet Availability of Proxy Materials or proxy materials at a shared address in the future, should be directed to: Granite Construction Incorporated, 585 West Beach Street, Watsonville, California 95076, Attention: Investor Relations Department, Telephone: 831.724.1011.

FORM 10-K

Copies of our Annual Report on Form 10-K for the fiscal year ended December 31, 2018 (excluding exhibits) filed with the SEC are available, without charge, upon written request to Granite Construction Incorporated, 585 West Beach Street, Watsonville, California 95076, Attention: Investor Relations Department. Exhibits to the Annual Report on Form 10-K will be furnished upon payment of a fee of $0.25 per page to cover our expenses in furnishing the exhibits.

OTHER MATTERS

As of the date of this proxy statement, the only matters that management intends to present or knows that others will present at the meeting have been included in this proxy statement. If any other matters are properly presented at the meeting, or any adjournment, your shares will be voted in the discretion of the persons named on your proxy card.

Dated: April 23, 2019

M. Craig Hall
Senior Vice President, General Counsel, Corporate Compliance Officer and Secretary

GRANITE IS AMERICA'S INFRASTRUCTURE COMPANY

2018 FORM 10-K

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

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission file number 1-12911

GRANITE™

Granite Construction Incorporated
(Exact name of registrant as specified in its charter)

Delaware	**77-0239383**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification Number)*
585 West Beach Street	
Watsonville, California	**95076**
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code: **(831) 724-1011**

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

Title of each class	Name of each exchange on which registered
Common Stock, $0.01 par value	New York Stock Exchange

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act. Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant was $2.5 billion as of June 30, 2018, based upon the price at which the registrant's Common Stock was last sold as reported on the New York Stock Exchange on such date.

At February 19, 2019, 46,685,414 shares of Common Stock, par value $0.01, of the registrant were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information called for by Part III is incorporated by reference to the definitive Proxy Statement for the Annual Meeting of Shareholders of Granite Construction Incorporated to be held on June 6, 2019, which will be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2018.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

From time to time, Granite makes certain comments and disclosures in reports and statements, including in this Annual Report on Form 10-K, or statements made by its officers or directors, that are not based on historical facts, including statements regarding future events, occurrences, circumstances, activities, performance, outcomes and results that may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are identified by words such as "future," "outlook," "assumes," "believes," "expects," "estimates," "anticipates," "intends," "plans," "appears," "may," "will," "should," "could," "would," "continue," and the negatives thereof or other comparable terminology or by the context in which they are made. In addition, other written or oral statements which constitute forward-looking statements have been made and may in the future be made by or on behalf of Granite. These forward-looking statements are estimates reflecting the best judgment of senior management and reflect our current expectations regarding future events, occurrences, circumstances, activities, performance, outcomes and results. These expectations may or may not be realized. Some of these expectations may be based on beliefs, assumptions or estimates that may prove to be incorrect. In addition, our business and operations involve numerous risks and uncertainties, many of which are beyond our control, which could result in our forward-looking statements not being realized or otherwise materially affect our business, financial condition, results of operations, cash flows and liquidity. Such risks and uncertainties include, but are not limited to, those more specifically described in this report under "Item 1A. Risk Factors." Due to the inherent risks and uncertainties associated with our forward-looking statements, the reader is cautioned not to place undue reliance on them. The reader is also cautioned that the forward-looking statements contained herein speak only as of the date of this Annual Report on Form 10-K, and, except as required by law, we undertake no obligation to revise or update any forward-looking statements for any reason.

PART I

Item 1. Business

Introduction

Granite Construction Company was originally incorporated in 1922. In 1990, Granite Construction Incorporated was formed as the holding company for Granite Construction Company and its wholly owned and consolidated subsidiaries and was incorporated in Delaware. Unless otherwise indicated, the terms "we," "us," "our," "Company" and "Granite" refer to Granite Construction Incorporated and its wholly owned and consolidated subsidiaries.

We deliver infrastructure solutions for public and private clients primarily in the United States. We are one of the largest diversified infrastructure companies in the United States. Within the public sector, we primarily concentrate on heavy-civil infrastructure projects, including the construction of streets, roads, highways, mass transit facilities, airport infrastructure, bridges, trenchless and underground utilities, power-related facilities, water-related facilities, utilities, tunnels, dams and other infrastructure-related projects. Within the private sector, we perform site preparation and infrastructure services for residential development, energy development, commercial and industrial sites, and other facilities, as well as provide construction management professional services.

On June 14, 2018, we completed the $349.8 million acquisition of Layne Christensen Company ("Layne"), a U.S.-based global water management, infrastructure services and drilling company in a stock-for-stock merger which was comprised of $321.0 million in Company common stock and $28.8 million in cash to settle all outstanding stock options, restricted stock awards and unvested performance shares of Layne. In addition to issuances of Granite common stock and the settlement of various equity awards, we assumed $191.5 million in convertible notes at fair value. Layne is a leader in water management and drilling and therefore this acquisition significantly enhances Granite's presence in the water infrastructure market. Layne has a network of 52 offices located throughout North and Latin America. See Note 2 and Note 15 of "Notes to the Consolidated Financial Statements" for further discussion of the acquisition and the assumed convertible notes, respectively.

In addition, on April 3, 2018, we acquired LiquiForce, a privately owned company which provides sewer lining rehabilitation services to public and private sector water and wastewater customers in both Canada and the U.S. We acquired LiquiForce for $35.9 million in cash primarily borrowed under our revolving credit facility. See Note 15 of "Notes to the Consolidated Financial Statements" for further discussion of our revolving credit facility.

Layne will operate as a wholly owned subsidiary of Granite Construction Incorporated, and its results are reported in the newly formed Water and Mineral Services operating group in the Water, Specialty and Materials segments. LiquiForce results are reported in the Water and Mineral Services operating group in the Water segment.

Operating Structure

During the third quarter of 2018, we revised our reportable segments, which are the same as our operating segments, as a result of a change in how our chief operating decision maker (our Chief Executive Officer) regularly reviews financial information to allocate resources and assess performance. This change is consistent with our strategic, end-market diversification strategy. Our new reportable segments which correspond to this end-market focus are: Transportation, Water, Specialty and Materials. The end-market segments Transportation, Water and Specialty replace the Construction and Large Project Construction reportable segments with the composition of our Materials segment remaining unchanged except for the addition of proprietary sanitary and storm water rehabilitation products including cured-in-place pipe felt and fiberglass-based lining tubes related to the acquisition of Layne. Prior-year information has been recast to reflect this change. See Note 22 of "Notes to the Consolidated Financial Statements" for additional information about our reportable business segments.

In addition to business segments, we review our business by operating groups. Our operating groups are defined as follows: (i) California; (ii) Northwest, which primarily includes offices in Alaska, Arizona, Nevada, Utah and Washington; (iii) Heavy Civil, which primarily includes offices in California, Florida, New York and Texas; (iv) Federal which primarily includes offices in California, Colorado, Texas and Guam; (v) Midwest (formerly Kenny less the underground business), which primarily includes offices in Illinois and (vi) Water and Mineral Services (which includes LiquiForce, Layne and the underground business of the former Kenny operating group), which primarily includes offices across the Unites States, Canada and Latin America.

Transportation

Revenue from our Transportation segment was $2.0 billion and $1.9 billion (59.5% and 65.1% of our total revenue) in 2018 and 2017, respectively. The Transportation segment focuses on construction and rehabilitation of roads, pavement preservation, bridges, rail lines, airports and marine ports for use mostly by the general public.

Water

Revenue from our Water segment was $338.3 million and $133.7 million (10.2% and 4.5% of our total revenue) in 2018 and 2017, respectively. The Water segment focuses on water-related construction and water management solutions for municipal agencies, commercial water suppliers, industrial facilities and energy companies. It also provides trenchless cured-in-place pipe rehabilitation.

Specialty

Revenue from our Specialty segment was $626.6 million and $615.8 million (18.9% and 20.6% of our total revenue) in 2018 and 2017, respectively. The Specialty segment focuses on construction of various complex projects including infrastructure / site development, mining, public safety, tunnel and power projects.

In addition to our bid-build projects, we utilize alternative procurement methods of project delivery including, but not limited to, design-build, construction management/general contractor and construction management at-risk. Unlike traditional bid-build projects where owners first hire a design firm or design a project themselves and then put the project out to bid for construction, design-build projects provide the owner with a single point of responsibility and a single contact for both final design and construction. Although design-build projects carry additional risk as compared to traditional bid-build projects, the profit potential can also be higher. Under the construction management/general contractor and construction management at-risk methods of delivery, we contract with owners to assist the owner during the design phase of the contract with construction efficiencies, with the understanding that we will negotiate a contract on the construction phase when the design nears completion. Revenue from alternative procurement method projects represented 34.1%, 39.9% and 40.6% of construction related revenue in 2018, 2017 and 2016, respectively.

We participate in joint ventures with other construction companies. Joint ventures are typically used for large, technically complex projects, including design-build projects, where it is necessary or desirable to share risk and resources. Joint venture partners typically provide independently prepared estimates, shared financing and equipment, and often bring local knowledge and expertise. For more information see the "Joint Ventures" section below.

Materials

Revenue from our Materials segment to third parties was $376.8 million and $292.8 million (11.4% and 9.8% of our total revenue) in 2018 and 2017, respectively. The Materials segment focuses on production of aggregates, asphalt and construction related materials as well as proprietary sanitary and storm water rehabilitation products including cured-in-place pipe felt and fiberglass-based lining tubes for both internal use and for sale to third parties. We have significant aggregate reserves that we own or lease through long-term leases. Sales to our construction projects represented 29.5% of our combined internal and external Materials sales during 2018, and ranged from 29.5% to 38.5% over the last five years. The remainder is sold to third parties.

Business Strategy

Our business strategy is to consistently deliver ideas, innovations, products and services to our clients to power today's mobile society by executing entrepreneurial market strategies that leverage the benefits of our company-wide resources and our core values. Our most fundamental objective is to increase long-term shareholder value as measured by the appreciation of the value of our common stock over a period of time, as well as dividend payouts. In alphabetical order, the following are key factors in our ability to achieve this objective:

Decentralized Profit Centers

Each of our operating groups is established as an individual profit center which encourages entrepreneurial activity while allowing the operating groups to benefit from centralized administrative, operational expertise and support functions.

Dedicated Construction Equipment

We own and lease a large fleet of well-maintained heavy construction equipment. Dedicated access to a large pool of construction equipment enables us to compete more effectively by ensuring availability and maximizing returns on investment of the equipment.

Diversification

To mitigate the risks inherent in the construction business as the result of general economic factors, we pursue projects: (i) in both the public and private sectors; (ii) in diverse end markets such as federal, rail, power, water and renewable energy markets; (iii) for a wide range of clients from the federal government to small municipalities and from large corporations to individual homeowners; (iv) in diverse geographic markets; (v) that are construction management/general contractor, design-build and bid-build; (vi) at fixed price, time and materials, cost reimbursable and fixed unit price; and (vii) of various sizes, durations and complexity. In addition to pursuing opportunities with traditional project funding, we continue to evaluate other sources of project funding (e.g., public and private partnerships).

Employee Development

We believe that our employees are the primary factor for the successful implementation of our business strategies. Significant resources are employed to attract, develop and retain extraordinary and diverse talent and fully promote each employee's capabilities.

Operational Excellence

We have a continual focus on Operational Excellence, which includes the following:

- Code of Conduct - We believe in maintaining high ethical standards through an established code of conduct and an effective company-wide compliance program, while being guided by our core values at all times.
- Sustainability - Our focus on sustainability encompasses many aspects of how we conduct ourselves and practice our Core Values. We believe sustainability is important to our clients, employees, shareholders, and communities, and is also a long-term business driver. By focusing on specific initiatives that address social, environmental and economic challenges, we can minimize risk and increase our competitive advantage.
- Productivity - We strive to use our resources efficiently to deliver work on time and on budget.
- Quality - We believe in satisfying our clients, mitigating risk, and driving improvement by performing work right the first time.
- Safety - We believe the safety of our employees, the public and the environment is a moral obligation as well as good business. By identifying and concentrating resources to address jobsite hazards, we continually strive to eliminate our incident rates and the costs associated with accidents.

Performance-Based Incentives

Managers are incentivized with cash compensation and restricted stock unit equity awards, payable upon the attainment of pre-established annual financial and non-financial metrics.

Risk-Balanced Growth

We intend to grow our business by working on many types of infrastructure projects, as well as by expanding into new geographic areas and end markets organically and through acquisitions. Growth opportunities are evaluated relative to their incremental impact to the execution risk and profitability profile of our operating portfolio.

Selective Bidding

We focus our resources on bidding jobs that meet our selective bidding criteria, which include analyzing the risk of a potential job relative to: (i) available personnel to estimate and prepare the proposal as well as to effectively manage and build the project; (ii) the competitive environment; (iii) our experience with the type of work and with the owner; (iv) local resources and partnerships; (v) equipment resources; and (vi) the size, complexity and expected profitability of the job.

Vertical Integration

We own and lease aggregate reserves and own processing plants and liner tube manufacturing facilities that are vertically integrated into our construction operations. By ensuring availability of these resources and providing quality products, we believe we have a competitive advantage in many of our markets, as well as a source of revenue and earnings from the sale of construction materials and liner tubes to third parties.

Raw Materials

We purchase raw materials, including but not limited to, aggregate products, cement, diesel and gasoline fuel, liquid asphalt, natural gas, propane, resin and steel from numerous sources. Our aggregate reserves supply a portion of the raw materials needed in our construction projects. The price and availability of raw materials may vary from year to year due to market conditions and production capacities. We do not foresee a lack of availability of any raw materials over the next twelve months.

Seasonality

Our operations are typically affected more by weather conditions during the first and fourth quarters of our fiscal year which may alter our construction schedules and can create variability in our revenues, profitability and the required number of employees.

Customers

Customers in our Transportation, Water and Specialty segments are predominantly in the public sector and include certain federal agencies, state departments of transportation, local transit authorities, county and city public works departments, school districts and developers, utilities and private owners of industrial, commercial and residential sites. Customers of our Materials segment include internal usage by our own construction projects, as well as third-party customers. Our third-party customers include, but, are not limited to, contractors, landscapers, manufacturers of products requiring aggregate materials, retailers, homeowners, farmers and brokers.

During the years ended December 31, 2018, 2017 and 2016, our largest volume customer, including both prime and subcontractor arrangements, was the California Department of Transportation (“Caltrans”). Revenue recognized from contracts with Caltrans during 2018, 2017 and 2016 represented $282.9 million (8.5% of total revenue), $281.7 million (9.4% of total revenue) and $222.4 million (8.8% of total revenue), respectively, which was primarily in the Transportation segment.

Contract Backlog

Our contract backlog consists of the revenue we expect to record in the future on awarded contracts, including 100% of our consolidated joint venture contracts and our proportionate share of unconsolidated joint venture contracts. We generally include a project in our contract backlog at the time it is awarded and to the extent we believe contract execution and funding is probable. Certain government contracts where funding is appropriated on a periodic basis are included in contract backlog at the time of the award when it is probable the contract value will be funded and executed. Certain contracts contain contract options that are exercisable at the option of our customers without requiring us to go through an additional competitive bidding process or contain task orders that are signed under master contracts under which we perform work only when the customer awards specific task orders to us. Awarded contracts that include unexercised contract options and unissued task orders are included in contract backlog to the extent option exercise or task order issuance is probable.

Substantially all of the contracts in our contract backlog may be canceled or modified at the election of the customer; however, we have not been materially adversely affected by contract cancellations or modifications in the past (see “Contract Provisions and Subcontracting”). Many projects are added to contract backlog and completed within the same fiscal year and, therefore, may not be reflected in our beginning or year-end contract backlog. Contract backlog by segment is presented in “Contract Backlog” under “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.” Our contract backlog was $3.7 billion at both December 31, 2018 and 2017 and did not yet include approximately $700 million in project wins that will be added to contract backlog as task orders are approved. Approximately $2.3 billion of the December 31, 2018 backlog is expected to be completed during 2019.

Equipment

At December 31, 2018 and 2017, we owned the following number of construction equipment and vehicles:

December 31,	2018	2017
Heavy construction equipment	2,928	1,905
Trucks, truck-tractors, trailers and vehicles	5,395	3,618

Our portfolio of equipment includes backhoes, barges, bulldozers, cranes, excavators, loaders, motor graders, pavers, rollers, scrapers, trucks, special equipment for pipeline rehabilitation, drilling rigs and tunnel boring machines that are used in all of our segments. We pool certain equipment to maximize utilization. We continually monitor and adjust our fleet size so that it is consistent with the size of our business, considering both existing contract backlog and expected future work. We lease or rent equipment to supplement our portfolio of equipment in response to construction activity cycles. In 2018 and 2017, we spent $58.5 million and $43.6 million, respectively, on purchases of construction equipment and vehicles.

Employees

On December 31, 2018, we employed approximately 2,700 salaried employees who work in project, functional and business unit management, estimating and clerical capacities, plus approximately 3,000 hourly employees. The total number of hourly personnel is subject to the volume of construction in progress and is seasonal. During 2018, the number of hourly employees ranged from approximately 2,100 to 4,500 and averaged approximately 3,500. Five of our wholly owned subsidiaries, Granite Construction Company, Granite Construction Northeast, Inc., Granite Infrastructure Constructors, Inc., Kenny Construction Company and Layne Christensen Company, are parties to craft collective bargaining agreements in many areas in which they operate.

We believe our employees are our most valuable resource, and our workforce possesses a strong dedication to and pride in our company. Our managerial and supervisory personnel have an average of approximately 11 years of service with Granite.

Competition

Competitors in our Transportation, Specialty and Water segments typically range from small, local construction companies to large, regional, national and international construction companies. We compete with numerous companies in individual markets; however, there are few, if any, companies which compete in all of our market areas. Many of our Transportation, Specialty and Water segment competitors have the ability to perform work in either the private or public sectors. When opportunities for work in one sector are reduced, competitors tend to look for opportunities in the other sector. This migration has the potential to reduce revenue growth and/or increase pressure on gross profit margins.

We own and/or have long-term leases on aggregate resources that we believe provide a competitive advantage in certain markets for the Transportation, Specialty and Water segments.

Competitors in our Materials segment typically range from small local materials companies to large regional, national and international materials companies. We compete with numerous companies in individual markets; however, there are few, if any, companies which compete in all of our market areas.

Factors influencing our competitiveness include price, estimating abilities, knowledge of local markets and conditions, project management, financial strength, reputation for quality, aggregate materials availability, and machinery and equipment. Historically, the construction business has not required large amounts of capital for the smaller size construction work, which can result in relative ease of market entry for companies possessing acceptable qualifications. By contrast, larger size construction work typically requires large amounts of capital that may make entry into the market by future competitors more difficult. Historically, the required amount of capital has not had a significant impact on our ability to compete in the marketplace. Although the construction business is highly competitive, we believe we are well positioned to compete effectively in the markets in which we operate.

Contract Provisions and Subcontracting

Contracts with our customers are primarily “fixed unit price” or “fixed price.” Under fixed unit price contracts, we are committed to providing materials or services at fixed unit prices (for example, dollars per cubic yard of concrete placed or cubic yard of earth excavated). While the fixed unit price contract shifts the risk of estimating the quantity of units required for a particular project to the customer, any increase in our unit cost over the expected unit cost in the bid, whether due to inflation, inefficiency, incorrect estimates or other factors, is borne by us unless otherwise provided in the contract. Fixed price contracts are priced on a lump-sum basis under which we bear the risk that we may not be able to perform the work for the specified contract amount. The percentage of fixed price contracts in our contract backlog was 64.0% and 66.9% at December 31, 2018 and 2017, respectively. The percentage of fixed unit price contracts in our contract backlog was 30.8% and 29.8% at December 31, 2018 and 2017, respectively. All other contract types represented 3.9% and 3.3% of our contract backlog at December 31, 2018 and 2017, respectively.

With the exception of contract change orders and affirmative claims, which are typically sole-source, our construction contracts are primarily obtained through competitive bidding in response to solicitations by both public agencies and private parties and on a negotiated basis as a result of solicitations from private parties. Project owners use a variety of methods to make contractors aware of new projects, including posting bidding opportunities on agency websites, disclosing long-term infrastructure plans, advertising and other general solicitations. Our bidding activity is affected by such factors as the nature and volume of advertising and other solicitations, contract backlog, available personnel, current utilization of equipment and other resources and competitive considerations. Our contract review process includes identifying risks and opportunities during the bidding process and managing these risks through mitigation efforts such as contract negotiation, bid/no bid decisions, insurance and pricing. Contracts fitting certain criteria of size and complexity are reviewed by various levels of management and, in some cases, by the Executive Committee of our Board of Directors. Bidding activity, contract backlog and revenue resulting from the award of new contracts may vary significantly from period to period.

There are a number of factors that can create variability in contract performance as compared to the original bid. Such factors can positively or negatively impact costs and profitability, may cause higher than anticipated construction costs and can create additional liability to the contract owner. The most significant of these include:

- the completeness and accuracy of the original bid;
- costs associated with scope changes;
- changes in costs of labor and/or materials;
- extended overhead and other costs due to owner, weather and other delays;
- subcontractor performance issues;
- changes in productivity expectations;
- site conditions that differ from those assumed in the original bid;
- changes from original design on design-build projects;
- the availability and skill level of workers in the geographic location of the project;
- a change in the availability and proximity of equipment and materials;
- our ability to fully and promptly recover on affirmative claims and back charges for additional contract costs; and
- the customer’s ability to properly administer the contract.

The ability to realize improvements on project profitability at times is more limited than the risk of lower profitability. For example, design-build contracts carry additional risks such as those associated with design errors and estimating quantities and prices before the project design is completed. We manage this additional risk by including contingencies to our bid amounts, obtaining errors and omissions insurance and obtaining indemnifications from our design consultants where possible. However, there is no guarantee that these risk management strategies will always be successful.

Most of our contracts, including those with the government, provide for termination at the convenience of the contract owner, with provisions to pay us for work performed through the date of termination. We have not been materially adversely affected by these provisions in the past. Many of our contracts contain provisions that require us to pay liquidated damages if specified completion schedule requirements are not met, and these amounts could be significant.

We act as prime contractor on most of our construction projects. We complete the majority of our projects with our own resources and subcontract specialized activities such as electrical and mechanical work. As prime contractor, we are responsible for the performance of the entire contract, including subcontract work. Thus, we may be subject to increased costs associated with the failure of one or more subcontractors to perform as anticipated. Based on our analysis of their construction and financial capabilities, among other criteria, we typically require the subcontractor to furnish a bond or other type of security to guarantee their performance and/or we retain payments in accordance with contract terms until their performance is complete. Disadvantaged business enterprise regulations require us to use our good faith efforts to subcontract a specified portion of contract work done for governmental agencies to certain types of disadvantaged contractors or suppliers. As with all of our subcontractors, some may not be able to obtain surety bonds or other types of performance security.

Joint Ventures

We participate in various construction joint ventures of which we are a limited member (“joint ventures”) in order to share expertise, risk and resources for certain highly complex projects. Generally, each construction joint venture is formed as a partnership or limited liability company to accomplish a specific project and is jointly controlled by the joint venture partners. We select our joint venture partners (“partner(s)”) based on our analysis of their construction and financial capabilities, expertise in the type of work to be performed and past working relationships, among other criteria. The joint venture agreements typically provide that our interests in any profits and assets, and our respective share in any losses and liabilities, that may result from the performance of the contract are limited to our stated percentage interest in the project.

Under each joint venture agreement, one partner is designated as the sponsor. The sponsoring partner typically provides all administrative, accounting and most of the project management support for the project and generally receives a fee from the joint venture for these services. We have been designated as the sponsoring partner in certain of our current joint venture projects and are a non-sponsoring partner in others.

We consolidate joint ventures where we have determined that through our participation we have a variable interest and are the primary beneficiary as defined by Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidation*, and related standards. Where we have determined we are not the primary beneficiary of a joint venture but do exercise significant influence, we account for our share of the operations of unconsolidated construction joint ventures on a pro rata basis in revenue and cost of revenue in the consolidated statements of operations and in equity in construction joint ventures in the consolidated balance sheets. We account for non-construction unconsolidated joint ventures under the equity method of accounting in accordance with ASC Topic 323, *Investments - Equity Method and Joint Ventures* and include our share of the operations in equity in income of affiliates in the consolidated statements of operations and in investment in affiliates in the consolidated balance sheets.

We also participate in various "line item" joint venture agreements under which each partner is responsible for performing certain discrete items of the total scope of contracted work. The revenue for these discrete items is defined in the contract with the project owner and each joint venture partner bears the profitability risk associated only with its own work. There is not a single set of books and records for a line item joint venture. Each partner accounts for its items of work individually as it would for any self-performed contract. We account for our portion of these contracts as revenues and cost of revenue in the consolidated statements of operations and in relevant balances in the consolidated balance sheets.

The agreements with our partner(s) for both construction joint ventures and line item joint ventures define each partner's management role and financial responsibility in the project. The amount of operational exposure is generally limited to our stated ownership interest. However, due to the joint and several nature of the performance obligations under the related owner contracts, if any of the partners fail to perform, we and the remaining partners, if any, would be responsible for performance of the outstanding work (i.e., we provide a performance guarantee). We estimate our liability for performance guarantees for our unconsolidated and line item joint ventures and include them in accrued expenses and other current liabilities with a corresponding increase in equity in construction joint ventures in the consolidated balance sheets. We reassess our liability when and if changes in circumstances occur. The liability and corresponding asset are removed from the consolidated balance sheets upon completion and customer acceptance of the project. Circumstances that could lead to a loss under these agreements beyond our stated ownership interest include the failure of a partner to contribute additional funds to the venture in the event the project incurs a loss or additional costs that we could incur should a partner fail to provide the services and resources that it had committed to provide in the agreement. We are not able to estimate amounts that may be required beyond the remaining cost of the work to be performed. These costs could be offset by billings to the customer or by proceeds from our partners' corporate and/or other guarantees.

At December 31, 2018, there was $3.1 billion of construction revenue to be recognized on unconsolidated and line item construction joint venture contracts, of which $1.0 billion represented our share and the remaining $2.1 billion represented our partners' share. See Note 10 of "Notes to the Consolidated Financial Statements" for more information.

Insurance and Bonding

We maintain general and excess liability, construction equipment, workers' compensation and medical insurance; all in amounts consistent with industry practice and as part of our overall risk management strategy. Further, our policies are held with financially stable coverage providers, often in a layered or quota share arrangement which reduces the likelihood of an interruption or impact to operations.

In connection with our business, we generally are required to provide various types of surety bonds that provide an additional measure of security for our performance under certain public and private sector contracts. Our ability to obtain surety bonds depends upon our capitalization, working capital, past performance, management expertise and external factors, including the capacity of the overall surety market. Surety companies consider such factors in light of the amount of our contract backlog that we have currently bonded and their current underwriting standards, which may change from time to time. The capacity of the surety market is subject to market-based fluctuations driven primarily by the level of surety industry losses and the degree of surety market consolidation. When the surety market capacity shrinks it results in higher premiums and increased difficulty obtaining bonding, in particular for larger, more complex projects throughout the market. To help mitigate this risk, we employ a co-surety structure involving three sureties. Although we do not believe that fluctuations in surety market capacity have significantly affected our ability to grow our business, there is no assurance that it will not significantly affect our ability to obtain new contracts in the future (see "Item 1A. Risk Factors").

Anti-corruption and Bribery

We are subject to the Foreign Corrupt Practices Act ("FCPA"), which prohibits U.S. and other business entities from making improper payments to foreign government officials, political parties or political party officials. We are also subject to the applicable anti-corruption laws in the jurisdictions in which we operate, thus potentially exposing us to liability and potential penalties in multiple jurisdictions. The anti-corruption provisions of the FCPA are enforced by the Department of Justice while other state or federal agencies may seek recourse against the Company for issues related to FCPA. In addition, the Securities and Exchange Commission ("SEC") requires strict compliance with certain accounting and internal control standards set forth under the FCPA. Failure to comply with the FCPA and other laws can expose us and/or individual employees to potentially severe criminal and civil penalties. Such penalties may have a material adverse effect on our business, financial condition and results of operations.

We devote resources to the development, maintenance, communication and enforcement of our Code of Conduct, our anti-bribery compliance policies, our internal control processes and compliance related policies. We strive to conduct timely internal investigations of potential violations and take appropriate action depending upon the outcome of the investigation.

Environmental Regulations

Our operations are subject to various federal, state and local laws and regulations relating to the environment, including those relating to discharges to air, water and land, the handling and disposal of solid and hazardous waste, the handling of underground storage tanks and the cleanup of properties affected by hazardous substances. Certain environmental laws impose substantial penalties for non-compliance and others, such as the federal Comprehensive Environmental Response, Compensation and Liability Act, impose strict, retroactive, joint and several liability upon persons responsible for releases of hazardous substances. We continually evaluate whether we must take additional steps at our locations to ensure compliance with environmental laws. While compliance with applicable regulatory requirements has not materially adversely affected our operations in the past, there can be no assurance that these requirements will not change and that compliance will not adversely affect our operations in the future. In addition, our aggregate materials operations require operating permits granted by governmental agencies. We believe that tighter regulations for the protection of the environment and other factors will make it increasingly difficult to obtain new permits and renewal of existing permits may be subject to more restrictive conditions than currently exist.

The California Air Resource Board requires California equipment owners/operators to reduce diesel particulate and nitrogen oxide emissions from in-use off-road diesel equipment and to meet progressively more restrictive emission targets from 2010 to 2022 by retrofitting equipment with diesel emission control devices or replacing equipment with new engine technology as it becomes available. Over the past few years we have been proactively replacing our fleet prior to the 2022 deadline to be in compliance and do not expect significant future costs.

As is the case with other companies in our industry, some of our aggregate products contain varying amounts of crystalline silica, a common mineral. Also, some of our construction and material processing operations release, as dust, crystalline silica that is in the materials being handled. Excessive, prolonged inhalation of very small-sized particles of crystalline silica has allegedly been associated with respiratory disease (including Silicosis). During 2016, the Occupational Safety and Health Administration ("OSHA") implemented new and more stringent occupational exposure thresholds for crystalline silica exposure as respirable dust. In addition, the Mine Safety and Health Administration is proposing the identical rule as implemented by OSHA. We have implemented dust control procedures to measure compliance with requisite thresholds and to verify that respiratory protective equipment is made available as necessary. We also communicate, through safety data sheets and other means, what we believe to be appropriate warnings and cautions to employees and customers about the risks associated with excessive, prolonged inhalation of mineral dust in general and crystalline silica in particular (see "Item 1A. Risk Factors"). The scope of new exposure limits indicates that additional engineering controls, beyond providing respirators will be required to reduce potential exposure in response to the reduced exposure limits. The OSHA General Industry and Construction Standards were phased in during late 2017 and were fully implemented in 2018. Expenses related to this implementation were immaterial during the years ended December 31, 2018 and 2017.

Website Access

Our website address is www.graniteconstruction.com. On our website we make available, free of charge, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. The information on our website is not incorporated into, and is not part of, this report. These reports, and any amendments to them, are also available at the website of the SEC, www.sec.gov.

Executive Officers of the Registrant

Information regarding our executive officers is set forth below.

Name	Age	Position
James H. Roberts	62	President and Chief Executive Officer
Jigisha Desai	52	Senior Vice President and Chief Financial Officer
Kyle T. Larkin	47	Senior Vice President and Group Manager
James D. Richards	55	Senior Vice President and Group Manager
Dale Swanberg	56	Senior Vice President and Group Manager

Mr. Roberts joined Granite in 1981 and has served in various capacities, including President and Chief Executive Officer since September 2010. He also served as Executive Vice President and Chief Operating Officer from September 2009 through August 2010, Senior Vice President from May 2004 through September 2009, Granite West Manager from February 2007 through September 2009, Branch Division Manager from May 2004 through February 2007, Vice President and Assistant Branch Division Manager from 1999 to 2004, and Regional Manager of Nevada and Utah Operations from 1995 to 1999. Mr. Roberts served as Chairman of The National Asphalt Pavement Association in 2006. He received a B.S.C.E. in 1979 and an M.S.C.E. in 1980 from the University of California, Berkeley, and an M.B.A. from the University of Southern California in 1981. He also completed the Stanford Executive Program in 2009.

Ms. Desai joined Granite in 1993 and has served as Senior Vice President and Chief Financial Officer since July 2018. She served as Vice President of Corporate Finance, Treasurer & Assistant Financial Officer from 2013-2018, Vice President, Treasurer & Assistant Financial Officer from 2007-2013, Assistant Treasurer & Assistant Secretary from 2001-2007 and Treasury Manager from 1993-2001. Ms. Desai is a Member of the Finance Committee for Pajaro Valley Health Trust. Ms. Desai received a Bachelor's degree in Accounting from the University of Houston in 1987, an M.B.A. in Corporate Finance from Golden Gate University in 1992 and completed Harvard Business School's Advanced Management Program in 2016. She is a Certified Treasury Professional.

Mr. Larkin joined Granite in 1996 and has served as Senior Vice President and Group Manager since October 2017, Vice President and Regional Manager in Nevada from January 2014 to September 2017 and President of Granite's wholly owned subsidiary, Intermountain Slurry Seal, Inc. from 2011 to 2014. He served as Manager of Construction at the Reno area office from 2008 to 2011 and Chief Estimator from 2004 to 2008. Mr. Larkin holds a B.S. in Construction Management from California Polytechnic State University, San Luis Obispo and an M.B.A. from the University of Massachusetts, Amherst.

Mr. Richards joined Granite in January 1992 and has served as Senior Vice President and Group Manager since January 2013. He also served as Arizona Region Manager from February 2006 through December 2012, Arizona Region Chief Estimator from January 2000 through January 2006 and in other positions at Granite's Arizona Branch between 1992 and 2000. Prior to joining Granite, he served as a U.S. Army Officer. Mr. Richards received a B.S. in Civil Engineering from New Mexico State University in 1987.

Mr. Swanberg joined Granite in 2015 and has served as Senior Vice President and Group Manager since January 2017 and as Vice President and Deputy Group Manager from April 2015 to December 2016. In 2013, Mr. Swanberg served as the Chief Operating Officer of Flatiron Construction. Prior to Flatiron Construction, he served in various positions for the Walsh Group from 1985 to 2012, including as the President of the Heavy Civil Group. Mr. Swanberg received a B.S. in Civil Engineering from Bradley University in 1984.

Item 1A. Risk Factors

Set forth below and elsewhere in this report and in other documents we file with the SEC are various risks and uncertainties that could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this report or otherwise adversely affect our business.

- ***Unfavorable economic conditions may have an adverse impact on our business.*** Volatility in the global financial system, deterioration in general economic activity, and fiscal, monetary and other policies that the federal, state and local government(s) may enact, including infrastructure spending or deficit reduction measures, may have an adverse impact on our business, financial position, results of operations, cash flows and liquidity. In particular, low tax revenues, budget deficits, financing constraints, including timing of long-term federal, state and local funding releases, and competing priorities could negatively impact the ability of government agencies to fund existing or new infrastructure projects in the public sector. In addition, these factors could have a material adverse effect on the financial market and economic conditions in the United States as well as throughout the world, which may limit our ability and the ability of our customers to obtain financing and/or could impair our ability to execute our acquisition strategy. In addition, levels of new commercial and residential construction projects could be adversely affected by oversupply of existing inventories of commercial and residential properties, low property values and a restrictive financing environment.

- ***We work in a highly competitive marketplace.*** We have multiple competitors in all of the areas in which we work, and some of our competitors are larger than we are and may have greater resources than we do. Government funding for public works projects is limited, thus contributing to competition for the limited number of public projects available. This increased competition may result in a decrease in new awards at acceptable profit margins. In addition, should downturns in residential and commercial construction activity occur, the competition for available public sector work would intensify, which could impact our revenue, contract backlog and profit margins.
- ***Government contracts generally have strict regulatory requirements.*** Approximately 80.3% of our construction related revenue in 2018 was derived from contracts funded by federal, state and local government agencies and authorities. Government contracts are subject to specific procurement regulations, contract provisions and a variety of socioeconomic requirements relating to their formation, administration, performance and accounting and often include express or implied certifications of compliance. Claims for civil or criminal fraud may be brought for violations of regulations, requirements or statutes. We may also be subject to qui tam litigation brought by private individuals on behalf of the government under the Federal Civil False Claims Act, which could include claims for up to treble damages. Further, if we fail to comply with any of the regulations, requirements or statutes or if we have a substantial number of accumulated Occupational Safety and Health Administration, Mine Safety and Health Administration or other workplace safety violations, our existing government contracts could be terminated and we could be suspended from government contracting or subcontracting, including federally funded projects at the state level. Should one or more of these events occur, it could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.
- ***Government contractors are subject to suspension or debarment from government contracting.*** Our substantial dependence on government contracts exposes us to a variety of risks that differ from those associated with private sector contracts. Various statutes to which our operations are subject, including the Davis-Bacon Act (which regulates wages and benefits), the Walsh-Healy Act (which prescribes a minimum wage and regulates overtime and working conditions), Executive Order 11246 (which establishes equal employment opportunity and affirmative action requirements) and the Drug-Free Workplace Act, provide for mandatory suspension and/or debarment of contractors in certain circumstances involving statutory violations. In addition, the Federal Acquisition Regulation and various state statutes provide for discretionary suspension and/or debarment in certain circumstances that might call into question a contractor's willingness or ability to act responsibly, including as a result of being convicted of, or being found civilly liable for, fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public contract or subcontract. The scope and duration of any suspension or debarment may vary depending upon the facts and the statutory or regulatory grounds for debarment and could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.
- ***Our success depends on attracting and retaining qualified personnel, joint venture partners and subcontractors in a competitive environment.*** The success of our business is dependent on our ability to attract, develop and retain qualified personnel, joint venture partners, advisors and subcontractors. Changes in general or local economic conditions and the resulting impact on the labor market and on our joint venture partners may make it difficult to attract or retain qualified individuals in the geographic areas where we perform our work. If we are unable to provide competitive compensation packages, high-quality training programs and attractive work environments or to establish and maintain successful partnerships, our reputation, relationships and/or ability to profitably execute our work could be adversely impacted.
- ***Failure to maintain safe work sites could result in significant losses.*** Construction and maintenance sites are potentially dangerous workplaces and often put our employees and others in close proximity with mechanized equipment, moving vehicles, chemical and manufacturing processes, and highly regulated materials. On many sites, we are responsible for safety and, accordingly, must implement safety procedures. If we fail to implement these procedures or if the procedures we implement are ineffective, we may suffer the loss of or injury to our employees, as well as expose ourselves to possible litigation. Our failure to maintain adequate safety standards through our safety programs could result in reduced profitability or the loss of projects or clients, and could have a material adverse impact on our financial position, results of operations, cash flows and liquidity.
- ***In connection with acquisitions or divestitures, we may become subject to liabilities.*** In connection with any acquisitions, we may acquire liabilities or defects such as legal claims, including but not limited to third party liability and other tort claims; claims for breach of contract; employment-related claims; environmental liabilities, conditions or damage; permitting, regulatory or other compliance with law issues; or tax liabilities. If we acquire any of these liabilities, and they are not adequately covered by insurance or an enforceable indemnity or similar agreement from a creditworthy counterparty, we may be responsible for significant out-of-pocket expenditures. In connection with any divestitures, we may incur liabilities for breaches of representations and warranties or failure to comply with operating covenants under any agreement for a divestiture. In addition, we may indemnify a counterparty in a divestiture for certain liabilities of the subsidiary or operation s subject to the divestiture transaction. These liabilities, if they materialize, could have a material adverse effect on our business, financial condition and results of operations.

- ***As a part of our growth strategy we have made and may make future acquisitions, and acquisitions involve many risks.*** These risks include:

    - difficulties integrating the operations and personnel of the acquired companies;
    - diversion of management's attention from ongoing operations;
    - potential difficulties and increased costs associated with completion of any assumed construction projects;
    - insufficient revenues to offset increased expenses associated with acquisitions and the potential loss of key employees or customers of the acquired companies;
    - assumption of liabilities of an acquired business, including liabilities that were unknown at the time the acquisition was negotiated;
    - difficulties relating to assimilating the personnel, services, and systems of an acquired business and to assimilating marketing and other operational capabilities;
    - increased burdens on our staff and on our administrative, internal control and operating systems, which may hinder our legal and regulatory compliance activities;
    - difficulties in applying and integrating our system of internal controls to an acquired business;
    - if we issue additional equity securities, such issuances could have the effect of diluting our earnings per share as well as our existing shareholders' individual ownership percentages in the Company;
    - the recording of goodwill or other non-amortizable intangible assets that will be subject to subsequent impairment testing and potential impairment charges, as well as amortization expenses related to certain other intangible assets; and
    - while we often obtain indemnification rights from the sellers of acquired businesses, such rights may be difficult to enforce and the indemnitors may not have the ability to financially support the indemnity.

    Failure to manage and successfully integrate acquisitions could harm our financial position, results of operations, cash flows and liquidity.

- ***An inability to obtain bonding could have a negative impact on our operations and results.*** As more fully described in "Insurance and Bonding" under "Item 1. Business," we generally are required to provide surety bonds securing our performance under the majority of our public and private sector contracts. Our inability to obtain reasonably priced surety bonds in the future and, while we monitor the financial health of our insurers and the insurance market, catastrophic events could reduce available limits or the breadth of coverage both of which could significantly affect our ability to be awarded new contracts and could, therefore, have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***We may be unable to identify and contract with qualified Disadvantaged Business Enterprise ("DBE") contractors to perform as subcontractors.*** Certain of our government agency projects contain minimum DBE participation clauses. If we subsequently fail to complete these projects with the minimum DBE participation, we may be held responsible for breach of contract, which may include restrictions on our ability to bid on future projects as well as monetary damages. To the extent we are responsible for monetary damages, the total costs of the project could exceed our original estimates, we could experience reduced profits or a loss for that project and there could be a material adverse impact to our financial position, results of operations, cash flows and liquidity.

- ***Fixed price and fixed unit price contracts subject us to the risk of increased project cost.*** As more fully described in "Contract Provisions and Subcontracting" under "Item 1. Business," the profitability of our fixed price and fixed unit price contracts can be adversely affected by a number of factors that can cause our actual costs to materially exceed the costs estimated at the time of our original bid. This could result in reduced profits or a loss for that project and there could be a material adverse impact to our financial position, results of operations, cash flows and liquidity.

- ***Design-build contracts subject us to the risk of design errors and omissions.*** Design-build is increasingly being used as a method of project delivery as it provides the owner with a single point of responsibility for both design and construction. We generally subcontract design responsibility to architectural and engineering firms. However, in the event of a design error or omission causing damages, there is risk that the subcontractor or their errors and omissions insurance would not be able to absorb the liability. In this case we may be responsible, resulting in a potentially material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***Many of our contracts have penalties for late completion.*** In some instances, including many of our fixed price contracts, we guarantee that we will complete a project by a certain date. If we subsequently fail to complete the project as scheduled we may be held responsible for costs resulting from the delay, generally in the form of contractually agreed-upon liquidated damages. To the extent these events occur, the total cost of the project could exceed our original estimate and we could experience reduced profits or a loss on that project and there could be a material adverse impact to our financial position, results of operations, cash flows and liquidity.

- ***Strikes or work stoppages could have a negative impact on our operations and results.*** We are party to collective bargaining agreements covering a portion of our craft workforce. Although strikes or work stoppages have not had a significant impact on our operations or results in the past, such labor actions could have a significant impact on our operations and results if they occur in the future.

- ***Failure of our subcontractors to perform as anticipated could have a negative impact on our results.*** As further described in "Contract Provisions and Subcontracting" under "Item 1. Business," we subcontract portions of many of our contracts to specialty subcontractors, but we are ultimately responsible for the successful completion of their work. Although we seek to require bonding or other forms of guarantees, we are not always successful in obtaining those bonds or guarantees from our higher-risk subcontractors. In this case we may be responsible for the failures on the part of our subcontractors to perform as anticipated, resulting in a potentially adverse impact on our cash flows and liquidity. In addition, the total costs of a project could exceed our original estimates and we could experience reduced profits or a loss for that project, which could have an adverse impact on our financial position, results of operations, cash flows and liquidity.

- ***Our joint venture contracts subject us to risks and uncertainties, some of which are outside of our control.*** As further described in Note 1 of "Notes to the Consolidated Financial Statements" and under "Item 1. Business; Joint Ventures," we perform certain construction contracts as a limited member of joint ventures. Participating in these arrangements exposes us to risks and uncertainties, including the risk that if our partners fail to perform under joint and several liability contracts, we could be liable for completion of the entire contract. In addition, if our partners are not able or willing to provide their share of capital investment to fund the operations of the venture, there could be unanticipated costs to complete the projects, financial penalties or liquidated damages. These situations could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

  To the extent we are not the controlling partner, we have limited control over many of the decisions made with respect to the related construction projects. These joint ventures may not be subject to the same compliance requirements, including those related to internal control over financial reporting. While we have controls to sufficiently mitigate the risks associated with reliance on their control environment and financial information, to the extent the controlling partner makes decisions that negatively impact the joint venture or internal control problems arise within the joint venture, it could have a material adverse impact on our business, financial position, results of operations, cash flows and liquidity.

- ***Our failure to adequately recover on affirmative claims brought by us against project owners or other project participants (e.g., back charges against subcontractors) for additional contract costs could have a negative impact on our liquidity and future operations.*** In certain circumstances, we assert affirmative claims against project owners, engineers, consultants, subcontractors or others involved in a project for additional costs exceeding the contract price or for amounts not included in the original contract price. These types of affirmative claims occur due to matters such as delays or changes from the initial project scope, both of which may result in additional costs. Often, these affirmative claims can be the subject of lengthy arbitration or litigation proceedings, and it is difficult to accurately predict when and on what terms they will be fully resolved. The potential gross profit impact of recoveries for affirmative claims may be material in future periods when they, or a portion of them, become probable and estimable or are settled. When these types of events occur, we use working capital to cover cost overruns pending the resolution of the relevant affirmative claims and may incur additional costs when pursuing such potential recoveries. A failure to recover on these types of affirmative claims promptly and fully could have a negative impact on our financial position, results of operations, cash flows and liquidity. In addition, while clients and subcontractors may be obligated to indemnify us against certain liabilities, such third parties may refuse or be unable to pay us.

- ***Failure to remain in compliance with covenants under our debt and credit agreements, service our indebtedness, or fund our other liquidity needs could adversely impact our business.*** Our debt and credit agreements and related restrictive and financial covenants are more fully described in Note 15 of "Notes to the Consolidated Financial Statements." Our failure to comply with any of these covenants, or to pay principal, interest or other amounts when due thereunder, would constitute an event of default under the applicable agreements. Under certain circumstances, the occurrence of an event of default under one of our debt or credit agreements (or the acceleration of the maturity of the indebtedness under one of our agreements) may constitute an event of default under one or more of our other debt or credit agreements. Default under our debt and credit agreements could result in (i) us no longer being entitled to borrow under the agreements; (ii) termination of the agreements; (iii) the requirement that any letters of credit under the agreements be cash collateralized; (iv) acceleration of the maturity of outstanding indebtedness under the agreements; and/or (v) foreclosure on any lien securing the obligations under the agreements. If we are unable to service our debt obligations or fund our other liquidity needs, we could be forced to curtail our operations, reorganize our capital structure (including through bankruptcy proceedings) or liquidate some or all of our assets in a manner that could cause holders of our securities to experience a partial or total loss of their investment in us.

- ***Unavailability of insurance coverage could have a negative effect on our operations and results.*** We maintain insurance coverage as part of our overall risk management strategy and pursuant to requirements to maintain specific coverage that are contained in our financing agreements and in most of our construction contracts. Although we have been able to obtain reasonably priced insurance coverage to meet our requirements in the past, there is no assurance that we will be able to do so in the future, and our inability to obtain such coverage could have an adverse impact on our ability to procure new work, which could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***Accounting for our revenues and costs involves significant estimates.*** As further described in "Critical Accounting Policies and Estimates" under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations," accounting for our contract-related revenues and costs, as well as other expenses, requires management to make a variety of significant estimates and assumptions. Although we believe we have sufficient experience and processes to enable us to formulate appropriate assumptions and produce reasonably dependable estimates, these assumptions and estimates may change significantly in the future and could result in the reversal of previously recognized revenue and profit. Such changes could have a material adverse effect on our financial position and results of operations.

- ***We use certain commodity products that are subject to significant price fluctuations.*** Petroleum based products, such as fuels, lubricants, and liquid asphalt, are used to power or lubricate our equipment, operate our plants, and a significant ingredient in the asphaltic concrete we manufacture for sale to third parties and use in our asphalt paving construction projects. Although we are partially protected by asphalt or fuel price escalation clauses in some of our contracts, many contracts provide no such protection. We also use steel and other commodities in our construction projects that can be subject to significant price fluctuations. To mitigate these risks, we pre-purchase commodities, enter into supply agreements or enter into financial contracts to secure pricing. Although we have not been significantly adversely affected by price fluctuations in the past, there is no guarantee that we will not be in the future.

- ***We are subject to environmental and other regulation.*** As more fully described in "Environmental Regulations" under "Item 1. Business," we are subject to a number of federal, state and local laws and regulations relating to the environment, workplace safety and a variety of socioeconomic requirements. Noncompliance with such laws and regulations can result in substantial penalties, or termination or suspension of government contracts as well as civil and criminal liability. In addition, some environmental laws and regulations impose liability and responsibility on present and former owners, operators or users of facilities and sites for contamination at such facilities and sites, without regard to causation or knowledge of contamination. We occasionally evaluate various alternatives with respect to our facilities, including possible dispositions or closures. Investigations undertaken in connection with these activities may lead to discoveries of contamination that must be remediated, and closures of facilities may trigger compliance requirements that are not applicable to operating facilities. While compliance with these laws and regulations has not materially adversely affected our operations in the past, there can be no assurance that these requirements will not change and that compliance will not adversely affect our operations in the future. Furthermore, we cannot provide assurance that existing or future circumstances or developments with respect to contamination will not require us to make significant remediation or restoration expenditures.

- ***Weather can significantly affect our revenues and profitability.*** Our ability to perform work is significantly affected by weather conditions such as precipitation and temperature. Changes in weather conditions can cause delays and otherwise significantly affect our project costs. The impact of weather conditions can result in variability in our quarterly revenues and profitability, particularly in the first and fourth quarters of the year.

- ***Increasing restrictions on securing aggregate reserves could negatively affect our future operations and results.*** Tighter regulations and the finite nature of property containing suitable aggregate reserves are making it increasingly challenging and costly to secure aggregate reserves. Although we have thus far been able to secure reserves to support our business, our financial position, results of operations, cash flows and liquidity may be adversely affected by an increasingly difficult permitting process.

- ***We may be required to contribute cash to meet our unfunded pension obligations in certain multi-employer plans.*** Five of our wholly owned subsidiaries, Granite Construction Company, Granite Construction Northeast, Inc., Granite Industrial, Inc., Kenny Construction Company and Layne Christensen Company participate in various domestic multi-employer pension plans on behalf of union employees. Union employee benefits generally are based on a fixed amount for each year of service. We are required to make contributions to the plans in amounts established under collective bargaining agreements. Pension expense is recognized as contributions are made. The domestic pension plans are subject to the Employee Retirement Income Security Act of 1974 ("ERISA"). Under ERISA, a contributor to a multi-employer plan may be liable, upon termination or withdrawal from a plan, for its proportionate share of a plan's unfunded vested liability. While we currently have no intention of withdrawing from a plan and unfunded pension obligations have not significantly affected our operations in the past, there can be no assurance that we will not be required to make material cash contributions to one or more of these plans to satisfy certain underfunded benefit obligations in the future.

- ***Force majeure events, including natural disasters and terrorists' actions, could negatively impact our business, which may affect our financial condition, results of operations or cash flows.*** Force majeure or extraordinary events beyond the control of the contracting parties, such as natural and man-made disasters, as well as terrorist actions, could negatively impact the economies in which we operate. We typically negotiate contract language where we are allowed certain relief from force majeure events in private client contracts and review and attempt to mitigate force majeure events in both public and private client contracts. We remain obligated to perform our services after most extraordinary events subject to relief that may be available pursuant to a force majeure clause. If we are not able to react quickly to force majeure events, our operations may be affected, which could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***Changes to our outsourced software or infrastructure vendors as well as any sudden loss, breach of security, disruption or unexpected data or vendor loss associated with our information technology systems could have a material adverse effect on our business.*** We rely on third-party software and infrastructure to run critical accounting, project management and financial information systems. If software or infrastructure vendors decide to discontinue further development, integration or long-term maintenance support for our information systems, or there is any system interruption, delay, breach of security, loss of data or loss of a vendor, we may need to migrate some or all of our accounting, project management and financial information to other systems. Despite business continuity plans, these disruptions could increase our operational expense as well as impact the management of our business operations, which could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***Cybersecurity attacks on or breaches of our information technology environment could result in business interruptions, remediation costs and/or legal claims.*** To protect confidential customer, vendor, financial and employee information, we employ information security measures that secure our information systems from cybersecurity attacks or breaches. Even with these measures, we may be subject to unauthorized access of digital data with the intent to misappropriate information, corrupt data or cause operational disruptions. If a failure of our safeguarding measures were to occur, it could have a negative impact to our business and result in business interruptions, remediation costs and/or legal claims, which could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

- ***A change in tax laws or regulations of any federal, state or international jurisdiction in which we operate could increase our tax burden and otherwise adversely affect our financial position, results of operations, cash flows and liquidity.*** We continue to assess the impact of various U.S. federal, state, local and international legislative proposals that could result in a material increase to our U.S. federal, state, local and/or international taxes. We cannot predict whether any specific legislation will be enacted or the terms of any such legislation. However, if such proposals were to be enacted, or if modifications were to be made to certain existing regulations, the consequences could have a material adverse impact on us, including increasing our tax burden, increasing our cost of tax compliance or otherwise adversely affecting our financial position, results of operations, cash flows and liquidity.

- ***Our contract backlog is subject to unexpected adjustments and cancellations and could be an uncertain indicator of our future earnings.*** We cannot guarantee that the revenues projected in our contract backlog will be realized or, if realized, will be profitable. Projects reflected in our contract backlog may be affected by project cancellations, scope adjustments, time extensions or other changes. Such changes may adversely affect the revenue and profit we ultimately realize on these projects.

- ***Our business strategy includes growing our international operations, which are subject to a number of special risks.*** As part of our strategic diversification efforts, we may enter into more construction contracts in international locations, which may subject us to a number of special risks unique to foreign countries and/or operations. Due to the special risks associated with non-U.S. operations, our exposure to such risks may not be proportionate to the percentage of our revenues attributable to such operations.

- ***We may be exposed to liabilities under the Foreign Corrupt Practices Act ("FCPA") and any determination that we or any of our subsidiaries has violated the FCPA could have a material adverse effect on our business.*** The FCPA generally prohibits companies and their affiliates from making improper payment to non-U.S. officials for the purpose of obtaining or retaining business. Our internal policies, procedures and code of conduct mandate compliance with these anti-corruption laws. However, with the acquisition of Layne we now operate in some countries known to experience corruption. Despite our training and compliance programs, we cannot provide assurance that our internal policies and procedures will always protect us from violation of such anti-corruption laws committed by our affiliated entities or their respective officers, directors, employees and agents. We could also face fines, sanctions and other penalties from authorities in the relevant foreign jurisdictions, including prohibition of our participating in or curtailment of business

operations in those jurisdictions and the seizure of certain of our assets. Our customers in those jurisdictions could also seek to impose penalties or take other actions adverse to our interest. In addition, we could face other third-party claims by among others, our stockholders, debt holders or other interest holders or constituents. Violations of FCPA laws, allegations of such violations and/or disclosure related to any relevant investigation could have a material adverse impact on our financial position, results of operations, cash flows and liquidity for reasons including, but not limited to, an adverse effect our reputation, our ability to obtain new business or retain existing business, to attract and retain employees, to access the capital markets and/or could give rise to an event of default under the agreements governing our debt instruments.

- ***Rising inflation and/or interest rates could have an adverse effect on our business, financial condition and results of operations.*** Economic factors, including inflation and fluctuations in interest rates, could have a negative impact on our business. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could have a material adverse effect on our financial position, results of operations, cash flows and liquidity.

The foregoing list is not all-inclusive. There can be no assurance that we have correctly identified and appropriately assessed all factors affecting our business or that the publicly available and other information with respect to these matters is complete and correct. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect us. These developments could have material adverse effects on our business, financial condition, results of operations and liquidity. For these reasons, the reader is cautioned not to place undue reliance on our forward-looking statements.

Item 1B. Unresolved Staff Comments

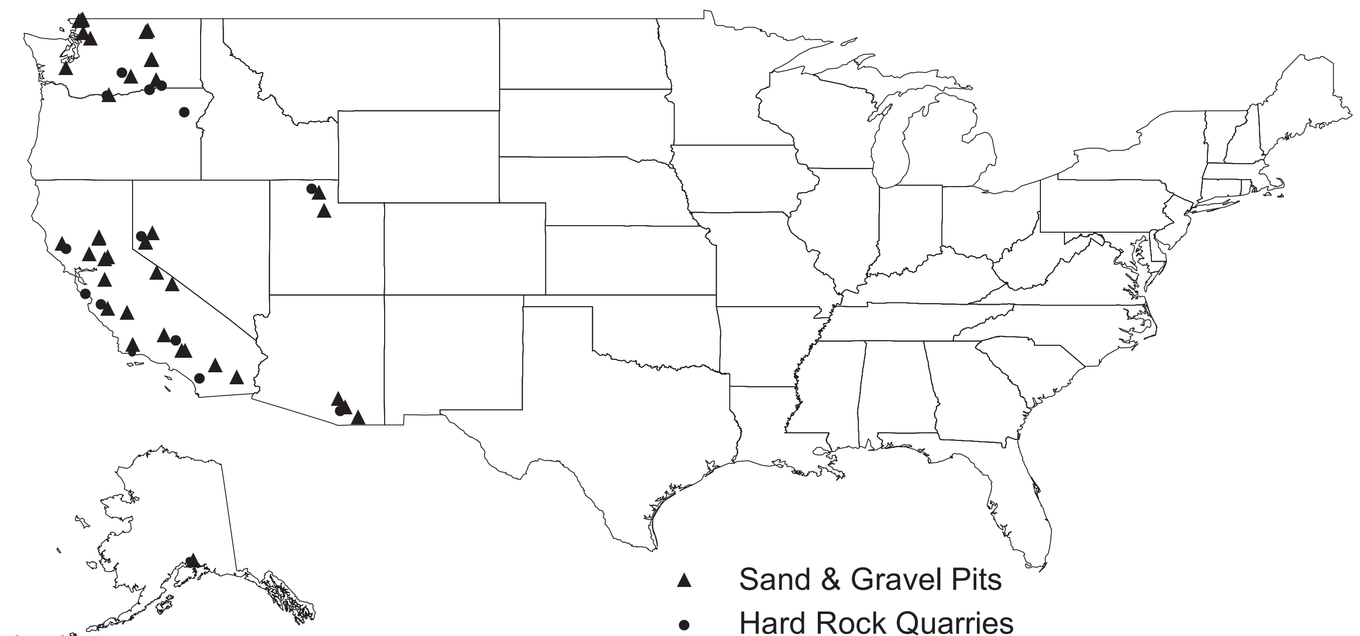
None.

Item 2. Properties

Quarry Properties

As of December 31, 2018, we had 43 active and 17 inactive permitted quarry properties available for the extraction of sand and gravel and hard rock, all of which are located in the western United States. All of our quarries are open-pit and are primarily accessible by road. We process aggregates into construction materials for internal use and for sale to third parties. Our plant equipment is powered mostly by electricity provided by local utility companies. The following map shows the approximate locations of our permitted quarry properties as of December 31, 2018.

SAND & GRAVEL AND HARD ROCK PRODUCTION FACILITIES



We estimate our permitted proven[1] and probable[2] aggregate reserves to be approximately 659.6 million tons with an average permitted life of approximately 50 years at present operating levels. Present operating levels are determined based on a three-year annual average aggregate production rate of 13.25 million tons. Reserve estimates were made by our geologists and engineers based primarily on drilling studies. Reserve estimates are based on various assumptions, and any material inaccuracies in these assumptions could have a material impact on the accuracy of our reserve estimates. These properties are used by all of our segments.

1 Proven reserves are determined through the testing of samples obtained from closely spaced subsurface drilling and/or exposed pit faces. Proven reserves are sufficiently understood so that quantity, quality, and engineering conditions are known with sufficient accuracy to be mined without the need for any further subsurface work. Actual required spacing is based on geologic judgment about the predictability and continuity of each deposit.

2 Probable reserves are determined through the testing of samples obtained from subsurface drilling but the sample points are too widely spaced to allow detailed prediction of quantity, quality, and engineering conditions. Additional subsurface work may be needed prior to mining the reserve.

The following tables present information about our quarry properties as of December 31, 2018 (tons in millions):

	Type					
Quarry Properties	**Sand & Gravel**	**Hard Rock**	**Permitted Aggregate Reserves (tons)**	**Unpermitted Aggregate Reserves (tons)**	**Three-Year Annual Average Production Rate (tons)**	**Average Reserve Life**
Owned quarry properties	24	5	384.6	286.2	5.3	73
Leased quarry properties[1]	20	11	275.0	101.6	8.0	35

1 Our leases have terms which range from month-to-month to 45 years with most including an option to renew and includes royalty related agreements.

		Permitted Reserves for Each Product Type (tons)		Percentage of Permitted Reserves Owned and Leased	
State	**Number of Properties**	**Sand & Gravel**	**Hard Rock**	**Owned**	**Leased**
California	23	227.5	214.6	56%	44%
Non-California	37	129.0	88.5	64%	36%

Plant Properties

We operate plants at our quarry sites to process aggregates into construction materials. Some of our sites may have more than one crushing, concrete or asphalt processing plant. In an effort to continuously increase efficiencies based on external and internal demands, we sold or otherwise disposed of four plants during 2018 and several plants and the associated land in California during 2017. The gains associated with these sales were immaterial during 2018 and 2017. At December 31, 2018 and 2017, we owned the following plants:

December 31,	**2018**	**2017**
Aggregate crushing plants	29	29
Asphalt concrete plants	49	49
Cement concrete batch plants	5	7
Asphalt rubber plants	7	6
Lime slurry plants	6	8
Pipe liner product factories	2	—

These plants are used by all of our segments.

Other Properties

The following table provides our estimate of certain information about other properties as of December 31, 2018:

	Land Area (acres)	**Building Square Feet**
Office and shop space (owned and leased)	1,387	2,092,222

The office and shape space is used by all of our segments.

Item 3. Legal Proceedings

In the ordinary course of business, we and our affiliates are involved in various legal proceedings alleging, among other things, liability issues or breach of contract or tortious conduct in connection with the performance of services and/or materials provided, the outcomes of which cannot be predicted with certainty. We and our affiliates are also subject to government inquiries in the ordinary course of business seeking information concerning our compliance with government construction contracting requirements and various laws and regulations, the outcomes of which cannot be predicted with certainty.

Some of the matters in which we or our joint ventures and affiliates are involved may involve compensatory, punitive, or other claims or sanctions that, if granted, could require us to pay damages or make other expenditures in amounts that are not probable to be incurred or cannot currently be reasonably estimated. In addition, in some circumstances our government contracts could be terminated, we could be suspended, debarred or incur other administrative penalties or sanctions, or payment of our costs could be disallowed. While any of our pending legal proceedings may be subject to early resolution as a result of our ongoing efforts to resolve the proceedings whether or when any legal proceeding will be resolved is neither predictable nor guaranteed.

Accordingly, it is possible that future developments in such proceedings and inquiries could require us to (i) adjust existing accruals, or (ii) record new accruals that we did not originally believe to be probable or that could not be reasonably estimated. Such changes could be material to our financial condition, results of operations and/or cash flows in any particular reporting period. In addition to matters that are considered probable for which the loss can be reasonably estimated, disclosure is also provided when it is reasonably possible and estimable that a loss will be incurred or when it is reasonably possible that the amount of a loss will exceed the amount recorded.

Liabilities relating to legal proceedings and government inquiries, to the extent that we have concluded such liabilities are probable and the amounts of such liabilities are reasonably estimable, are recorded in the consolidated balance sheets. The aggregate liabilities recorded as of December 31, 2018 and 2017 related to these matters were immaterial. The aggregate range of possible loss related to (i) matters considered reasonably possible, and (ii) reasonably possible amounts in excess of accrued losses recorded for probable loss contingencies, including those related to liquidated damages, could have a material impact on our consolidated financial statements if they become probable and the reasonably estimable amount is determined.

Item 4. Mine Safety Disclosures

The information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K (17CFR 229.104) is included in Exhibit 95 to this Annual Report on Form 10-K.

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

Our common stock trades on the New York Stock Exchange under the ticker symbol GVA. As of February 19, 2019, there were 46,685,414 shares of our common stock outstanding held by 782 shareholders of record. We have paid quarterly cash dividends since the second quarter of 1990, and we expect to continue to do so.

The following table sets forth information regarding the repurchase of shares of our common stock during the three months ended December 31, 2018:

Period	Total Number of Shares Purchased[1]	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet be Purchased Under the Plans or Programs[2]
Oct 1, 2018 through Oct 31, 2018	152	$44.74	—	$200,000,000
Nov 1, 2018 through Nov 30, 2018	455	$51.62	—	$200,000,000
Dec 1, 2018 through Dec 31, 2018	3,670	$44.75	252,072	$190,000,029
	4,277	$45.48	252,072	

[1] The number of shares purchased is in connection with employee tax withholding for units vested under our 2012 Equity Incentive Plan.

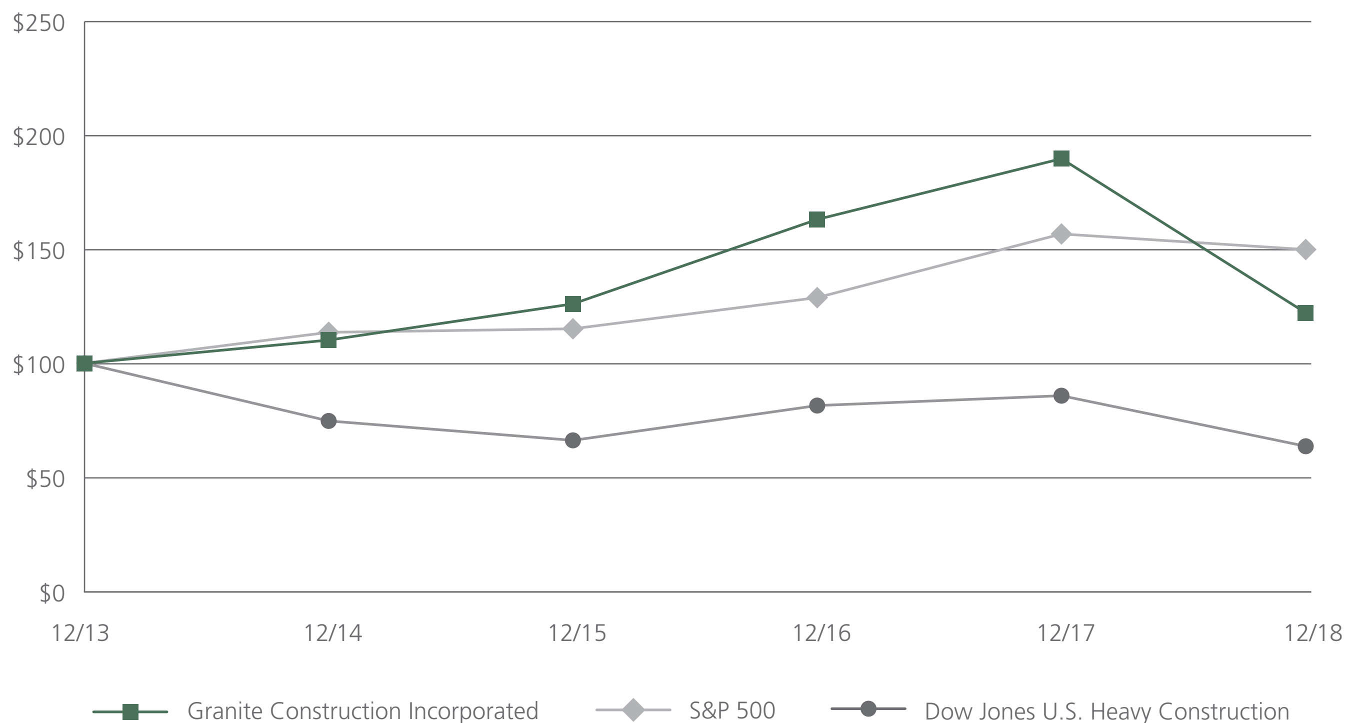
[2] As announced on April 29, 2016, on April 7, 2016, the Board of Directors authorized us to purchase up to $200.0 million of our common stock at management's discretion, which replaced the former authorization including the amount available. As part of this authorization we have established a share repurchase program to facilitate common stock repurchases. During the fourth quarter of 2018, we purchased approximately 252,000 shares at an average price of $39.64 per share for $10.0 million. The specific timing and amount of any future purchases will vary based on market conditions, securities law limitations and other factors.

Performance Graph

The following graph compares the cumulative 5-year total return provided to Granite Construction Incorporated's common stock holders relative to the cumulative total returns of the S&P 500 index and the Dow Jones U.S. Heavy Construction index. The Dow Jones U.S. Heavy Construction index includes the following companies: AECOM, Chicago Bridge & Iron Co NV, Arcosa Inc, Dycom Industries Inc., Emcor Group Inc., Fluor Corp., Jacobs Engineering Group Inc., KBR Inc., Mastec Inc., Quanta Services Inc. and Valmont Industries Inc. Certain of these companies differ from Granite in that they derive more revenue and profit from non-U.S. operations and have customers in different markets. The graph tracks the performance of a $100 investment in our common stock and in each (with the reinvestment of all dividends) from December 31, 2013 through December 31, 2018.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Granite Construction Incorporated, the S&P 500 Index
and the Dow Jones U.S. Heavy Construction Index



* $100 invested on 12/31/13 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

December 31,	2013	2014	2015	2016	2017	2018
Granite Construction Incorporated	$100.00	$110.26	$126.28	$163.63	$190.53	$122.32
S&P 500	100.00	113.69	115.26	129.05	157.22	150.33
Dow Jones U.S. Heavy Construction	100.00	74.48	65.89	81.29	85.65	63.28

Item 6. Selected Financial Data

Other than contract backlog, the selected consolidated financial data set forth below have been derived from our consolidated financial statements. Refer to the consolidated financial statements for further information. These historical results are not necessarily indicative of the results of operations to be expected for any future period.

SELECTED CONSOLIDATED FINANCIAL DATA

Years Ended December 31,	2018	2017	2016	2015	2014
Operating Summary[1]	*(In Thousands, Except Per Share Data)*				
Revenue[2]	$3,318,414	$2,989,713	$2,514,617	$2,371,029	$2,275,270
Gross profit[2]	389,192	314,933	301,370	299,836	239,741
As a percent of revenue	11.7%	10.5%	12.0%	12.6%	10.5%
Selling, general and administrative expenses	272,776	220,400	217,374	197,814	190,613
As a percent of revenue	8.2%	7.4%	8.6%	8.3%	8.5%
Acquisition and integration expenses[3]	60,045	—	—	—	—
As a percent of revenue	1.8%	—%	—%	—%	—%
Net income	53,741	75,801	66,200	68,248	35,876
Amount attributable to non-controlling interests	(11,331)	(6,703)	(9,078)	(7,763)	(10,530)
Net income attributable to Granite Construction Incorporated[2]	42,410	69,098	57,122	60,485	25,346
As a percent of revenue	1.3%	2.3%	2.3%	2.6%	1.1%
Net income per share attributable to common shareholders:					
Basic	$ 0.97	$ 1.74	$ 1.44	$ 1.54	$ 0.65
Diluted	$ 0.96	$ 1.71	$ 1.42	$ 1.52	$ 0.64
Weighted average shares of common stock:					
Basic	43,564	39,795	39,557	39,337	39,096
Diluted	44,025	40,372	40,225	39,868	39,795
Dividends per common share	$ 0.52	$ 0.52	$ 0.52	$ 0.52	$ 0.52
Consolidated Balance Sheets[1]					
Total assets	$2,476,601	$1,871,978	$1,733,453	$1,626,878	$1,600,048
Cash, cash equivalents and marketable securities	338,904	366,501	317,105	358,531	358,028
Working capital	737,547	576,804	559,058	519,177	454,121
Current maturities of long-term debt	47,286	46,048	14,796	14,800	1,247
Long-term debt	335,119	178,453	229,498	244,323	275,621
Other long-term liabilities	66,006	45,446	51,430	46,613	44,495
Granite shareholders' equity	1,351,633	945,108	885,988	839,237	794,385
Common shares outstanding	46,666	39,871	39,621	39,413	39,186
Contract backlog	$3,689,621	$3,718,157	$3,484,405	$2,908,438	$2,718,873

1 The operating summary for the year ended December 31, 2018 and the consolidated balance sheet as of December 31, 2018 include results, assets acquired and liabilities assumed from the acquisitions of Layne and LiquiForce (see Note 2 of the "Notes to the Consolidated Financial Statements").

2 During the year ended December 31, 2017, we identified and corrected amounts related to revisions in estimates that should have been recorded during the year ended December 31, 2016. These corrections resulted in a $4.9 million decrease to revenue and gross profit and a $1.6 million decrease in net income attributable to Granite Construction Incorporated for the year ended December 31, 2017 (see Note 3 of "Notes to the Consolidated Financial Statements").

3 During the year ended December 31, 2018, we incurred $60.0 million in acquisition and integration costs that were primarily in connection with acquisitions of Layne and LiquiForce. See Note 2 of "Notes to the Consolidated Financial Statements" for further discussion.

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

General

We deliver infrastructure solutions for public and private clients primarily in the United States. We are one of the largest diversified infrastructure companies in the United States. Within the public sector, we primarily concentrate on heavy-civil infrastructure projects, including the construction of streets, roads, highways, mass transit facilities, airport infrastructure, bridges, trenchless and underground utilities, power-related facilities, water-related facilities, utilities, tunnels, dams and other infrastructure-related projects. Within the private sector, we perform site preparation and infrastructure services for residential development, energy development, commercial and industrial sites, and other facilities, as well as provide construction management professional services.

In addition to business segments, we review our business by operating groups. Our operating groups are defined as follows: (i) California; (ii) Northwest, which primarily includes offices in Alaska, Arizona, Nevada, Utah and Washington; (iii) Heavy Civil, which primarily includes offices in California, Florida, New York and Texas; (iv) Federal which primarily includes offices in California, Colorado, Texas and Guam; (v) Midwest (formerly Kenny less the underground business), which primarily includes offices in Illinois and (vi) Water and Mineral Services (which includes LiquiForce, Layne and the underground business of the former Kenny operating group), which primarily includes offices across the United States, Canada and Latin America.

The four primary economic drivers of our business are (i) the overall health of the U.S. economy; (ii) federal, state and local public funding levels; (iii) population growth resulting in public and private development; and (iv) the need to replace or repair aging infrastructure. A stagnant or declining economy will generally result in reduced demand for construction and construction materials in the private sector. This reduced demand increases competition for private sector projects and will ultimately also increase competition in the public sector as companies migrate from bidding on scarce private sector work to projects in the public sector. In addition, a stagnant or declining economy tends to produce less tax revenue for public agencies, thereby decreasing a source of funds available for spending on public infrastructure improvements. Some funding sources that have been specifically earmarked for infrastructure spending, such as diesel and gasoline taxes, are not as directly affected by a stagnant or declining economy, unless actual consumption is reduced or gasoline sales tax revenues decline consistent with fuel prices. However, even these can be temporarily at risk as federal, state and local governments take actions to balance their budgets. Additionally, fuel prices and more fuel efficient vehicles can have a dampening effect on consumption, resulting in overall lower tax revenue. Conversely, increased levels of public funding as well as an expanding or robust economy will generally increase demand for our services and provide opportunities for revenue growth and margin improvement.

Critical Accounting Policies and Estimates

The financial statements included in "Item 8. Financial Statements and Supplementary Data" have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The preparation of these financial statements requires management to make estimates that affect the reported amounts of assets and liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Our estimates and related judgments and assumptions are continually evaluated based on available information and experiences; however, actual amounts could differ from those estimates.

The following are accounting policies and estimates that involve significant management judgment and can have significant effects on the Company's reported results of operations. The Audit/Compliance Committee of our Board of Directors has reviewed our disclosure of critical accounting policies and estimates.

Revenue Recognition

Our revenue is primarily derived from construction contracts that can span several quarters or years and from sales of construction related materials. We recognize revenue in accordance with ASC Topic 606, *Revenue from Contracts with Customers* and subsequently issued additional related ASUs ("Topic 606"). Topic 606 provides for a five-step model for recognizing revenue from contracts with customers as follows:

1. Identify the contract
2. Identify performance obligations
3. Determine the transaction price
4. Allocate the transaction price
5. Recognize revenue

Generally, our contracts contain one performance obligation. Contracts with customers in our Materials segment are typically defined by our customary business practices and are valued at the contractual selling price per unit. Our customary business practices are for the delivery of a separately identifiable good at a point in time which is typically when delivery to the customer occurs. Contracts in our Transportation, Water and Specialty segments may contain multiple distinct promises or multiple contracts within a master agreement (e.g. contracts that cross multiple locations/geographies and task orders), which we review at contract inception to determine if they represent multiple performance obligations or multiple separate contracts. This review consists of determining if promises or groups of promises are distinct within the context of the contract, including whether contracts are physically contiguous, contain task orders, purchase or sales orders, termination clauses and/or elements not related to design and/or build.

The transaction price is the amount of consideration to which we expect to be entitled in exchange for transferring goods and services to the customer. The consideration promised in a contract with customers of our Transportation, Water and Specialty segments may include both fixed amounts and variable amounts (e.g. bonuses/incentives or penalties/liquidated damages) to the extent that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved (i.e., probable and estimable). When a contract has a single performance obligation, the entire transaction price is attributed to that performance obligation. When a contract has more than one performance obligation, the transaction price is allocated to each performance obligation based on estimated relative standalone selling prices of the goods or services at the inception of the contract, which typically is determined using cost plus an appropriate margin.

Subsequent to the inception of a contract in our Transportation, Water and Specialty segments, the transaction price could change for various reasons, including the executed or estimated amount of change orders and unresolved contract modifications and claims to or from owners. Changes that are accounted for as an adjustment to existing performance obligations are allocated on the same basis at contract inception. Otherwise, changes are accounted for as separate performance obligation(s) and the separate transaction price is allocated as discussed above.

Changes are made to the transaction price from unapproved change orders to the extent the amount can be reasonably estimated and recovery is probable.

On certain projects we have submitted and have pending unresolved contract modifications and affirmative claims (“affirmative claims”) to recover additional costs and the associated profit, if applicable, to which the Company believes it is entitled under the terms of contracts with customers, subcontractors, vendors or others. The owners or their authorized representatives and/or other third parties may be in partial or full agreement with the modifications or affirmative claims, or may have rejected or disagree entirely or partially as to such entitlement.

Changes are made to the transaction price from affirmative claims with customers to the extent that additional revenue on a claim settlement with a customer is probable and estimable. A reduction to costs related to affirmative claims with non-customers with whom we have a contractual arrangement (“back charges”) is recognized when the estimated recovery is probable and estimable. Recognizing affirmative claims and back charge recoveries requires significant judgments of certain factors including, but not limited to, dispute resolution developments and outcomes, anticipated negotiation results, and the cost of resolving such matters.

Certain construction contracts include retention provisions to provide assurance to our customers that we will perform in accordance with the contract terms and are not considered a financing benefit. The balances billed but not paid by customers pursuant to these provisions generally become due upon completion and acceptance of the project work or products by the customer. We have determined there are no significant financing components in our contracts during the year ended December 31, 2018.

Typically, performance obligations related to contracts in our Transportation, Water and Specialty segments are satisfied over time because our performance typically creates or enhances an asset that the customer controls as the asset is created or enhanced. We recognize revenue as performance obligations are satisfied and control of the promised good and/or service is transferred to the customer. Revenue in our Transportation, Water and Specialty segments is ordinarily recognized over time as control is transferred to the customers by measuring the progress toward complete satisfaction of the performance obligation(s) using an input (i.e., “cost to cost”) method. Under the cost to cost method, costs incurred to-date are generally the best depiction of transfer of control.

All contract costs, including those associated with affirmative claims, change orders and back charges, are recorded as incurred and revisions to estimated total costs are reflected as soon as the obligation to perform is determined. Contract costs consist of direct costs on contracts, including labor and materials, amounts payable to subcontractors, direct overhead costs and equipment expense (primarily depreciation, fuel, maintenance and repairs).

The accuracy of our revenue and profit recognition in a given period depends on the accuracy of our estimates of the cost to complete each project. Cost estimates for all of our significant projects use a detailed "bottom up" approach, and we believe our experience allows us to create materially reliable estimates. There are a number of factors that can contribute to changes in estimates of contract cost and profitability. The most significant of these include:

- the completeness and accuracy of the original bid;
- costs associated with scope changes;
- changes in costs of labor and/or materials;
- extended overhead and other costs due to owner, weather and other delays;
- subcontractor performance issues;
- changes in productivity expectations;
- site conditions that differ from those assumed in the original bid;
- changes from original design on design-build projects;
- the availability and skill level of workers in the geographic location of the project;
- a change in the availability and proximity of equipment and materials;
- our ability to fully and promptly recover on affirmative claims and back charges for additional contract costs; and
- the customer's ability to properly administer the contract.

The foregoing factors, as well as the stage of completion of contracts in process and the mix of contracts at different margins may cause fluctuations in gross profit and gross profit margin from period to period. Significant changes in cost estimates, particularly in our larger, more complex projects have had, and can in future periods have, a significant effect on our profitability.

All state and federal government contracts and many of our other contracts provide for termination of the contract at the convenience of the party contracting with us, with provisions to pay us for work performed through the date of termination including demobilization cost.

Costs to obtain our contracts ("pre-bid costs") that are not expected to be recovered from the customer are expensed as incurred and included in selling, general and administrative expenses on our consolidated statements of operations. Although unusual, pre-bid costs that are explicitly chargeable to the customer even if the contract is not obtained are included in accounts receivable on our consolidated balance sheets when we are notified that we are not the low bidder with a corresponding reduction to selling, general and administrative expenses on our consolidated statements of operations.

Goodwill

As a result of the change in our reportable segments, we reassessed our reporting units and have determined we have eight reporting units in which goodwill was recorded as follows:

- Midwest Group Transportation
- Midwest Group Specialty
- Northwest Group Transportation
- Northwest Group Materials
- California Group Transportation
- Water and Mineral Services Group Water
- Water and Mineral Services Group Specialty
- Water and Mineral Services Group Materials

We perform our goodwill impairment tests annually as of November 1 and more frequently when events and circumstances occur that indicate a possible impairment of goodwill. Examples of such events or circumstances include, but are not limited to, the following:

- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- a more likely than not expectation that a segment or a significant portion thereof will be sold; or
- the testing for recoverability of a significant asset group within the segment.

In performing the quantitative goodwill impairment tests, we calculate the estimated fair value of the reporting unit in which the goodwill is recorded using the discounted cash flows and market multiple methods. Judgments inherent in these methods include the determination of appropriate discount rates, the amount and timing of expected future cash flows and growth rates, and appropriate benchmark companies. The cash flows used in our 2018 discounted cash flow model were based on five-year financial forecasts, which in turn were based on the 2018-2022 operating plan developed internally by management adjusted for market participant-based assumptions. Our discount rate assumptions are based on an assessment of the equity cost of capital and appropriate capital structure for our reporting units. In assessing the reasonableness of our determined fair values of our reporting units, we evaluate the reasonableness of our results against our current market capitalization.

The estimated fair value is compared to the net book value of the reporting unit, including goodwill. If the fair value of the reporting unit exceeds its net book value, goodwill of the reporting unit is considered not impaired. If the fair value of the reporting unit is less than its net book value, goodwill is impaired and the excess of the reporting unit's net book value over the fair value is recognized as an impairment loss.

During 2018, due to the change in reportable segments, the resulting change to reporting units and in accordance with ASC Topic 350, *Intangibles - Goodwill and Other*, we conducted impairment tests on reporting units that were most susceptible to fluctuations in results. We conducted these tests before the change on the Kenny Large Project Construction and Kenny Construction reporting units and after the change on the Midwest Group Transportation, Midwest Group Specialty and Water and Mineral Services Group Water reporting units. These assessments indicated that the estimated fair values of the reporting units exceeded their net book values.

For our 2018 annual goodwill impairment test, we elected to perform a qualitative analysis and after assessing the totality of events and circumstances, we determined that it is more likely than not that the fair value of these reporting units were greater than the carrying amounts; therefore, a quantitative goodwill impairment test was not performed. Factors we considered were macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, changes in management or key personnel, changes in strategy, changes in customers, changes in the composition or carrying amount of a reporting segments' net assets, and changes in our stock price.

Insurance Estimates

We carry insurance policies to cover various risks, primarily general liability, automobile liability, workers compensation and employee medical expenses under which we are liable to reimburse the insurance company for a portion of each claim paid. Payment for general liability and workers compensation claim amounts generally range from the first $0.5 million to $1.0 million per occurrence. We accrue for probable losses, both reported and unreported, that are reasonably estimable using actuarial methods based on historic trends, modified, if necessary, by recent events. Changes in our loss assumptions caused by changes in actual experience would affect our assessment of the ultimate liability and could have an effect on our operating results and financial position up to $1.0 million per occurrence for general liability and workers compensation or $0.3 million for medical insurance.

Current Economic Environment and Outlook

As America's Infrastructure Company, our growth is focused on continued end-market and geographic diversification. Granite provides solutions to the Transportation, Water, Specialty and Materials end-markets. The Company is well positioned to leverage opportunities in these end markets to drive steady, long-term value creation for Granite's stakeholders.

Public and private market activity and demand remains robust, against a backdrop of dynamic, competitive end markets. Company contract backlog of $3.7 billion continues to reflect steady economic growth. Private market activity remains a key growth and diversification opportunity across our business, and its portion of our portfolio continues to expand in focus and significance. Today, public infrastructure investment is beginning to grow at state, regional, and local levels, and this investment provides our industry with visibility to funding that we have not experienced in more than a decade. This positive, multi-year public-spending demand will benefit our Transportation, Water and Materials segments.

Across end-markets, our focus on bottom-line improvement continues to emphasize managing risks and being compensated appropriately for the complex skills and resources required to build public infrastructure projects, across geographies and across project scope. We are sharply focused on executing work with appropriate returns relative to risks for Granite's stakeholders.

In Transportation, at the National level, the Fixing America's Surface Transportation ("FAST") Act remains a stabilizing force. Increased public investment has grown bottom-up for the past six years at state and local levels, with more than half of U.S. states acting independently to increase maintenance programs and to reinvest in transportation infrastructure. As a result, state and local-led program expansions, coupled with Federal and private-sector stability, are key contributors to the most balanced market activity and visibility to funding that we have seen since the mid-2000s. Importantly, the defeat of California Proposition 6 last November preserved the 10-year, $54.2 billion Senate Bill 1, the Road Repair and Accountability Act of 2017. We believe this critical investment will contribute significantly to improved health, safety and the quality of life for California's citizens and for the traveling public.

In the first half of 2018, we completed the acquisition of Layne, a water and mining infrastructure services and drilling company, as well as LiquiForce, a regional company in Canada and the Midwest providing lateral and mainline pipe lining services in the water and wastewater markets. Strong market and funding dynamics position our legacy and acquired businesses in the newly created Water segment for significant growth. Water market demand remains healthy across geographies as states and municipal water authorities weigh options for overdue water infrastructure investment. At the federal level, Congress recently approved the America's Water Infrastructure Act of 2018, which includes $4.4 billion for the Environmental Protection Agency drinking-water program. This legislation also creates the Water Resources Development Act, which authorizes $3.7 billion of federal funds for a dozen U.S. Army Corps of Engineers flood-protection and other projects.

We are optimistic that Congress and the Administration in 2019 will jointly move forward to create a bipartisan Federal Infrastructure Bill that not only stabilizes the nearly insolvent Highway Trust Fund, but also creates a vision and path forward for the rebuilding the infrastructure of our great country.

Results of Operations

COMPARATIVE FINANCIAL SUMMARY

Years Ended December 31,	2018	2017	2016
(in thousands)			
Total revenue	$3,318,414	$2,989,713	$2,514,617
Gross profit	389,192	314,933	301,370
Selling, general and administrative expenses	272,776	220,400	217,374
Acquisition and integration expenses	60,045	—	—
Operating income	64,043	98,715	92,354
Total other income	(112)	(5,748)	(4,008)
Amount attributable to non-controlling interests	(11,331)	(6,703)	(9,078)
Net income attributable to Granite Construction Incorporated	42,410	69,098	57,122

Revenue

TOTAL REVENUE BY SEGMENT

Years Ended December 31,	2018		2017		2016	
(dollars in thousands)						
Transportation	$1,976,743	59.5%	$1,947,420	65.1%	$1,626,786	64.7%
Water	338,250	10.2	133,699	4.5	161,282	6.4
Specialty	626,619	18.9	615,818	20.6	465,323	18.5
Materials	376,802	11.4	292,776	9.8	261,226	10.4
Total	$3,318,414	100.0%	$2,989,713	100.0%	$2,514,617	100.0%

TRANSPORTATION REVENUE

Years Ended December 31,	2018		2017		2016	
(dollars in thousands)						
Heavy Civil	$ 818,715	41.5%	$ 773,990	39.7%	$ 688,527	42.3%
Northwest	465,085	23.5	611,021	31.4	486,037	29.9
California	607,737	30.7	470,996	24.2	378,838	23.3
Midwest	84,523	4.3	60,007	3.1	68,235	4.2
Federal	683	—	31,406	1.6	5,149	0.3
Total	$1,976,743	100.0%	$1,947,420	100.0%	$1,626,786	100.0%

Transportation revenue in 2018 increased $29.3 million, or 1.5%, compared to 2017 due to entering the year with greater contract backlog in the Heavy Civil, California and Midwest operating groups as well as improved success rate on bidding activity in the California and Midwest groups. The increases were also partially offset by a decrease in the Northwest operating group due to beginning the year with lower contract backlog.

During 2018 and 2017, revenue earned from the public sector was 93.9% and 94.8%, respectively, of the total Transportation segment revenue.

WATER REVENUE

Years Ended December 31,	2018		2017		2016	
(dollars in thousands)						
Water and Mineral Services	$257,620	76.2%	$ 61,964	46.4%	$ 76,388	47.4%
Heavy Civil	19,945	5.9	23,153	17.3	16,279	10.1
California	52,757	15.6	39,071	29.2	40,250	25.0
Northwest	3,882	1.1	623	0.5	9,853	6.1
Midwest	1,930	0.6	7,004	5.2	17,316	10.7
Federal	2,116	0.6	1,884	1.4	1,196	0.7
Total	$338,250	100.0%	$133,699	100.0%	$161,282	100.0%

Water revenue in 2018 increased $204.6 million, or over 100%, compared to 2017 primarily due to increases in the Water and Mineral Services operating group from the Layne and LiquiForce acquisitions. See Note 2 of "Notes to the Consolidated Financial Statements" for further discussion of acquisitions.

During 2018 and 2017, revenue earned from the public sector was 73.9% and 88.6%, respectively, of the total Water segment revenue.

SPECIALTY REVENUE

Years Ended December 31,	2018		2017		2016	
(dollars in thousands)						
Midwest	$223,517	35.6%	$345,147	56.1%	$181,395	38.9%
California	143,471	22.9	160,572	26.1	185,079	39.8
Federal	41,471	6.6	5,196	0.8	4,470	1.0
Northwest	159,517	25.5	104,793	17.0	94,379	20.3
Water and Mineral Services	58,643	9.4	110	—	—	—
Total	$626,619	100.0%	$615,818	100.0%	$465,323	100.0%

Specialty revenue in 2018 increased $10.8 million, or 1.8%, when compared to 2017 due to increases in the Northwest operating group from new awards and in Federal operating group from entering the year with greater contract backlog in addition to an increase in Water and Mineral Services operating group from the acquisitions of Layne and LiquiForce. The increases were partially offset by decreases in the Midwest and California operating groups from beginning the year with lower contract backlog.

During 2018 and 2017, revenue earned from the public sector was 40.8% and 39.2%, respectively, of the total Specialty segment revenue.

MATERIALS REVENUE

Year Ended December 31,	2018		2017		2016	
(dollars in thousands)						
California	$213,673	56.7%	$178,048	60.8%	$148,778	57.0%
Northwest	138,924	36.9	114,728	39.2	112,448	43.0
Water and Mineral Services	24,205	6.4	—	—	—	—
Total	$376,802	100.0%	$292,776	100.0%	$261,226	100.0%

Materials revenue in 2018 increased $84.0 million, or 28.7%, when compared to 2017. In addition to increases in the Water and Mineral services operating group from the acquisition of Layne, increases in the California and Northwest operating groups were due to increases in aggregate and asphalt pricing and volume.

Contract Backlog

Our contract backlog consists of the revenue we expect to record in the future on awarded contracts, including 100% of our consolidated joint venture contracts and our proportionate share of unconsolidated joint venture contracts. We generally include a project in our contract backlog at the time it is awarded and to the extent we believe contract execution and funding is probable. Awarded contracts that include unexercised contract options or unissued task orders are included in contract backlog to the extent option exercise or task order issuance is probable. Substantially all of the contracts in our contract backlog may be canceled or modified at the election of the customer; however, we have not been materially adversely affected by contract cancellations or modifications in the past.

TOTAL CONTRACT BACKLOG BY SEGMENT

December 31,	2018		2017	
(dollars in thousands)				
Transportation	$2,815,124	76.3%	$2,868,542	77.2%
Water	328,883	8.9	145,812	3.9
Specialty	545,614	14.8	703,803	18.9
Total	$3,689,621	100.0%	$3,718,157	100.0%

TRANSPORTATION CONTRACT BACKLOG

(dollars in thousands)	December 31, 2018		January 1, 2018	
Unearned revenue	$2,185,309	77.6%	$2,858,747	99.7%
Other awards[1]	629,815	22.4	9,795	0.3
Total	$2,815,124	100.0%	$2,868,542	100.0%

[1] Other awards include unissued task orders and unexercised contract options to the extent their issuance or exercise is probable as well as contract awards to the extent we believe contract execution and funding is probable.

December 31,	2018		2017	
(dollars in thousands)				
Heavy Civil	$1,944,338	69.1%	$2,200,105	76.7%
Northwest	340,850	12.1	273,864	9.5
California	318,155	11.3	303,673	10.6
Midwest	211,647	7.5	90,584	3.2
Federal	134	—	316	—
Total	$2,815,124	100.0%	$2,868,542	100.0%

Transportation contract backlog of $2.8 billion at December 31, 2018 remained relatively unchanged compared to 2017. Not yet included in our contract backlog is approximately $700 million in project wins that will be added to Transportation segment contract backlog as task orders are approved.

Non-controlling partners' share of Transportation contract backlog as of December 31, 2018 and 2017 was $178.9 million and $206.3 million respectively.

Two contracts in our Transportation segment had forecasted losses with remaining revenue of $27.8 million, or 1.0%, and $21.9 million, or 0.8%, of Transportation contract backlog at December 31, 2018. At December 31, 2017, one contract in our Transportation segment had forecasted losses with remaining revenue of $106.2 million, or 3.7%, of Transportation contract backlog. Provisions are recognized in the consolidated statements of operations for the full amount of estimated losses on uncompleted contracts whenever evidence indicates that the estimated total cost of a contract exceeds its estimated total revenue. Future revisions to these estimated losses will be recorded in the periods in which the revisions are estimated.

WATER CONTRACT BACKLOG

(dollars in thousands)	December 31, 2018		January 1, 2018	
Unearned revenue	$218,708	66.5%	$ 78,406	53.8%
Other awards[1]	110,175	33.5	67,406	46.2
Total	$328,883	100.0%	$145,812	100.0%

[1] Other awards include contract awards to the extent we believe contract execution and funding is probable.

December 31,	2018		2017	
(dollars in thousands)				
Water and Mineral Services	$299,771	91.1%	$ 71,523	49.1%
Heavy Civil	19,758	6.0	38,183	26.2
California	6,162	1.9	27,328	18.7
Northwest	786	0.2	2,606	1.8
Midwest	211	0.1	1,961	1.3
Federal	2,195	0.7	4,211	2.9
Total	$328,883	100.0%	$145,812	100.0%

Water contract backlog of $328.9 million as of December 31, 2018 was $183.1 million, or over 100%, higher than at December 31, 2017 primarily due to increases in the Water and Mineral Services operating group from the Layne and LiquiForce acquisitions.

SPECIALTY CONTRACT BACKLOG

(dollars in thousands)	December 31, 2018		January 1, 2018	
Unearned revenue	$474,016	86.9%	$646,696	91.9%
Other awards[1]	71,598	13.1	57,107	8.1
Total	$545,614	100.0%	$703,803	100.0%

[1] Other awards include contract awards to the extent we believe contract execution and funding is probable.

December 31,	2018		2017	
(dollars in thousands)				
Midwest	$249,968	45.8%	$422,874	60.1%
California	63,019	11.6	79,172	11.2
Federal	149,210	27.3	162,644	23.1
Northwest	83,417	15.3	39,113	5.6
Total	$545,614	100.0%	$703,803	100.0%

Specialty contract backlog of $545.0 million as of December 31, 2018 was $158.8 million, or 22.6%, lower than at December 31, 2017 primarily due to a decrease in the Midwest operating group from progress on existing projects partially offset by an increase in the Northwest operating group from increased awards.

Non-controlling partners' share of Specialty contract backlog as of December 31, 2018 and 2017 was $118.8 million and $176.5 million, respectively.

Gross Profit

The following table presents gross profit by business segment for the respective periods:

Years Ended December 31,	2018	2017	2016
(dollars in thousands)			
Transportation	$190,045	$170,135	$161,829
Percent of segment revenue	*9.6%*	*8.7%*	*9.9%*
Water	59,574	12,270	19,885
Percent of segment revenue	*17.6*	*9.2*	*12.3*
Specialty	90,888	87,446	82,458
Percent of segment revenue	*14.5*	*14.2*	*17.7*
Materials	48,685	45,082	37,198
Percent of segment revenue	*12.9*	*15.4*	*14.2*
Total gross profit	$389,192	$314,933	$301,370
Percent of total revenue	*11.7%*	*10.5%*	*12.0%*

Transportation gross profit for the year ended December 31, 2018 increased by $19.9 million, or 11.7%, when compared to 2017 primarily due to increased revenue volume and margin improvement in our California operating group due to an increase in highway rehabilitation work partially offset by a decline in our Northwest operating group from reduced revenue volume and in our Heavy Civil operating group from a net negative impact from revisions in estimates (see Note 3 of "Notes to the Consolidated Financial Statements" for more information). Transportation gross margin as a percentage of segment revenue for 2018 increased to 9.6% from 8.7% in 2017.

Water gross profit for the year ended December 31, 2018 increased by $47.3 million, or over 100%, when compared to 2017 primarily due to increased revenue volume and margin improvement from the acquisition of Layne and LiquiForce.

Specialty gross profit for the year ended December 31, 2018 increased by $3.4 million, or 3.9%, when compared to 2017. The increases were primarily due to increased revenue volume and margin improvement from the acquisition of Layne partially offset by a decline in our Midwest operating group from reduced revenue volume.

Materials gross profit for the year ended December 31, 2018 increased by $3.6 million, or 8.0%, when compared to 2017 due to increased revenue. Gross profit as a percentage of segment revenue for 2018 decreased to 12.9% from 15.4% when compared to 2017 driven by a decrease in fixed cost absorption and increased material costs at certain asphalt plants.

Selling, General and Administrative Expenses

The following table presents the components of selling, general and administrative expenses for the respective periods:

Years Ended December 31,	2018	2017	2016
(dollars in thousands)			
Selling			
Salaries and related expenses	$ 55,591	$ 45,631	$ 46,015
Incentive compensation	5,177	4,412	2,650
Restricted stock unit amortization	2,655	2,569	1,809
Other selling expenses	13,957	7,688	10,122
Total selling	77,380	60,300	60,596
General and administrative			
Salaries and related expenses	87,631	77,571	71,032
Incentive compensation	8,542	9,402	9,345
Restricted stock unit amortization	10,149	10,996	9,670
Other general and administrative expenses	89,074	62,131	66,731
Total general and administrative	195,396	160,100	156,778
Total selling, general and administrative	$272,776	$220,400	$217,374
Percent of revenue	*8.2%*	*7.4%*	*8.6%*

Selling, General and Administrative Expenses

Selling, general and administrative expenses for 2018 increased $52.4 million, or 23.8%, compared to 2017. Selling, general and administrative expenses as a percentage of revenue increased to 8.2% in 2018 from 7.4% in 2017 primarily due to the addition of Layne and LiquiForce expenses.

Selling, general and administrative expenses include variable cash and restricted stock unit ("RSU") service and performance-based incentives for select management personnel on which our compensation plan heavily relies. See Note 17 of "Notes to the Consolidated Financial Statements" for further discussion.

Selling Expenses

Selling expenses include the costs for estimating and bidding, including customer reimbursements for portions of our selling/bid submission expenses (i.e. stipends), business development and materials facility permits. Selling expenses can vary depending on the volume of projects in process and the number of employees assigned to estimating and bidding activities. As projects are completed or the volume of work slows down, we temporarily redeploy project employees to bid on new projects, moving their salaries and related costs from cost of revenue to selling expenses. Selling expenses for 2018 increased $17.1 million, or 28.3%, compared to 2017, primarily due to the addition of Layne and LiquiForce expenses as well as salaries and related expenses and pre-bid costs from increased bidding activities.

General and Administrative Expenses

General and administrative expenses include costs related to our operational offices that are not allocated to direct contract costs and expenses related to our corporate functions. Other general and administrative expenses include travel and entertainment, outside services, information technology, depreciation, occupancy, training, office supplies, changes in the fair market value of our Non-Qualified Deferred Compensation plan liability and other miscellaneous expenses, none of which individually exceeded 10% of total general and administrative expenses. Total general and administrative expenses for 2018 increased $35.3 million, or 22.0%, compared to 2017 primarily due to increases in other general and administrative expenses primarily from the addition of Layne and LiquiForce as well as an increase in salaries and related expenses from an increase in employee benefits and compensation.

Acquisition and Integration expenses

Year Ended December 31,	2018
(in thousands)	
Professional services and other expenses	$46,898
Severance and personnel costs	13,147
Total	$60,045

These costs were primarily associated with the acquisition and integration of LiquiForce and Layne.

Other (Income) Expense

The following table presents the components of other (income) expense for the respective periods:

Years Ended December 31,	2018	2017	2016
(in thousands)			
Interest income	$ (6,082)	$ (4,742)	$ (3,225)
Interest expense	14,571	10,800	12,366
Equity in income of affiliates	(6,935)	(7,107)	(7,177)
Other income, net	(1,666)	(4,699)	(5,972)
Total other income	$ (112)	$ (5,748)	$ (4,008)

Interest income for 2018 increased $1.3 million when compared to 2017 primarily due to an increase in interest rates associated with our marketable securities and cash equivalents. Interest expense for 2018 increased $3.8 million when compared to 2017 primarily due to recent draws under our revolving credit facility to fund acquisitions of LiquiForce and Layne. Other income, net for 2018 decreased $3.0 million primarily due to changes in the fair market values of our Non-Qualified Deferred Compensation plan assets.

Income Taxes

The following table presents the provision for income taxes for the respective periods:

Years Ended December 31,	2018	2017	2016
(dollars in thousands)			
Provision for income taxes	$10,414	$28,662	$30,162
Effective tax rate	16.2%	27.4%	31.3%

Our tax rate decreased by 11.2% from 27.4% to 16.2% when compared to 2017 primarily due to the impact of the U.S. Tax Cuts and Jobs Act of 2017 ("Tax Reform") enacted in December 2017 and adjustments to provisional amounts, discussed below, which is partially offset by one-time nondeductible acquisition and integration expenses incurred in 2018. The one-time nondeductible acquisition and integration expenses are included in the $4.8 million of nondeductible expenses shown in the reconciliation of the Federal statutory tax rate to our effective tax rate in Note 19 of "Notes to the Consolidated Financial Statements".

On December 22, 2017 Tax Reform was signed into law. As a result of Tax Reform, the U.S. statutory tax rate was lowered from 35% to 21% effective January 1, 2018, a territorial tax system was implemented, and a one-time repatriation tax on deemed repatriated earnings of foreign subsidiaries was imposed, among other changes. ASC Topic 740, *Accounting for Income Taxes*, requires companies to recognize the effect of tax law changes in the period of enactment. ASU 2018-05, *Income Taxes (Topic 740) – Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*, allows a company to record a provisional amount when it does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain tax effects of Tax Reform. The Company recognized the provisional tax impacts of Tax Reform in its consolidated financial statements for the year ended December 31, 2017. The majority of the impacts were related to the revaluation of deferred tax assets and liabilities at December 31, 2017 and the one-time repatriation tax. During the year ended December 31, 2018, within the one-year measurement period ending December 22, 2018, an $8.0 million benefit to the provisional amount was recorded primarily related to the revaluation of deferred tax assets and liabilities including adjustments to two unconsolidated joint ventures based on changes to the tax positions taken by the related consolidating joint venture partners during 2018. The accounting for the income tax effects of Tax Reform is now complete.

Amount Attributable to Non-controlling Interests

The following table presents the income amount attributable to non-controlling interests in consolidated subsidiaries for the respective periods:

Years Ended December 31,	2018	2017	2016
(in thousands)			
Amount attributable to non-controlling interests	$(11,331)	$(6,703)	$(9,078)

The income amount attributable to non-controlling interests represents the non-controlling owners' share of the income or loss of our consolidated construction joint ventures. The increase for 2018 when compared to 2017 was primarily due to income from consolidated construction joint ventures awarded in the third quarter of 2017.

Prior Years

Revenue

Transportation revenue in 2017 increased by $320.6 million, or 19.7%, compared to 2016 primarily due to entering the year with greater contract backlog in the California, Northwest, Heavy Civil and Federal operating groups as well as from an improved success rate on bidding activity in the California and Heavy Civil operating groups. The increases were partially offset by a net negative impact from revisions in estimates in the Heavy Civil operating group and declines in the Midwest operating group due to beginning the period with lower contract backlog.

Water revenue in 2017 decreased by $27.6 million, or 17.1%, compared to 2016 primarily due to decreases in the Water and Mineral Services operating group from the completion of projects in 2016, a decrease in awards in 2017 and from the beginning the period with lower contract backlog in the Midwest and Northwest operating groups.

Specialty revenue in 2017 increased by $150.5 million, or 32.3%, compared to 2016, primarily due to entering the year with greater contract backlog and from an improved success rate on bidding activity on power work in the Midwest and California operating groups partially offset by declines in awards in both operating groups.

Materials revenue in 2017 increased $31.6 million, or 12.1%, compared to 2016 primarily due to net increase in sales volume from improved demand and a net increase in sales prices from an improved market.

Contract Backlog

Transportation contract backlog of $2.8 billion at December 31, 2017 was $366.7 million, or 14.7%, higher than at December 31, 2016. The increase was primarily due an improved success rate of bidding activity in the Heavy Civil operating group.

Water contract backlog of $145.8 million at December 31, 2017 was $68.0 million, or 31.8%, lower than at December 31, 2016 primarily due to the progress and completion of existing projects in the Water and Mineral Services, Heavy Civil and Midwest operating groups partially offset by improved success rate of bidding activity in the California and Northwest operating groups.

Specialty contract backlog of $703.8 million at December 31, 2017 was $64.9 million, or 8.4%, lower than at December 31, 2016 primarily due to the progress and completion of existing projects in the Midwest operating group partially offset by improved success rate of bidding activity in Federal operating group.

Gross Profit

Transportation gross profit in 2017 increased $8.3 million, or 5.1%, compared to 2016. The increases were primarily due to increased revenue volume. Transportation gross margin as a percentage of segment revenue for 2017 decreased to 8.7% from 9.9% in 2016. The decreases were primarily due to a net negative impact from revisions in estimates.

Water gross profit in 2017 decreased $7.6 million, or 38.3%, compared to 2016. Water gross margin as a percentage of segment revenue for 2017 decreased to 9.2% from 12.3% in 2016. The decreases were primarily due to fewer positive revisions in estimates that individually had an impact of less than $1.0 million on gross profit partially offset by higher bid day margins.

Specialty gross profit in 2017 increased $5.0 million, or 6.0%, compared to 2016 primarily due to increased revenue volume. Specialty gross margin as a percentage of segment revenue for 2017 decreased to 14.2% from 17.7% in 2016.

Materials gross profit in 2017 increased $7.9 million, or 21.1%, compared to 2016. Materials gross margin as a percentage of segment revenue for 2017 increased to 15.4% from 14.2% in 2016. The increases were primarily due to an increase in asphalt and aggregate sales volumes as well as an increase in aggregate sales prices.

Selling, General and Administrative Expenses

Selling, general and administrative expenses for 2017 increased $3.0 million, or 1.4%, compared to 2016. Selling expenses for 2017 remained relatively unchanged compared to 2016. Total general and administrative expenses for 2017 increased $3.3 million, or 2.1%, compared to 2016 primarily due to an increase in salaries and related expenses from an increase in employee benefits and compensation. These increases were partially offset by decreases in other general and administrative expenses primarily due to a write-off of capitalized software during 2016.

Other Expense (Income)

Interest income for 2017 increased $1.5 million when compared to 2016 primarily due to an increase in interest rates associated with our marketable securities and cash equivalents. Interest expense for 2017 decreased $1.6 million when compared to 2016 primarily due to a reduction of the principal balance of our 2019 Notes from a payment made in late 2016. Other income, net for 2017 decreased $1.3 million primarily due to changes in the fair market values of our Non-Qualified Deferred Compensation plan assets and a gain associated with a consolidated real estate entity during 2016.

Provision for Income Taxes

Our 2017 tax rate decreased by 3.9% from 31.3% to 27.4% when compared to 2016 primarily due to the revaluation of our deferred tax assets and liabilities as a result of the recently enacted Tax Reform.

Amount Attributable to Non-controlling Interests

The decrease for 2017 when compared to 2016 was primarily due to a decrease in the estimated recovery from back charge claims in 2016 offset by the income from consolidated construction joint ventures awarded in the third quarter of 2016.

Liquidity and Capital Resources

The timing differences between our cash inflows and outflows require us to maintain adequate levels of working capital. We believe our cash and cash equivalents, short-term investments, available borrowing capacity and cash expected to be generated from operations will be sufficient to meet our expected working capital needs, capital expenditures, financial commitments, cash dividend payments, and other liquidity requirements associated with our existing operations for the next twelve months. To provide capital needs to fund growth opportunities, either internal or generated through acquisitions or to pay installments on our 2019 Notes, we maintain a collateralized committed credit facility with an original value of $500.0 million, of which $113.6 million was available at December 31, 2018, and an uncommitted option to increase the facility to $200.0 million subject to the lenders providing the additional commitments. See Note 15 of "Notes to the Consolidated Financial Statements" for definitions and further discussion regarding our 2019 Notes and Credit Agreement. If we experience a prolonged change in our business operating results or make a significant acquisition, we may need additional sources of financing, which, even if available, may be limited by the terms of our existing debt covenants, or may require the amendment of our existing debt agreements. There can be no assurance that sufficient capital will continue to be available in the future or that it will be available on terms acceptable to us.

Our revenue, gross profit and the resulting cash flows can differ significantly from period to period due to a variety of factors, including our projects' progressions toward completion, outstanding contract change orders and affirmative claims and the payment terms of our contracts. While we typically invoice our customers on a monthly basis, our contracts frequently call for retention that is a specified percentage withheld from each payment until the contract is completed and the work accepted by the customer.

The following table presents our cash, cash equivalents and marketable securities, including amounts from our consolidated construction joint ventures ("CCJVs"), as of the respective dates:

December 31,	**2018**	**2017**
(in thousands)		
Cash and cash equivalents excluding CCJVs	$140,839	$139,352
CCJV cash and cash equivalents[1]	131,965	94,359
Total consolidated cash and cash equivalents	272,804	233,711
Short-term and long-term marketable securities[2]	66,100	132,790
Total cash, cash equivalents and marketable securities	$338,904	$366,501

1 The volume and stage of completion of contracts from our CCJVs may cause fluctuations in joint venture cash and cash equivalents between periods. These funds generally are not available for the working capital or other liquidity needs of Granite until distributed.

2 See Note 8 of "Notes to the Consolidated Financial Statements" for the composition of our marketable securities.

Our primary sources of liquidity are cash and cash equivalents, marketable securities and cash generated from operations. We may also from time to time access our credit facility, issue and sell equity, debt or hybrid securities or engage in other capital markets transactions.

Our cash and cash equivalents consisted of deposits and money market funds held with established national financial institutions. Marketable securities consist of U.S. Government and agency obligations and corporate bonds.

Granite's portion of CCJV cash and cash equivalents was $75.5 million and $56.5 million as of December 31, 2018 and 2017, respectively. Excluded from the table above is Granite's portion of unconsolidated construction joint venture cash and cash equivalents of $68.3 million and $91.0 million as of December 31, 2018 and 2017, respectively. The assets of each consolidated and unconsolidated construction joint venture relate solely to that joint venture. The decision to distribute joint venture assets must generally be made jointly by a majority of the members and, accordingly, these assets, including those associated with estimated cost recovery of customer affirmative claims and back charge claims, are generally not available for the working capital needs of Granite until distributed.

Our principal uses of liquidity are paying the costs and expenses associated with our operations, servicing outstanding indebtedness, making capital expenditures and paying dividends on our capital stock. We may also from time to time prepay or repurchase outstanding indebtedness and acquire assets or businesses that are complementary to our operations.

Cash Flows

Years Ended December 31,	**2018**	**2017**	**2016**
(in thousands)			
Net cash provided by (used in):			
Operating activities	$ 86,390	$ 146,195	$ 73,146
Investing activities	(39,598)	(59,186)	(96,390)
Financing activities	(1,874)	(42,624)	(40,266)

As a large infrastructure contractor and construction materials producer, our operating cash flows are subject to seasonal cycles, as well as the cycles associated with winning, performing and closing projects. Additionally, operating cash flows are impacted by the timing related to funding construction joint ventures and the resolution of uncertainties inherent in the complex nature of the work that we perform, including claim and back charge settlements. Our working capital assets result from both public and private sector projects. Customers in the private sector can be slower paying than those in the public sector; however, private sector projects generally have higher gross profit as a percentage of revenue.

Cash provided by operating activities of $86.4 million during 2018 decreased $59.8 million when compared to 2017. The decrease was primarily due to a $110.4 million increase in net contributions to unconsolidated joint ventures and an $8.8 million increase in cash used by working capital partially offset by a $59.4 million increase in net income after adjusting for non-cash items.

Cash used in investing activities of $39.6 million during 2018 represents a $19.6 million decrease when compared to 2017. The change was primarily due to an increase in maturities, net of purchases, of marketable securities and proceeds from the sale of certain non-core assets and the associated liabilities related to the water delivery business within our Water and Mineral Services operating group partially offset by cash used to fund the acquisitions of Layne and LiquiForce and an increase in purchases, net of sales proceeds, of property and equipment (see Capital Expenditures discussion below).

Cash used in financing activities of $1.9 million during 2018 represents a $40.8 million decrease when compared to 2017. The change was primarily due to increase in proceeds, net of principal repayments from debt partially offset by an increase in repurchases of common stock related to shares surrendered to pay taxes for vested restricted stock units as well shares repurchased as part of our Board approved repurchase program and an increase in net distributions to non-controlling partners related to consolidated joint ventures.

Prior Year

Cash provided by operating activities of $146.2 million during 2017 increased $73.0 million when compared to 2016. The increase was primarily due to a $33.8 million increase in net income after adjusting for non-cash items, a $15.5 million increase in net distributions from unconsolidated joint ventures and a $23.8 million increase in cash from working capital. The increase in cash from working capital was due to a $16.9 million increase in cash provided by working capital liabilities and a $6.9 million decrease in cash used in working capital assets. The increase in cash provided by working capital liabilities was primarily due to an increase in cost volume and the decrease in cash used in working capital assets was primarily due to an improvement in accounts receivable collections partially offset by an increase in revenue volume.

Cash used in investing activities of $59.2 million during 2017 represents a $37.2 million decrease from the amount of cash used by investing activities in 2016. The change was primarily due to a decrease in purchases, net of sales proceeds, of property and equipment and an increase in maturities, net of purchases and proceeds, of marketable securities.

Cash used in financing activities of $42.6 million during 2017 represents a $2.4 million increase in cash used when compared to 2016. The change was primarily due to a decrease in proceeds from long term debt and an increase in repurchases of common stock related to shares surrendered to pay taxes for vested restricted stock units partially offset by an increase in net contributions from non-controlling partners related to consolidated joint ventures.

Capital Expenditures

During the year ended December 31, 2018, we had capital expenditures of $111.1 million compared to $67.7 million during 2017. Major capital expenditures are typically for aggregate and asphalt production facilities, aggregate reserves, construction equipment, buildings and leasehold improvements and investments in our information technology systems. The timing and amount of such expenditures can vary based on the progress of planned capital projects, the type and size of construction projects, changes in business outlook and other factors. As part of the Layne acquisition, we acquired $183.0 million in property and equipment. We currently anticipate 2019 capital expenditures to be between $110.0 million and $125.0 million.

Derivatives

We recognize derivative instruments as either assets or liabilities in the consolidated balance sheets at fair value using Level 2 inputs.

In May 2018, we terminated the interest rate swap we entered into in January 2016 due to the amendment and restatement of the Credit Agreement (as defined in the Credit Agreement section of Note 15 to "Notes to the Consolidated Financial Statements"). In May 2018, we entered into two interest rate swaps designated as cash flow hedges with an effective date of May 2018, a combined initial notional amount of $150.0 million and a maturity date in May 2023. The interest rate swaps are designed to convert the interest rate on our term loan from a variable interest rate of LIBOR plus an applicable margin to a fixed rate of 2.76% plus the same applicable margin.

Debt and Contractual Obligations

The following table summarizes our significant obligations outstanding as of December 31, 2018:

		Payments Due by Period			
(in thousands)	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Long-term debt – principal[1]	$ 383,306	$ 47,556	$ 15,000	$ 320,750	$ —
Long-term debt – interest[2]	61,848	16,478	27,101	18,269	—
Operating leases[3]	83,518	20,152	33,695	20,962	8,709
Other purchase obligations[4]	18,514	18,514	—	—	—
Deferred compensation obligations[5]	25,234	6,492	3,394	2,093	13,255
Asset retirement obligations[6]	21,792	4,439	4,769	3,072	9,512
Total	$ 594,212	$ 113,631	$ 83,959	$ 365,146	$ 31,476

1 Debt issuance costs are excluded from the table.

2 Included in the total is $59.4 million in interest related to borrowings under our Credit Agreement, calculated for the term loan using the fixed rate associated with the cash flow hedge of 2.76% plus the applicable margin in effect as of December 31, 2018 and Libor plus the applicable margin for the revolving credit facility. The future interest payments were calculated using the applicable margin in effect as of December 31, 2018 and may differ from actual results. In addition, included in the total is $2.4 million in interest related to borrowings under the 2019 Notes, the terms of which include a 6.11% per annum interest rate. See Note 15 of "Notes to the Consolidated Financial Statements."

3 These obligations represent the minimum rental commitments and minimum royalty requirements under all noncancellable operating leases. See Note 20 of "Notes to the Consolidated Financial Statements."

4 These obligations represent firm purchase commitments for equipment and other goods and services not directly connected with our construction contract backlog which are individually greater than $10,000 and have an expected fulfillment date after December 31, 2018.

5 The timing of expected payment of deferred compensation is based on estimated dates of retirement. Actual dates of retirement could be different and could cause the timing of payments to change.

6 Asset retirement obligations represent reclamation and other related costs associated with our owned and leased quarry properties, the majority of which have an estimated settlement date beyond five years. See Note 12 of "Notes to the Consolidated Financial Statements."

In addition to the significant obligations described above, as of December 31, 2018, we had approximately $19.3 million associated with uncertain tax positions filed on our tax returns which were excluded because we cannot make a reasonably reliable estimate of the timing of potential payments relative to such reserves.

Surety Bonds and Real Estate Mortgages

We are generally required to provide various types of surety bonds that provide an additional measure of security under certain public and private sector contracts. At December 31, 2018, approximately $3.2 billion of our contract backlog was bonded. Performance bonds do not have stated expiration dates; rather, we are generally released from the bonds after the owner accepts the work performed under contract. The ability to maintain bonding capacity to support our current and future level of contracting requires that we maintain cash and working capital balances satisfactory to our sureties.

Our investments in real estate affiliates are subject to mortgage indebtedness. This indebtedness is non-recourse to Granite but is recourse to the real estate entities. The terms of this indebtedness are typically renegotiated to reflect the evolving nature of the real estate projects as they progress through acquisition, entitlement and development. Modification of these terms may include changes in loan-to-value ratios requiring the real estate entity to repay portions of the debt. The debt associated with our unconsolidated real estate ventures is disclosed in Note 10 of "Notes to the Consolidated Financial Statements."

Covenants and Events of Default

Our debt and credit agreements require us to comply with various affirmative, restrictive and financial covenants, including the financial covenants described below. Our failure to comply with any of these covenants, or to pay principal, interest or other amounts when due thereunder, would constitute an event of default under the applicable agreements. Under certain circumstances, the occurrence of an event of default under one of our debt or credit agreements (or the acceleration of the maturity of the indebtedness under one of our agreements) may constitute an event of default under one or more of our other debt or credit agreements. Default under our debt and credit agreements could result in (i) us no longer being entitled to borrow under the agreements; (ii) termination of the agreements; (iii) the requirement that any letters of credit under the agreements be cash collateralized; (iv) acceleration of the maturity of outstanding indebtedness under the agreements and/or (v) foreclosure on any lien securing the obligations under the agreements.

The most significant financial covenants under the terms of our Credit Agreement and related to the note purchase agreement governing our 2019 Notes ("2019 NPA") require the maintenance of a minimum Consolidated Interest Coverage Ratio and a maximum Consolidated Leverage Ratio. In addition, the 2019 NPA requires a minimum Consolidated Tangible Net Worth.

As of December 31, 2018, and pursuant to the definitions in the 2019 NPA, which is more restrictive, our Consolidated Tangible Net Worth was $1.1 billion which exceeded the minimum of $791.4 million and our Consolidated Leverage Ratio was 1.82, which did not exceed the maximum of 3.00. Our Consolidated Interest Coverage Ratio was $14.10, which exceeded the minimum of 4.00.

As of December 31, 2018, we were in compliance with all covenants contained in the Credit Agreement and related to the 2019 Notes. We are not aware of any non-compliance by any of our unconsolidated real estate entities with the covenants contained in their debt agreements.

Share Purchase Program

As announced on April 29, 2016, on April 7, 2016, the Board of Directors authorized us to purchase up to $200.0 million of our common stock at management's discretion, which replaced the former authorization including the amount available. As part of this authorization we have established a plan to facilitate common stock repurchases. During the fourth quarter of 2018, we purchased approximately 252,000 shares at an average price of $39.64 per share for $10.0 million. The specific timing and amount of any future purchases will vary based on market conditions, securities law limitations and other factors.

Recently Issued and Adopted Accounting Pronouncements

See "Note 1 - Summary of Significant Accounting Policies" of "Notes to the Consolidated Financial Statements" under the captions Recently Issued Accounting Pronouncements and Recently Adopted Accounting Pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We maintain an investment portfolio of various holdings, types and maturities. We purchase instruments that meet high credit quality standards, as specified in our investment policy. It also limits the amount of credit exposure to any one issue, issuer or type of instrument. The portfolio and accompanying cash balances are targeted to an average maturity of no more than one year from the date the purchase is settled. On an ongoing basis we monitor credit ratings, financial condition and other factors that could affect the carrying amount of our investment portfolio.

Marketable securities, consisting of U.S. government and agency obligations and corporate bonds, are classified as held-to-maturity and are stated at cost, adjusted for amortization of premiums and discounts to maturity.

Given the short-term nature of certain investments, our investment income is subject to the general level of interest rates in the United States at the time of maturity and reinvestment. We have managed the financial market risks due largely to changes in interest rates primarily by managing the maturities in our investment portfolio.

Financial instruments, which potentially subject us to concentrations of credit risk, consist primarily of cash and cash equivalents, short-term and long-term marketable securities, and accounts receivable. We maintain our cash and cash equivalents and our marketable securities with several financial institutions. We invest with high credit quality financial institutions and, by policy, limit the amount of credit exposure to any one financial institution.

The fair value of our short-term held-to-maturity investment portfolio and related income would not be significantly affected by changes in interest rates since the investment maturities are short. The fair value of our long-term held-to-maturity investment portfolio may be affected by changes in interest rates.

Operating in international markets involves exposure to possible volatile movements in currency exchange rates. Layne's international operations are in Latin America (primarily Mexico) and Canada and LiquiForce has international operations in Canada. Layne's affiliates also operate in Latin America (see Note 11 of "Notes to the Consolidated Financial Statements"). The majority of the customer contracts in Mexico are U.S. dollar-based, reducing the exposure to currency fluctuations. As of December 31, 2018, we do not have any outstanding foreign currency option contracts.

As foreign currency exchange rates change, the impact to our consolidated statements of operations could be significant and may affect year-to-year comparability of operating results. The impact from foreign currency transactions during 2018 was immaterial.

We are exposed to various commodity price risks, including, but not limited to, diesel fuel, natural gas, propane, steel, cement and liquid asphalt arising from transactions that are entered into in the normal course of business. In order to manage or reduce commodity price risk, we monitor the costs of these commodities at the time of bid and price them into our contracts accordingly. Additionally, some of our contracts include commodity price escalation clauses which partially protect us from increasing prices. At times we enter into supply agreements or pre-purchase commodities to secure pricing and may use financial contracts to further manage price risk.

As of December 31, 2018, $40.0 million of senior notes payable were due to a group of institutional holders in one remaining installment in 2019 and bears interest at 6.11% per annum.

As of December 31, 2018, a $146.3 million term loan was outstanding under the Credit Agreement that had a variable interest rate of LIBOR plus an applicable margin, that we converted under a swap arrangement to a fixed rate of 2.76% plus the same applicable margin. The applicable margin is based on certain financial ratios calculated quarterly and can vary in future periods. Each 25 basis point increase in the applicable margin would result in $0.4 million annually in additional interest expense.

As of December 31, 2018, $197.0 million had been drawn and was outstanding under the revolving portion of the Credit Agreement that had an effective interest rate of 4.02% using one-month LIBOR and the applicable margin. We had the option of electing LIBOR or the base rate and we elected to use LIBOR. LIBOR is a variable rate subject to market changes over the life of the loan with no guarantees to fix as forecasted. Each 25 basis point increase in one-month LIBOR or in the applicable margin of the loan would result in an additional $0.5 million of annual interest expense.

See "Liquidity and Capital Resources" section above for further discussion on the senior notes payable and Credit Agreement.

The table below presents principal amounts due by year and related weighted average interest rates for our cash and cash equivalents, held-to-maturity investments and significant debt obligations as of December 31, 2018 (dollars in thousands):

	2019	2020	2021	2022	2023	Thereafter	Total
Assets							
Cash, cash equivalents, held-to-maturity investments	$302,806	$26,098	$10,000	$ —	$ —	$ —	$338,904
Weighted average interest rate	1.99%	1.27%	1.87%	—%	—%	—%	1.94%
Liabilities							
Fixed rate debt							
Senior notes payable	$ 40,000	$ —	$ —	$ —	$ —	$ —	$ 40,000
Interest rate	6.11%	—%	—%	—%	—%	—%	6.11%
Credit Agreement - term loan	$ 7,500	$ 7,500	$ 7,500	$7,500	$ 7,500	$108,750	$146,250
Effective interest rate[1]	4.26%	4.26%	4.26%	4.26%	4.26%	—%	4.26%
Variable rate debt							
Credit Agreement - revolving credit facility[2]	$ —	$ —	$ —	$ —	$197,000	$ —	$197,000
Effective interest rate[3]	—%	—%	—%	—%	4.02%	—%	4.02%

1 The weighted average interest rate was calculated using the fixed rate associated with the cash flow hedge of 2.76% plus the applicable margin in effect as of December 31, 2018 and may differ from actual results.

2 The majority of the balance of Credit Agreement - revolving credit facility was drawn to fund the Layne and LiquiForce acquisitions.

3 The weighted average interest rate was calculated using one-month LIBOR rates and the applicable margin in effect as of December 31, 2018 and may differ from actual results.

The estimated fair value of our cash, cash equivalents and short-term held-to-maturity investments approximates the principal amounts reflected above based on the generally short maturities of these financial instruments. Based on the fixed borrowing rates currently available to us for bank loans with similar terms and average maturities, the fair value of the senior notes payable was approximately $40.5 million and $82.2 million as of as of December 31, 2018 and 2017, respectively. The fair value of the term loan under the Credit Agreement was approximately $147.1 million and $89.9 million as of December 31, 2018 and 2017, respectively. The fair value of the revolving credit facility under the Credit Agreement was approximately $197.9 million and $55.1 million as of December 31, 2018 and 2017, respectively.

Item 8. Financial Statements and Supplementary Data

The following consolidated financial statements of Granite, the supplementary data and the independent registered public accounting firm's report are incorporated by reference from Part IV, Item 15(1) and (2):

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets - At December 31, 2018 and 2017

Consolidated Statements of Operations - Years Ended December 31, 2018, 2017 and 2016

Consolidated Statements of Comprehensive Income - Years Ended December 31, 2018, 2017 and 2016

Consolidated Statements of Shareholders' Equity - Years Ended December 31, 2018, 2017 and 2016

Consolidated Statements of Cash Flows - Years Ended December 31, 2018, 2017 and 2016

Notes to the Consolidated Financial Statements

Quarterly Financial Data (unaudited)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

Not applicable.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management carried out, as of December 31, 2018, with the participation of our Chief Executive Officer and our Chief Financial Officer, an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2018, our disclosure controls and procedures were effective to provide reasonable assurance that material information required to be disclosed by us in reports we file under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms and that information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

During the quarter ended December 31, 2018, there were no changes to our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d -15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, our management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in "Internal Control—Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2018.

The scope of our assessment of the effectiveness of our internal control over financial reporting did not include LiquiForce or Layne as we acquired LiquiForce on April 3, 2018 and Layne on June 14, 2018. LiquiForce and Layne had total assets that were less than 1% and 16.2%, respectively, of consolidated assets as of December 31, 2018 and revenues that were less than 1% and 8.2%, respectively, of consolidated revenue during the year ended December 31, 2018. We excluded LiquiForce and Layne from the scope of our assessment in accordance with the Securities Exchange Commission's guidance that allows a recently acquired business to be omitted from the scope of the assessment for one year from the date of its acquisition.

Independent Registered Public Accounting Firm Report

PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited our consolidated financial statements included in this Annual Report on Form 10-K, has issued a report on the Company's internal control over financial reporting as of December 31, 2018. The report, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018, is included in "Item 15. Exhibits and Financial Statement Schedules" under the heading "Report of Independent Registered Public Accounting Firm."

Item 9B. Other Information

Not Applicable.

PART III

Certain information required by Part III is omitted from this report. We will file our definitive proxy statement for our Annual Meeting of Shareholders to be held on June 6, 2019 (the "Proxy Statement") not later than 120 days after the end of the fiscal year covered by this report, and certain information included therein is incorporated herein by reference.

Item 10. Directors, Executive Officers and Corporate Governance

For information regarding our Directors and compliance with Section 16(a) of the Securities Exchange Act of 1934, we direct you to the sections entitled "Proposal 1 - Election and Ratification of Directors" and "Section 16(a) Beneficial Ownership Reporting Compliance," respectively, in the Proxy Statement. For information regarding our Audit/Compliance Committee and our Audit/Compliance Committee's financial expert, we direct you to the section entitled "Information about the Board of Directors and Corporate Governance - Committees of the Board - Audit/Compliance Committee" in the Proxy Statement. For information regarding our Code of Conduct, we direct you to the section entitled "Information about the Board of Directors and Corporate Governance - Code of Conduct" in the Proxy Statement. Information regarding our executive officers is contained in the section entitled "Executive Officers of the Registrant," in Part I, Item I of this report. This information is incorporated herein by reference.

Item 11. Executive Compensation

For information regarding our Executive Compensation, we direct you to the section captioned "Executive and Director Compensation and Other Matters" in the Proxy Statement. This information is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

This information is located in the sections captioned "Stock Ownership of Certain Beneficial Owners Management" and "Equity Compensation Plan Information" in the Proxy Statement. This information is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence

You will find this information in the sections captioned "Transactions with Related Persons" and "Information about the Board of Directors and Corporate Governance - Director Independence" in the Proxy Statement. This information is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

You will find this information in the section captioned "Independent Registered Public Accountants - Principal Accountant Fees and Services" in the Proxy Statement. This information is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GRANITE CONSTRUCTION INCORPORATED

By: /s/ Jigisha Desai
Jigisha Desai
Senior Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

Date: February 21, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant in the capacities indicated and on the dates indicated.

Signature	Date
/s/ Claes G. Bjork Claes G. Bjork, Chairman of the Board and Director	February 21, 2019
/s/ James H. Roberts James H. Roberts, President, Chief Executive Officer, and Director (Principal Executive Officer)	February 21, 2019
By: /s/ Jigisha Desai Jigisha Desai, Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 21, 2019
/s/ James W. Bradford, Jr. James W. Bradford, Jr., Director	February 21, 2019
/s/ David C. Darnell David C. Darnell, Director	February 21, 2019
/s/ Patricia D. Galloway Patricia D. Galloway, Director	February 21, 2019
/s/ Jeffrey J. Lyash Jeffrey J. Lyash, Director	February 21, 2019
/s/ Alan P. Krusi Alan P. Krusi, Director	February 21, 2019
/s/ David H. Kelsey David H. Kelsey, Director	February 21, 2019
/s/ Celeste B. Mastin Celeste B. Mastin, Director	February 21, 2019
/s/ Michael F. McNally Michael F. McNally, Director	February 21, 2019
/s/ Gaddi H. Vasquez Gaddi H. Vasquez, Director	February 21, 2019

PART IV

Item 15. Exhibits, Financial Statement Schedules

The following documents are filed as part of this report:

1. Financial Statements. The following consolidated financial statements and related documents are filed as part of this report:

Financial Statements	Page
Report of Independent Registered Public Accounting Firm	F-1 to F-2
Consolidated Balance Sheets at December 31, 2018 and 2017	F-3
Consolidated Statements of Operations for the Years Ended December 31, 2018, 2017 and 2016	F-4
Consolidated Statements of Comprehensive Income for the Years Ended December 31, 2018, 2017 and 2016	F-5
Consolidated Statements of Shareholders' Equity for the Years Ended December 31, 2018, 2017 and 2016	F-6
Consolidated Statements of Cash Flows for the Years Ended December 31, 2018, 2017 and 2016	F-7
Notes to the Consolidated Financial Statements	F-8 to F-44
Quarterly Financial Data (unaudited)	F-444

2. Financial Statement Schedules. Schedules are omitted because they are not required or applicable, or the required information is included in the Financial Statements or related notes.

3. Exhibits. The Exhibits listed in the accompanying Exhibit Index are filed or incorporated by reference as part of, or furnished with, this report.

INDEX TO 10-K EXHIBITS

Exhibit No.		Exhibit Description
2.1	*	Agreement and Plan of Merger by and among Granite Construction Incorporated, Layne Christensen Company and Lowercase Merger Sub Incorporated, dated as of February 13, 2018 [Exhibit 2.1 to the Company's Form 8-K filed on February 14, 2018]
2.2	*	Stock Purchase Agreement, dated December 28, 2012, by and between Granite Construction Incorporated and Kenny Industries, Inc. [Exhibit 2.1 to the Company's Form 8-K filed on January 4, 2013]
3.1	*	Certificate of Incorporation of Granite Construction Incorporated, as amended [Exhibit 3.1.b to the Company's Form 10-Q for quarter ended June 30, 2006]
3.2	*	Amended Bylaws of Granite Construction Incorporated [Exhibit 3.1 to the Company's Form 8-K filed on November 15, 2011]
10.1	* **	Key Management Deferred Compensation Plan II, as amended and restated [Exhibit 10.1 to the Company's Form 10-Q for quarter ended March 31, 2010]
10.2	* **	Granite Construction Incorporated Amended and Restated 1999 Equity Incentive Plan as Amended and Restated [Exhibit 10.1 to the Company's Form 10-Q for quarter ended June 30, 2009]
10.2.a	* **	Amendment No. 1 to the Granite Construction Incorporated Amended and Restated 1999 Equity Incentive Plan as Amended and Restated [Exhibit 10.2.a to the Company's Form 10-K for year ended December 31, 2009]
10.7	*	Note Purchase Agreement between Granite Construction Incorporated and Certain Purchasers dated December 12, 2007 [Exhibit 10.1 to the Company's Form 8-K filed January 31, 2008]
10.8	*	First Amendment to the Note Purchase Agreement, dated October 11, 2012, between Granite Construction Incorporated and the holders of the 2019 Notes party thereto. [Exhibit 10.7 to the Company's Form 10-Q for the quarter ended September 30, 2012]
10.9	*	Subsidiary Guaranty Agreement from the Subsidiaries of Granite Construction Incorporated as Guarantors of the Guaranty of Notes and Note Agreement and the Guaranty of Payment and Performance dated December 12, 2007 [Exhibit 10.10 to the Company's Form 10-K for year ended December 31, 2007]
10.11	* **	Form of Amended and Restated Director and Officer Indemnification Agreement [Exhibit 10.10 to the Company's Form 10-K for year ended December 31, 2002]
10.12	* **	Executive Retention and Severance Plan II effective as of March 9, 2011 [Exhibit 10.1 to the Company's Form 10-Q for the quarter ended March 31, 2011]
10.13	* **	Form of Restricted Stock Agreement effective March 2010 [Exhibit 10.18 to the Company's Form 10-K for the year ended December 31, 2010]
10.14	* **	Form of Non-employee Director Stock Option Agreement as amended and effective April 7, 2006 [Exhibit 10.19 to the Company's Form 10-K for the year ended December 31, 2010]
10.15	* **	Form of Restricted Stock Units Agreement effective January 1, 2010 [Exhibit 10.20 to the Company's Form 10-K for the year ended December 31, 2010]
10.16	* **	Form of Non-employee Director Restricted Stock Units Agreement effective January 1, 2010 [Exhibit 10.21 to the Company's Form 10-K for the year ended December 31, 2010]
10.17	* **	Granite Construction Incorporated Annual Incentive Plan effective January 1, 2010, as amended [Exhibit 10.22 to the Company's Form 10-K for the year ended December 31, 2011]
10.18	* **	Amendment No. 2 to the Granite Construction Incorporated Annual Incentive Plan effective January 1, 2012 [Exhibit 10.23 to the Company's Form 10-K for the year ended December 31, 2011]
10.19	* **	Granite Construction Incorporated Long Term Incentive Plan effective January 1, 2010, as amended [Exhibit 10.24 to the Company's Form 10-K for the year ended December 31, 2011]

Exhibit No.		Exhibit Description
10.20	* **	Amendment No. 2 to the Granite Construction Incorporated Long Term Incentive Plan effective January 1, 2012 [Exhibit 10.25 to the Company's Form 10-K for the year ended December 31, 2011]
10.21	* **	Granite Construction Incorporated 2012 Equity Incentive Plan [Exhibit 10.1 to the Company's Form 8-K filed on May 25, 2012]
10.22	* **	Form of Non-Employee Director Restricted Stock Unit Agreement effective May 22, 2012 [Exhibit 10.2 to the Company's Form 8-K filed on May 25, 2012]
10.23	* **	Granite Construction Incorporated NEO LTIP Awards Form of Restricted Stock Unit Agreement (Vesting on Date of Grant) [Exhibit 10.30 to the Company's Form 10-K for the year ended December 31, 2012]
10.24	* **	Granite Construction Incorporated NEO LTIP Awards Form of Restricted Stock Unit Agreement (3 Year Vesting Schedule) [Exhibit 10.31 to the Company's Form 10-K for the year ended December 31, 2012]
10.25	*	Second Amendment to Note Purchase Agreement, dated as of March 3, 2014 [Exhibit 10.32 to the Company's Form 10-K for the year ended December 31, 2013]
10.26	*	Form of Voting Agreement [Exhibit 2.1 to the Company's Form 8-K filed on February 14, 2018]
10.27	*	Third Amendment to Note Purchase Agreement dated April 18, 2018 [Exhibit 10.3 to the Company's Form 10-Q for the quarter ended March 31, 2018]
10.28	*	Third Amended and Restated Credit Agreement, dated May 31, 2018 by and among Granite Construction Incorporated, Granite Construction Company, GILC Incorporated, the lenders party thereto and Bank of America, N.A., as Administrative Agent, Collateral Agent, Swing Line Lender, and L/C Issuer [Exhibit 10.1 to the Company's Form 8-K filed on June 5, 2018]
10.29	*	Third Amended and Restated Guaranty Agreement, dated May 31, 2018, by and among Granite Construction Incorporated, the guarantors party thereto and Bank of America, N.A., as Administrative Agent [Exhibit 10.2 to the Company's Form 8-K filed on June 5, 2018]
21	†	List of Subsidiaries of Granite Construction Incorporated
23.1	†	Consent of PricewaterhouseCoopers LLP
31.1	†	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	†	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32	††	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
95	†	Mine Safety Disclosure
101.INS	†	XBRL Instance Document
101.SCH	†	XBRL Taxonomy Extension Schema
101.CAL	†	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	†	XBRL Taxonomy Extension Definition Linkbase
101.LAB	†	XBRL Taxonomy Extension Label Linkbase
101.PRE	†	XBRL Taxonomy Extension Presentation Linkbase

* Incorporated by reference
** Compensatory plan or management contract
† Filed herewith
†† Furnished herewith

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Granite Construction Incorporated:

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Granite Construction Incorporated and its subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for revenue from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management's Report on Internal Control Over Financial Reporting, management has excluded Layne Christensen Company and LiquiForce from its assessment of internal control over financial reporting as of December 31, 2018, because they were acquired by the Company in purchase business combinations during 2018. We have also excluded Layne Christensen Company and LiquiForce from our audit of internal control over financial reporting. Layne Christensen Company and LiquiForce are wholly-owned subsidiaries whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 16.2% and less than 1% of total assets, respectively, and 8.2% and less than 1% of total revenues, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
San Francisco, California
February 21, 2019

We have served as the Company's auditor since 1982.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Balance Sheets
(dollars in thousands, except share and per share data)

December 31,	2018	2017
ASSETS		
Current assets		
Cash and cash equivalents ($131,965 and $94,359 related to consolidated construction joint ventures (“CCJVs”))	$ 272,804	$ 233,711
Short-term marketable securities	30,002	67,775
Receivables, net ($21,237 and $52,031 related to CCJVs)	473,246	479,791
Contract assets ($19,699 and $0 related to CCJVs)	219,754	—
Costs and estimated earnings in excess of billings ($0 and $1,437 related to CCJVs)	—	103,965
Inventories	88,623	62,497
Equity in construction joint ventures	282,229	247,826
Other current assets ($11,744 and $10,384 related to CCJVs)	48,731	36,513
Total current assets	1,415,389	1,232,078
Property and equipment, net ($34,761 and $38,361 related to CCJVs)	549,688	407,418
Long-term marketable securities	36,098	65,015
Investments in affiliates	84,354	38,469
Goodwill	259,471	53,799
Other noncurrent assets	131,601	75,199
Total assets	$ 2,476,601	$ 1,871,978
LIABILITIES AND EQUITY		
Current liabilities		
Current maturities of long-term debt	$ 47,286	$ 46,048
Accounts payable ($37,086 and $34,795 related to CCJVs)	251,481	237,673
Contract liabilities ($60,288 and $0 related to CCJVs)	105,449	—
Billings in excess of costs and estimated earnings ($0 and $37,701 related to CCJVs)	—	135,146
Accrued expenses and other current liabilities ($2,046 and $2,126 related to CCJVs)	273,626	236,407
Total current liabilities	677,842	655,274
Long-term debt	335,119	178,453
Deferred income taxes, net	4,317	1,361
Other long-term liabilities	61,689	44,085
Commitments and contingencies (Notes 20 and 21)		
Equity		
Preferred stock, $0.01 par value, authorized 3,000,000 shares, none outstanding	—	—
Common stock, $0.01 par value, authorized 150,000,000 shares; issued and outstanding: 46,665,889 shares as of December 31, 2018, and 39,871,314 shares as of December 31, 2017	467	399
Additional paid-in capital	564,559	160,376
Accumulated other comprehensive (loss) income	(749)	634
Retained earnings	787,356	783,699
Total Granite Construction Incorporated shareholders’ equity	1,351,633	945,108
Non-controlling interests	46,001	47,697
Total equity	1,397,634	992,805
Total liabilities and equity	$ 2,476,601	$ 1,871,978

The accompanying notes are an integral part of these consolidated financial statements.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Statements of Operations
(dollars in thousands, except share and per share data)

Years Ended December 31,	2018	2017	2016
Revenue			
Transportation	$ 1,976,743	$ 1,947,420	$ 1,626,786
Water	338,250	133,699	161,282
Specialty	626,619	615,818	465,323
Materials	376,802	292,776	261,226
Total revenue	3,318,414	2,989,713	2,514,617
Cost of revenue			
Transportation	1,786,698	1,777,285	1,464,957
Water	278,676	121,429	141,397
Specialty	535,731	528,372	382,865
Materials	328,117	247,694	224,028
Total cost of revenue	2,929,222	2,674,780	2,213,247
Gross profit	389,192	314,933	301,370
Selling, general and administrative expenses	272,776	220,400	217,374
Acquisition and integration expenses	60,045	—	—
Gain on sales of property and equipment	(7,672)	(4,182)	(8,358)
Operating income	64,043	98,715	92,354
Other (income) expense			
Interest income	(6,082)	(4,742)	(3,225)
Interest expense	14,571	10,800	12,366
Equity in income of affiliates	(6,935)	(7,107)	(7,177)
Other income, net	(1,666)	(4,699)	(5,972)
Total other income	(112)	(5,748)	(4,008)
Income before provision for income taxes	64,155	104,463	96,362
Provision for income taxes	10,414	28,662	30,162
Net income	53,741	75,801	66,200
Amount attributable to non-controlling interests	(11,331)	(6,703)	(9,078)
Net income attributable to Granite Construction Incorporated	$ 42,410	$ 69,098	$ 57,122
Net income per share attributable to common shareholders (See Note 18)			
Basic	$ 0.97	$ 1.74	$ 1.44
Diluted	$ 0.96	$ 1.71	$ 1.42
Weighted average shares of common stock			
Basic	43,564	39,795	39,557
Diluted	44,025	40,372	40,225

The accompanying notes are an integral part of these consolidated financial statements.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Statements of Comprehensive Income
(in thousands)

Years Ended December 31,	**2018**	**2017**	**2016**
Net income	$ 53,741	$75,801	$66,200
Other comprehensive (loss) income, net of tax:			
Net unrealized (loss) gain on derivatives	$ (451)	$ 191	$ 184
Less: reclassification for net (gains) losses included in interest expense	(214)	159	319
Net change	$ (665)	$ 350	$ 503
Foreign currency translation adjustments, net	(718)	655	626
Other comprehensive (loss) income	$ (1,383)	$ 1,005	$ 1,129
Comprehensive income	$ 52,358	$76,806	$67,329
Non-controlling interests in comprehensive income	(11,331)	(6,703)	(9,078)
Comprehensive income attributable to Granite Construction Incorporated	$ 41,027	$70,103	$58,251

The accompanying notes are an integral part of these consolidated financial statements.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Statements of Shareholders' Equity
(in thousands, except share data)

	Outstanding Shares	Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Retained Earnings	Total Granite Shareholders' Equity	Non-controlling Interests	Total Equity
Balances at December 31, 2015	39,412,877	$394	$140,912	$(1,500)	$699,431	$ 839,237	$ 30,884	$ 870,121
Net income	—	—	—	—	57,122	57,122	9,078	66,200
Other comprehensive income	—	—	—	1,129	—	1,129	—	1,129
Restricted stock units ("RSUs") vested	308,619	3	—	—	—	3	—	3
Amortized RSUs	—	—	13,383	—	—	13,383	—	13,383
Common stock purchased for employee tax withholding for vested RSUs	(116,355)	(1)	(5,226)	—	—	(5,227)	—	(5,227)
Dividends on common stock ($0.52 per share)	—	—	—	—	(20,590)	(20,590)	—	(20,590)
Transactions with non-controlling interests, net	—	—	—	—	—	—	(3,359)	(3,359)
Employee Stock Purchase Plan ("ESPP") and other	15,999	—	1,268	—	(337)	931	—	931
Balances at December 31, 2016	39,621,140	396	150,337	(371)	735,626	885,988	36,603	922,591
Net income	—	—	—	—	69,098	69,098	6,703	75,801
Other comprehensive income	—	—	—	1,005	—	1,005	—	1,005
RSUs vested	375,100	4	—	—	—	4	—	4
Amortized RSUs	—	—	15,764	—	—	15,764	—	15,764
Common stock purchased for employee tax withholding for vested RSUs	(140,070)	(1)	(6,976)	—	—	(6,977)	—	(6,977)
Dividends on common stock ($0.52 per share)	—	—	—	—	(20,720)	(20,720)	—	(20,720)
Transactions with non-controlling interests, net	—	—	—	—	—	—	4,391	4,391
ESPP and other	15,144	—	1,251	—	(305)	946	—	946
Balances at December 31, 2017	39,871,314	399	160,376	634	783,699	945,108	47,697	992,805
Net income	—	—	—	—	42,410	42,410	11,331	53,741
Other comprehensive income	—	—	—	(1,383)	—	(1,383)	—	(1,383)
RSUs vested	315,151	3	—	—	—	3	—	3
Amortized RSUs	—	—	14,784	—	—	14,784	—	14,784
Common stock purchased for employee tax withholding for vested RSUs	(112,476)	(1)	(6,563)	—	—	(6,564)	—	(6,564)
Shares repurchased and retired	(252,072)	(2)	(9,991)	—	—	(9,993)	—	(9,993)
Dividends on common stock ($0.52 per share)	—	—	—	—	(23,309)	(23,309)	—	(23,309)
Effect of change in accounting principle (See Note 1)	—	—	—	—	(15,201)	(15,201)	—	(15,201)
Issuance of common stock for Layne acquisition (See Note 2)	5,624,021	56	321,019	—	—	321,075	48	321,123
Issuance of common stock for 8.0% Convertible Notes (See Note 15)	1,202,134	12	53,011	—	—	53,023	—	53,023
Premium on 8.0% Convertible Notes	—	—	30,702	—	—	30,702	—	30,702
Transactions with non-controlling interests, net	—	—	—	—	—	—	(13,075)	(13,075)
ESPP and other	17,817	—	1,221	—	(243)	978	—	978
Balances at December 31, 2018	46,665,889	$467	$564,559	$ (749)	$787,356	$1,351,633	$ 46,001	$1,397,634

The accompanying notes are an integral part of these consolidated financial statements.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Statements of Cash Flows
(in thousands)

Years Ended December 31,	2018	2017	2016
Operating activities			
Net income	$ 53,741	$ 75,801	$ 66,200
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, depletion and amortization	111,544	66,345	64,375
Gain on sales of property, equipment and business, net	(4,910)	(4,182)	(8,358)
Change in deferred income taxes	20,010	(4,824)	9,842
Stock-based compensation	14,784	15,764	13,383
Equity in net loss from unconsolidated joint ventures	22,688	14,634	(15,614)
Net income from affiliates	(6,935)	(7,107)	(7,177)
Other non-cash adjustments	4,916	—	—
Changes in assets and liabilities, net of the effects of acquisitions and sale of business in 2018:			
Receivables	(4,584)	(60,272)	(75,756)
Costs and estimated earnings in excess of billings, net	—	(26,066)	2,100
Contract assets, net	(17,770)	—	—
Inventories	(2,120)	(7,252)	308
Contributions to unconsolidated construction joint ventures	(104,333)	(16,937)	(11,795)
Distributions from unconsolidated construction joint ventures	16,922	39,955	19,344
Other assets, net	21,598	12,272	(14,873)
Accounts payable	(26,732)	36,716	37,731
Accrued expenses and other current liabilities, net	(12,429)	11,348	(6,564)
Net cash provided by operating activities	86,390	146,195	73,146
Investing activities			
Purchases of marketable securities	(9,952)	(124,543)	(129,685)
Maturities of marketable securities	75,000	120,000	50,000
Proceeds from called marketable securities	—	—	55,000
Purchases of property and equipment	(111,101)	(67,695)	(90,970)
Proceeds from sales of property and equipment	16,238	10,202	12,946
Cash paid to purchase businesses, net of cash and restricted cash acquired	(55,027)	—	—
Proceeds from the sale of a business	47,812	—	—
Other investing activities, net	(2,568)	2,850	6,319
Net cash used in investing activities	(39,598)	(59,186)	(96,390)
Financing activities			
Proceeds from debt	203,250	25,000	30,000
Debt principal repayments	(153,924)	(45,000)	(45,025)
Cash dividends paid	(22,424)	(20,687)	(20,563)
Repurchases of common stock	(16,557)	(6,977)	(5,227)
Contributions from non-controlling partners	200	11,500	5,250
Distributions to non-controlling partners	(13,275)	(7,109)	(5,258)
Other financing activities, net	856	649	557
Net cash used in financing activities	(1,874)	(42,624)	(40,266)
Net increase in cash, cash equivalents and restricted cash	44,918	44,385	(63,510)
Cash and cash equivalents and restricted cash of $0 at beginning of each period	233,711	189,326	252,836
Cash, cash equivalents and restricted cash of $5,825, $0 and $0 at end of period	$ 278,629	$ 233,711	$ 189,326

The accompanying notes are an integral part of these consolidated financial statements.

GRANITE CONSTRUCTION INCORPORATED
Consolidated Statements of Cash Flows (Continued)
(in thousands)

Years Ended December 31,	2018	2017	2016
Supplementary Information			
Cash paid during the period for:			
Interest	$ 14,864	$ 11,446	$ 13,392
Income taxes	19,069	33,948	29,872
Other non-cash operating activities:			
Performance guarantees	$ —	$ 5,497	$ 17,596
Non-cash investing and financing activities:			
Common stock issued in acquisition	$ 321,019	$ —	$ —
Common stock issued in conversion of 8% Convertible Notes	53,086	—	—
Premium on 8.0% Convertible Notes	30,702	—	—
Restricted stock units issued, net of forfeitures (See Note 17)	13,728	11,505	21,101
Accrued cash dividends	6,068	5,183	5,151

The accompanying notes are an integral part of these consolidated financial statements.

1. Summary of Significant Accounting Policies

Description of Business

Granite Construction Incorporated is one of the largest diversified infrastructure companies in the United States, engaged in the construction and improvement of streets, roads, highways, mass transit facilities, airport infrastructure, bridges, trenchless and underground utilities, power-related facilities, water-related facilities, utilities, tunnels, dams and other infrastructure-related projects. We have permanent offices located in Alaska, Arizona, California, Canada, Colorado, Florida, Guam, Illinois, Latin America, Nevada, New York, Texas, Utah and Washington. Unless otherwise indicated, the terms "we," "us," "our," "Company" and "Granite" refer to Granite Construction Incorporated and its wholly owned and consolidated subsidiaries.

Recent Developments

During 2018, we revised our reportable segments, which are the same as our operating segments, as a result of a change in how our chief operating decision maker (our Chief Executive Officer) regularly reviews financial information to allocate resources and assess performance. This change is consistent with our strategic, end-market diversification strategy. Our new reportable segments which correspond to this end-market focus are: Transportation, Water, Specialty and Materials. The Transportation, Water and Specialty end-market segments replace the Construction and Large Project Construction reportable segments with the composition of our Materials segment remaining unchanged except for the addition of proprietary sanitary and storm water rehabilitation products including cured-in-place pipe felt and fiberglass-based lining tubes related to the acquisition of Layne Christensen Company ("Layne"). Prior-year information has been recast to reflect this change. See Note 22 for further information regarding our reportable segments.

In addition, on April 3, 2018, we acquired LiquiForce and on June 14, 2018, we completed the acquisition of Layne. See Note 2 for further information.

Principles of Consolidation

The consolidated financial statements include the accounts of Granite Construction Incorporated and its wholly owned and consolidated subsidiaries. All material inter-company transactions and accounts have been eliminated. Additionally, we participate in various joint ventures ("joint ventures"). We consolidate these joint ventures where we have determined that through our participation we have a variable interest and are the primary beneficiary as defined by Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 810, *Consolidation*, and related standards. The factors we use to determine the primary beneficiary of a variable interest entity ("VIE") may include the decision authority of each partner, which partner manages the day-to-day operations of the project and the amount of our equity investment in relation to that of our partners. Although not applicable for any of the years presented, if we determine that the power to direct the significant activities is shared equally by two or more joint venture parties, then there is no primary beneficiary and no party consolidates the VIE.

Where we have determined we are not the primary beneficiary of a joint venture but do exercise significant influence, we account for our share of the operations of unconsolidated construction joint ventures on a pro rata basis in revenue and cost of revenue in the consolidated statements of operations and in equity in construction joint ventures in the consolidated balance sheets. Our investment in unconsolidated construction joint ventures could extend beyond one year and is within the normal operating cycle of the associated construction projects. We account for non-construction unconsolidated joint ventures under the equity method of accounting in accordance with ASC Topic 323, *Investments - Equity Method and Joint Ventures* and include our share of the operations in equity in income from affiliates in the consolidated statements of operations and in investment in affiliates in the consolidated balance sheets.

Use of Estimates in the Preparation of Financial Statements

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The preparation of these financial statements requires management to make estimates that affect the reported amounts of assets and liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Our estimates and related judgments and assumptions are continually evaluated based on available information and experiences; however, actual amounts could differ from those estimates.

Revenue Recognition

Our revenue is primarily derived from construction contracts that can span several quarters or years and from sales of construction related materials. We recognize revenue in accordance with ASC Topic 606, *Revenue from Contracts with Customers* and subsequently issued additional related ASUs ("Topic 606"). Topic 606 provides for a five-step model for recognizing revenue from contracts with customers as follows:

1. Identify the contract
2. Identify performance obligations
3. Determine the transaction price
4. Allocate the transaction price
5. Recognize revenue

Generally, our contracts contain one performance obligation. Contracts with customers in our Materials segment are typically defined by our customary business practices and are valued at the contractual selling price per unit. Our customary business practices are for the delivery of a separately identifiable good at a point in time which is typically when delivery to the customer occurs. Contracts in our Transportation, Water and Specialty segments may contain multiple distinct promises or multiple contracts within a master agreement (e.g. contracts that cross multiple locations/geographies and task orders), which we review at contract inception to determine if they represent multiple performance obligations or multiple separate contracts. This review consists of determining if promises or groups of promises are distinct within the context of the contract, including whether contracts are physically contiguous, contain task orders, purchase or sales orders, termination clauses and/or elements not related to design and/or build.

The transaction price is the amount of consideration to which we expect to be entitled in exchange for transferring goods and services to the customer. The consideration promised in a contract with customers of our Transportation, Water and Specialty segments may include both fixed amounts and variable amounts (e.g. bonuses/incentives or penalties/liquidated damages) to the extent that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved (i.e., probable and estimable). When a contract has a single performance obligation, the entire transaction price is attributed to that performance obligation. When a contract has more than one performance obligation, the transaction price is allocated to each performance obligation based on estimated relative standalone selling prices of the goods or services at the inception of the contract, which typically is determined using cost plus an appropriate margin.

Subsequent to the inception of a contract in our Transportation, Water and Specialty segments, the transaction price could change for various reasons, including the executed or estimated amount of change orders and unresolved contract modifications and claims to or from owners. Changes that are accounted for as an adjustment to existing performance obligations are allocated on the same basis at contract inception. Otherwise, changes are accounted for as separate performance obligation(s) and the separate transaction price is allocated as discussed above.

Changes are made to the transaction price from unapproved change orders to the extent the amount can be reasonably estimated and recovery is probable.

On certain projects we have submitted and have pending unresolved contract modifications and affirmative claims ("affirmative claims") to recover additional costs and the associated profit, if applicable, to which the Company believes it is entitled under the terms of contracts with customers, subcontractors, vendors or others. The owners or their authorized representatives and/or other third parties may be in partial or full agreement with the modifications or affirmative claims, or may have rejected or disagree entirely or partially as to such entitlement.

Changes are made to the transaction price from affirmative claims with customers to the extent that additional revenue on a claim settlement with a customer is probable and estimable. A reduction to costs related to affirmative claims with non-customers with whom we have a contractual arrangement ("back charges") is recognized when the recovery is probable and estimable. Recognizing affirmative claims and back charge recoveries requires significant judgments of certain factors including, but not limited to, dispute resolution developments and outcomes, anticipated negotiation results, and the cost of resolving such matters.

Certain construction contracts include retention provisions to provide assurance to our customers that we will perform in accordance with the contract terms and are not considered a financing benefit. The balances billed but not paid by customers pursuant to these provisions generally become due upon completion and acceptance of the project work or products by the customer. We have determined there are no significant financing components in our contracts during the year ended December 31, 2018.

Typically, performance obligations related to contracts in our Transportation, Water and Specialty segments are satisfied over time because our performance typically creates or enhances an asset that the customer controls as the asset is created or enhanced. We recognize revenue as performance obligations are satisfied and control of the promised good and/or service is transferred to the customer. Revenue in our Transportation, Water and Specialty segments is ordinarily recognized over time as control is transferred to the customers by measuring the progress toward complete satisfaction of the performance obligation(s) using an input (i.e., "cost to cost") method. Under the cost to cost method, costs incurred to-date are generally the best depiction of transfer of control.

All contract costs, including those associated with affirmative claims, change orders and back charges, are recorded as incurred and revisions to estimated total costs are reflected as soon as the obligation to perform is determined. Contract costs consist of direct costs on contracts, including labor and materials, amounts payable to subcontractors, direct overhead costs and equipment expense (primarily depreciation, fuel, maintenance and repairs).

The accuracy of our revenue and profit recognition in a given period depends on the accuracy of our estimates of the cost to complete each project. Cost estimates for all of our significant projects use a detailed "bottom up" approach, and we believe our experience allows us to create materially reliable estimates. There are a number of factors that can contribute to changes in estimates of contract cost and profitability. The most significant of these include:

- the completeness and accuracy of the original bid;
- costs associated with scope changes;
- changes in costs of labor and/or materials;
- extended overhead and other costs due to owner, weather and other delays;
- subcontractor performance issues;
- changes in productivity expectations;
- site conditions that differ from those assumed in the original bid;
- changes from original design on design-build projects;
- the availability and skill level of workers in the geographic location of the project;
- a change in the availability and proximity of equipment and materials;
- our ability to fully and promptly recover on affirmative claims and back charges for additional contract costs; and
- the customer's ability to properly administer the contract.

The foregoing factors, as well as the stage of completion of contracts in process and the mix of contracts at different margins may cause fluctuations in gross profit and gross profit margin from period to period. Significant changes in cost estimates, particularly in our larger, more complex projects have had, and can in future periods have, a significant effect on our profitability.

All state and federal government contracts and many of our other contracts provide for termination of the contract at the convenience of the party contracting with us, with provisions to pay us for work performed through the date of termination including demobilization cost.

Costs to obtain our contracts ("pre-bid costs") that are not expected to be recovered from the customer are expensed as incurred and included in selling, general and administrative expenses on our consolidated statements of operations. Although unusual, pre-bid costs that are explicitly chargeable to the customer even if the contract is not obtained are included in accounts receivable on our consolidated balance sheets when we are notified that we are not the low bidder with a corresponding reduction to selling, general and administrative expenses on our consolidated statements of operations.

Unearned Revenue

Unearned revenue represents the aggregate amount of the transaction price allocated to unsatisfied or partially unsatisfied performance obligations at the end of a reporting period. We generally include a project in our unearned revenue at the time a contract is awarded, the contract has been executed and to the extent we believe funding is probable. Certain contracts contain contract options that are exercisable at the option of our customers without requiring us to go through an additional competitive bidding process or contain task orders related to master contracts under which we perform work only when the customer awards specific task orders to us. Contract options and task orders are included in unearned revenue when exercised or issued, respectively.

Substantially all of the contracts in our unearned revenue may be canceled or modified at the election of the customer; however, we have not been materially adversely affected by contract cancellations or modifications in the past. Many projects are added to unearned revenue and completed within the same fiscal quarter or year and, therefore, may not be reflected in our beginning or ending unearned revenue. Approximately $1.9 billion of the December 31, 2018 unearned revenue is expected to be recognized within the next twelve months and the remaining amount will be recognized thereafter. Unearned revenue is presented by reportable segment and operating group in Note 5.

Costs to mobilize equipment and labor to a job site prior to substantive work beginning ("mobilization costs") are capitalized as incurred and amortized over the expected duration of the contract. As of December 31, 2018 and January 1, 2018, we had no material capitalized mobilization costs.

Balance Sheet Classifications

Prepaid expenses and amounts receivable and payable under construction contracts (principally retentions) that may exist over the duration of the contract and could extend beyond one year are included in current assets and liabilities. A one-year time period is used as the basis for classifying all other current assets and liabilities.

Cash, Cash Equivalents and Restricted Cash

Cash equivalents are securities having maturities of three months or less from the date of purchase. Included in cash and cash equivalents in the consolidated balance sheets as of December 31, 2018 and 2017, was $132.0 million and $94.4 million, respectively, related to CCJVs. Our access to joint venture cash may be limited by the provisions of the joint venture agreements.

In connection with the acquisition of Layne, we acquired restricted cash that consists of escrow funds and judicial deposits associated with tax related legal proceedings in Latin America. Of the total balance, $4.3 million is included in other current assets and the remainder is included in other noncurrent assets in the consolidated balance sheets. The table below presents changes in cash, cash equivalents and restricted cash on the consolidated statements of cash flows and a reconciliation to the amounts reported in the consolidated balance sheets (in thousands).

Years Ended December 31,	2018	2017	2016
Cash and cash equivalents, beginning of period	$233,711	$189,326	$252,836
End of the period			
Cash and cash equivalents	272,804	233,711	189,326
Restricted cash	5,825	—	—
Total cash, cash equivalents and restricted cash, end of period	278,629	233,711	189,326
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 44,918	$ 44,385	$ (63,510)

Contract Assets

Our contract assets include amounts due under contractual retainage provisions as well as costs and estimated earnings in excess of billings. Costs and estimated earnings in excess of billings also represent amounts earned and reimbursable under contracts, including customer affirmative claim recovery estimates, but have a conditional right for billing and payment such as achievement of milestones or completion of the project. With the exception of customer affirmative claims, generally, such unbilled amounts will become billable according to the contract terms and generally will be billed and collected over the next twelve months. Settlement with the customer of outstanding affirmative claims is dependent on the claims resolution process and could extend beyond one year. Based on our historical experience, we generally consider the collection risk related to billable amounts to be low. When events or conditions indicate that it is probable that the amounts outstanding become unbillable, the transaction price and associated contract asset is reduced.

Marketable Securities

We determine the classification of our marketable securities at the time of purchase and re-evaluate these determinations at each balance sheet date. Our marketable securities are fixed income marketable securities and are classified as held-to-maturity as we have the positive intent and ability to hold the securities to maturity. Held-to-maturity investments are stated at amortized cost and are periodically assessed for other-than-temporary impairment. Amortized cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity, and is included in interest income. The cost of securities redeemed or called is based on the specific identification method.

Derivative Instruments

We recognize derivative instruments as either assets or liabilities in the consolidated balance sheets at fair value using Level 2 inputs. To receive hedge accounting treatment, derivative instruments that are designated as cash flow hedges must be highly effective in offsetting changes to expected future cash flows on hedged transactions. The effective portion of the gain or loss on cash flow hedges is reported as a component of accumulated other comprehensive income (loss) and subsequently reclassified to interest expense in the consolidated statements of operations when the periodic hedged cash flows are settled. Adjustments to fair value on derivative instruments that do not qualify for hedge accounting treatment are reported through other income, net in the consolidated statements of operations. We do not enter into derivative instruments for speculative or trading purposes.

Fair Value of Financial Assets and Liabilities

We measure and disclose certain financial assets and liabilities at fair value. ASC Topic 820, *Fair Value Measurements and Disclosures,* defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC Topic 820 also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard describes three levels of inputs that may be used to measure fair value:

Level 1 - Quoted prices in active markets for identical assets or liabilities.

Level 2 - Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 - Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

We utilize the active market approach to measure fair value for our financial assets and liabilities. We report separately each class of assets and liabilities measured at fair value on a recurring basis and include assets and liabilities that are disclosed but not recorded at fair value in the fair value hierarchy.

The carrying value of marketable securities approximates their fair value as determined by market quotes. Rates currently available to us for debt with similar terms and remaining maturities are used to estimate the fair value of existing debt. The carrying value of receivables and other amounts arising out of normal contract activities, including retentions, which may be settled beyond one year, is estimated to approximate fair value.

Concentrations of Credit Risk and Other Risks

Financial instruments, which potentially subject us to concentrations of credit risk, consist primarily of cash and cash equivalents, short-term and long-term marketable securities, and accounts receivable. We maintain our cash and cash equivalents and our marketable securities with several financial institutions. We invest with high credit quality financial institutions and, by policy, limit the amount of credit exposure to any one financial institution.

Our receivables are from customers concentrated in the United States and we had $7.1 million receivables from foreign operations as of December 31, 2018. Receivables from foreign operations were immaterial as of December 31, 2017. We perform ongoing credit evaluations of our customers and generally do not require collateral, although the law provides us the ability to file mechanics' liens on real property improved for private customers in the event of non-payment by such customers. We maintain an allowance for doubtful accounts which has historically been within management's estimates.

Foreign Currency Transactions and Translation

Through the acquisitions of Layne and LiquiForce, we now have operations in Latin America (primarily Mexico) and Canada which involve exposure to possible volatile movements in foreign currency exchange rates. We account for foreign currency exchange transactions and translation in accordance with ASC Topic 830, *Foreign Currency Matters.* In Mexico, most of our customer contracts and a significant portion of our costs are denominated in U.S. dollars; therefore, the functional currency is U.S. dollars. In Canada and Brazil, the functional currency is the local currency. Foreign currency transactions are translated into the functional currency with gains and losses included in other income, net in the consolidated statements of operations. The impact from foreign currency transactions was immaterial for 2018. Assets and liabilities in functional currency are translated into U.S. dollars at exchange rates prevailing at the balance sheet date. Revenues and expenses are translated into U.S. dollars at average foreign currency exchange rates prevailing during the reporting periods. The translation adjustments from functional currency to U.S. dollars are reported in accumulated other comprehensive (loss) income on the consolidated balance sheets.

Inventories

Inventories consist primarily of quarry products, contract-specific materials, water well drilling materials, and sewer remediation materials that are located in the U.S. and mineral extraction and drilling supplies located in the U.S. and Latin America. Cost of inventories are valued at the lower of average cost or net realizable value. We reserve quarry products based on estimated quantities of materials on hand in excess of approximately one year of demand. As of December 31, 2018, inventory included $13.4 million of supplies related to the Water and Mineral Services operating group.

Assets Held for Sale

During the three months ended September 30, 2018, management approved the plan to sell certain non-core assets and the associated liabilities related to the water delivery business within our Water and Mineral Services operating group. The sale of the assets was completed during the fourth quarter of 2018.

Investments in Affiliates

Each investment accounted for under the equity method of accounting is reviewed for impairment in accordance with ASC Topic 323, *Investments - Equity Method and Joint Ventures.* Our investments in affiliates include foreign entities, real estate entities and an asphalt terminal entity. These investments are evaluated for impairment using the other-than-temporary impairment model, which requires an impairment charge to be recognized if our investment's carrying amount exceeds its fair value, and the decline in fair value is deemed to be other than temporary. Recoverability is measured by comparison of net book values to future undiscounted cash flows the investments are expected to generate. Events or changes in circumstances, which would cause us to review undiscounted future cash flows include, but are not limited to:

- significant adverse changes in legal factors or the business climate; and
- current period cash flow or operating losses combined with a history of losses, or a forecast of continuing losses associated with the use of the asset.

In addition, events or changes in circumstances specifically related to our real estate entities, include:

- significant decreases in the market price of the asset;
- accumulation of costs significantly in excess of the amount originally expected for the acquisition, development or construction of the asset; and
- significant changes to the development or business plans of a project.

Future undiscounted cash flows and fair value assessments for our foreign entities and the asphalt terminal entity are estimated based on market conditions and the political climate. Future undiscounted cash flows and fair value assessments for our real estate entities are estimated based on entitlement status, market conditions, and cost of construction, debt load, development schedules, status of joint venture partners and other factors applicable to the specific project. Fair value is estimated based on the expected future cash flows attributable to the asset or group of assets and on other assumptions that market participants would use in determining fair value, such as market discount rates, transaction prices for other comparable assets, and other market data. Our estimates of cash flows may differ from actual cash flows due to, among other things, fluctuations in interest rates, decisions made by jurisdictional agencies, economic conditions, or changes to our business operations.

Property and Equipment

Property and equipment are stated at cost. Depreciation for construction and other equipment is primarily provided using accelerated methods over lives ranging from eighteen months to seven years, and the straight-line method over lives from three to twenty years for the remaining depreciable assets. We believe that accelerated methods best approximate the service provided by the construction and other equipment. Depletion of quarry property is based on the usage of depletable reserves. We frequently sell property and equipment that has reached the end of its useful life or no longer meets our needs, including depleted quarry property. At the time that an asset or an asset group meets the held-for-sale criteria as defined by ASC Topic 360, *Property, Plant, and Equipment,* we write it down to fair value less cost to sell, if the fair value is below the carrying value. Fair value is estimated by a variety of factors including, but not limited to, market comparative data, historical sales prices, broker quotes and third-party valuations. If material, such property is separately disclosed, otherwise it is held in property and equipment until sold. The cost and accumulated depreciation or depletion of property sold or retired is removed from the consolidated balance sheet and the resulting gains or losses, if any, are reflected in operating income on the consolidated statement of operations for the period. In the case that we abandon an asset, an amount equal to the carrying amount of the asset, less salvage value, if any, will be recognized as expense in the period that the asset was abandoned. Repairs and maintenance are expensed as incurred.

Costs related to the development of internal-use software during the preliminary project and post-implementation stages are expensed as incurred. Costs incurred during the application development stage are capitalized. These costs consist primarily of software, hardware and consulting fees, as well as salaries and related costs. Amounts capitalized are reported as a component of office furniture and equipment within property and equipment. Capitalized software costs are depreciated using the straight-line method over the estimated useful life of the related software, which range from three to seven years. During the years ended December 31, 2018, 2017 and 2016, we capitalized $4.4 million, $7.9 million and $6.6 million, respectively, of internal-use software development and related hardware costs.

Long-lived Assets

We review property and equipment and amortizable intangible assets for impairment at an asset group level whenever events or changes in circumstances indicate the net book value of an asset group may not be recoverable. Recoverability of these asset groups is measured by comparison of their net book values to the future undiscounted cash flows the asset groups are expected to generate. If the asset groups are considered to be impaired, an impairment charge will be recognized equal to the amount by which the net book value of the asset group exceeds fair value. We group construction and plant equipment assets at the lowest level for which identifiable cash flows are largely independent of the cash flows of other groups of assets. When an individual asset or group of assets is determined to no longer contribute to its vertically integrated construction and plant equipment asset group, it is assessed for impairment independently.

As of December 31, 2018, amortizable intangible assets, which include customer relationships, developed technologies, permits, trademarks/trade names, backlog, favorable contracts and covenants not to compete, are being amortized over remaining terms from one to twenty years. As of December 31, 2018, amortizable intangible liabilities, which include unfavorable contracts and leases, are being amortized over remaining terms of two years. All intangible assets and liabilities are amortized on a straight-line basis except for backlog, favorable contracts and unfavorable contracts which will be amortized as the associated projects progress, and customer relationships which will be amortized using an accelerated method.

Goodwill

As a result of the change in our reportable segments, we reassessed our reporting units and have determined we have eight reporting units in which goodwill was recorded as follows:

- Midwest Group Transportation
- Midwest Group Specialty
- Northwest Group Transportation
- Northwest Group Materials
- California Group Transportation
- Water and Mineral Services Group Water
- Water and Mineral Services Group Specialty
- Water and Mineral Services Group Materials

Goodwill was reallocated to these reporting units based on their relative fair values. See Note 13 for the goodwill balance by reportable segment as of December 31, 2018 and 2017.

We perform our goodwill impairment tests annually as of November 1 and more frequently when events and circumstances occur that indicate a possible impairment of goodwill. Examples of such events or circumstances include, but are not limited to, the following:

- a significant adverse change in legal factors or in the business climate;
- an adverse action or assessment by a regulator;
- a more likely than not expectation that a segment or a significant portion thereof will be sold; or
- the testing for recoverability of a significant asset group within the segment.

In performing the quantitative goodwill impairment tests, we calculate the estimated fair value of the reporting unit in which the goodwill is recorded using the discounted cash flows and market multiple methods. Judgments inherent in these methods include the determination of appropriate discount rates, the amount and timing of expected future cash flows and growth rates, and appropriate benchmark companies. The cash flows used in our 2018 discounted cash flow model were based on five-year financial forecasts, which in turn were based on the 2018-2022 operating plan developed internally by management adjusted for market participant-based assumptions. Our discount rate assumptions are based on an assessment of the equity cost of capital and appropriate capital structure for our reporting units. In assessing the reasonableness of our determined fair values of our reporting units, we evaluate the reasonableness of our results against our current market capitalization.

The estimated fair value is compared to the net book value of the reporting unit, including goodwill. If the fair value of the reporting unit exceeds its net book value, goodwill of the reporting unit is considered not impaired. If the fair value of the reporting unit is less than its net book value, goodwill is impaired and the excess of the reporting unit’s net book value over the fair value is recognized as an impairment loss.

During 2018, due to the change in reportable segments, the resulting change to reporting units and in accordance with ASC Topic 350, *Intangibles - Goodwill and Other*, we conducted impairment tests on reporting units that were most susceptible to fluctuations in results. We conducted these tests before the change on the Kenny Large Project Construction and Kenny Construction reporting units and after the change on the Midwest Group Transportation, Midwest Group Specialty and Water and Mineral Services Group Water reporting units. These assessments indicated that the estimated fair values of the reporting units exceeded their net book values.

For our 2018 annual goodwill impairment test, we elected to perform a qualitative analysis and after assessing the totality of events and circumstances, we determined that it is more likely than not that the fair value of these reporting units were greater than the carrying amounts; therefore, a quantitative goodwill impairment test was not performed. Factors we considered were macroeconomic conditions, industry and market considerations, cost factors, overall financial performance, changes in management or key personnel, changes in strategy, changes in customers, changes in the composition or carrying amount of a reporting segments' net assets, and changes in our stock price.

Contract Liabilities

Our contract liabilities consist of provisions for losses, billings in excess of costs and estimated earnings and may include retainage. Provisions for losses are recognized in the consolidated statements of operations at the uncompleted performance obligation level for the amount of total estimated losses in the period that evidence indicates that the estimated total cost of a performance obligation exceeds its estimated total revenue. Billings in excess of costs and estimated earnings are billings to customers on contracts in advance of work performed, including advance payments negotiated as a contract condition. Generally, unearned project-related costs will be earned over the next twelve months.

Asset Retirement Obligations

We account for the costs related to legal obligations to reclaim aggregate mining sites and other facilities by recording our estimated asset retirement obligation at fair value using Level 3 inputs, capitalizing the estimated liability as part of the related asset's carrying amount and allocating it to expense over the asset's useful life. To determine the fair value of the obligation, we estimate the cost for a third-party to perform the legally required reclamation including a reasonable profit margin. This cost is then increased for future estimated inflation based on the estimated years to complete and discounted to fair value using present value techniques with a credit-adjusted, risk-free rate. In estimating the settlement date, we evaluate the current facts and conditions to determine the most likely settlement date.

We review reclamation obligations at least annually for a revision to the cost or a change in the estimated settlement date. Additionally, reclamation obligations are reviewed in the period that a triggering event occurs that would result in either a revision to the cost or a change in the estimated settlement date.

Warranties

Many of our construction contracts contain warranty provisions covering defects in equipment, materials, design or workmanship that generally run from six months to one year after our customer accepts the contract. Because of the nature of our projects, including contract owner inspections of the work both during construction and prior to acceptance, we have not experienced material warranty costs for these short-term warranties and, therefore, do not believe an accrual for these costs is necessary. Certain construction contracts carry longer warranty periods, ranging from two to ten years, for which we have accrued an estimate of warranty cost. The warranty liability is estimated based on our experience with the type of work and any known risks relative to the project and was not material as of December 31, 2018 and 2017.

Accrued Insurance Costs

We carry insurance policies to cover various risks, primarily general liability, automobile liability, workers compensation and employee medical expenses, under which we are liable to reimburse the insurance company for a portion of each claim paid. The amounts for which we are liable for general liability and workers compensation generally range from the first $0.5 million to $1.0 million per occurrence. We accrue for probable losses, both reported and unreported, that are reasonably estimable using actuarial methods based on historic trends modified, if necessary, by recent events. Changes in our loss assumptions caused by changes in actual experience would affect our assessment of the ultimate liability and could have an effect on our operating results and financial position up to $1.0 million per occurrence for general liability and workers compensation or $0.3 million for medical insurance.

Performance Guarantees

Agreements with our joint venture partners ("partner(s)") for both construction joint ventures and line item joint ventures define each partner's management role and financial responsibility in the project. The amount of operational exposure is generally limited to our stated ownership interest. However, due to the joint and several nature of the performance obligations under the related owner contracts, if one of the partners fails to perform, we and the remaining partners, if any, would be responsible for performance of the outstanding work (i.e., we provide a performance guarantee). We estimate our liability for performance guarantees for our unconsolidated construction joint ventures and line item joint ventures using estimated partner bond rates, which are Level 2 inputs, and include them in accrued expenses and other current liabilities (see Note 14) with a corresponding increase in equity in construction joint ventures in the consolidated balance sheets. We reassess our liability when and if changes in circumstances occur. The liability and corresponding asset are removed from the consolidated balance sheets upon customer acceptance of the project. Circumstances that could lead to a loss under these agreements beyond our stated ownership interest include the failure of a partner to contribute additional funds to the joint venture in the event the project incurs a loss or additional costs that we could incur should a partner fail to provide the services and resources that it had committed to provide in the agreement.

Contingencies

We are currently involved in various claims and legal proceedings. Loss contingency provisions are recorded if the potential loss from any asserted or un-asserted claim or legal proceeding is considered probable and the amount can be reasonably estimated. If a potential loss is considered probable but only a range of loss can be determined, the low-end of the range is recorded. These accruals represent management's best estimate of probable loss. Disclosure is also provided when it is reasonably possible and estimable that a loss will be incurred or when it is reasonably possible that the amount of a loss will exceed the amount recorded. Significant judgment is required in both the determination of probability of loss and the determination as to whether an exposure is reasonably estimable. Because of uncertainties related to these matters, accruals are based only on the best information available at the time. As additional information becomes available, we reassess the potential liability related to claims and litigation and may revise our estimates. See Note 21 for additional information.

Stock-Based Compensation

We measure and recognize compensation expense, net of estimated forfeitures, over the requisite vesting periods for all stock-based payment awards made. Stock-based compensation is included in selling, general and administrative expenses and cost of revenue on our consolidated statements of operations.

Income Taxes

Deferred taxes are provided on a liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss carry-forwards and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between the reported amounts of assets and liabilities in the consolidated financial statements and their respective tax bases. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment.

We report a liability in accrued expenses and other current liabilities and in other long-term liabilities in the consolidated balance sheets for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. We recognize interest and penalties, if any, related to unrecognized tax benefits in other (income) expense in the consolidated statements of operations.

Computation of Earnings per Share

Basic net income per share is computed using the weighted-average number of common shares outstanding during the period. Diluted net income per share is computed using the weighted-average number of common shares and dilutive potential common shares outstanding during the period. Dilutive potential common shares include stock options and RSUs, under the 2012 Equity Incentive Plan.

Reclassifications

Certain reclassifications of prior period amounts have been made to conform to the current period presentation. These reclassifications included $6.9 million and $9.2 million during 2017 and 2016, respectively, of cost of revenue and gross profit to the Materials segment primarily from the Transportation segment to better align costs with the respective segments. These reclassifications had no impact on previously reported consolidated operating income or net income, on the consolidated balance sheets or on the statements of cash flows.

Recently Issued Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-02, *Leases (Topic 842)* and subsequently issued related ASUs, which requires lessees to recognize the following for all leases (with the exception of short-term leases) at the commencement date: (a) a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and (b) a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. The ASU will be effective commencing with our quarter ending March 31, 2019. We will adopt the new guidance using a modified retrospective basis, recognizing a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We anticipate applying the optional practical expedients upon adoption, which allows us to forego a reassessment of 1) whether any expired or existing contracts are or contain leases; 2) the lease classification for any expired or existing leases; and 3) the initial direct costs for any existing leases. Based on our preliminary assessment, we expect the adoption of this ASU to result in the recognition of $50.0 million to $65.0 million of right-of-use assets and lease liabilities on our consolidated balance sheets with an immaterial impact to the to the opening balance of retained earnings.

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities,* which refines and expands hedge accounting for both financial (e.g., interest rate) and commodity risks. This ASU will be effective commencing with our quarter ending March 31, 2019. We do not expect the adoption of this ASU to have a material impact on our consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows companies to reclassify stranded tax affects resulting from the U.S. Tax Cuts and Jobs Act of 2017 ("Tax Reform"), from accumulated other comprehensive income to retained earnings. In addition, the ASU requires certain new disclosures regardless of the election. This ASU will be effective commencing with our quarter ending March 31, 2019. We do not expect the adoption of this ASU to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*, which modifies the disclosure requirements on fair value measurements. This ASU will be effective commencing with our quarter ending March 31, 2020. We do not expect the adoption of this ASU to have a material impact on our consolidated financial statements.

Recently Adopted Accounting Pronouncements

In August 2016, the FASB issued ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*. The amendments in this ASU clarify and provide specific guidance on eight cash flow classification issues that are not currently addressed by current U.S. GAAP. This ASU was effective commencing with our quarter ended March 31, 2018 and had no impact on our consolidated financial statements.

In October 2016, the FASB issued ASU No. 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*. The amendments in this ASU require the income tax consequences of an intra-entity transfer of an asset other than inventory to be recognized when the transfer occurs instead of when the asset is sold to an outside party. This ASU was effective commencing with our quarter ended March 31, 2018 and did not have an impact on our consolidated financial statements upon adoption; however, it may have a material impact in the future if applicable transactions occur.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*, which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and restricted cash. This ASU was effective commencing with our quarter ended September 30, 2018 and did not have a material impact on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations (Topic 805)*: *Clarifying the Definition of a Business,* which is intended to help companies evaluate whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses by providing a more robust framework to use in determining when a set of assets and activities is a business. This ASU was effective commencing with our quarter ended March 31, 2018 and did not have an impact upon adoption; however, it may have a material impact in the future if applicable transactions occur.

In May 2017, the FASB issued ASU No. 2017-09, *Compensation-Stock Compensation (Topic 718) Scope of Modification Accounting,* which clarifies that changes to the value, vesting conditions, or award classification of share-based payment awards must be accounted for as modifications. This ASU was effective commencing with our quarter ended March 31, 2018 and did not have an impact on our consolidated financial statements upon adoption; however, it may have a material impact in the future if applicable transactions occur.

In March 2018, the FASB issued ASU No. 2018-05, *Income Taxes (Topic 740) - Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No.118*, which was effective commencing with our quarter ended March 31, 2018 and the impact to the year ended December 31, 2018 is disclosed in Note 19.

Effect of adopting Topic 606

Effective on January 1, 2019, we adopted Topic 606 using a modified retrospective transition approach. We elected to apply Topic 606 to contracts with customers that are not substantially complete, i.e. less than 90% complete, as of January 1, 2018. The core principle of Topic 606 is that revenue will be recognized when promised goods or services are transferred to customers in an amount that reflects consideration for which entitlement is expected in exchange for those goods or services.

While the adoption of Topic 606 did not have an impact on revenue of our Materials segment, it did impact revenue of our Transportation, Water and Specialty segments specifically in the following areas:

- Multiple performance obligations – In accordance with Topic 606, we reviewed construction contracts with customers, including those related to contract modifications, to determine if there are multiple performance obligations. Based on this review, we identified one unconsolidated joint venture contract in our Transportation segment that has multiple performance obligations.
- Multiple contracts – We reviewed contracts containing task orders and identified one master contract in our Water segment that consists of multiple individual contracts as defined by Topic 606. Previously, revenue for this contract was forecasted and recorded at the master contract level.
- Revenue recognition – We identified one contract in our Specialty segment where performance obligations are satisfied and control of the promised goods and services are transferred to the customer upon delivery of goods rather than over time. Previously, revenue for this contract was recognized over time.
- Provisions for losses – We identified one unconsolidated joint venture contract in our Transportation segment that has actual and provisions for losses at the performance obligation level related to completed and uncompleted performance obligations, respectively. Previously, provisions for losses were recorded at the contract level.

The impact to retained earnings as of January 1, 2018 from the adoption of Topic 606 related to the items noted above was a net cumulative decrease of $15.2 million.

In addition, as of January 1, 2018, we began to separately present contract assets and liabilities on the consolidated balance sheets. Contract assets include amounts due under contractual retainage provisions that were previously included in accounts receivable as well as costs and estimated earnings in excess of billings that were previously separately presented. Contract liabilities include billings in excess of costs and estimated earnings that were previously separately presented as well as provisions for losses that were previously included in accrued expenses and other current liabilities. See Note 6 for further information.

Notes 4, 5 and 6 include information relating to our adoption of Topic 606. Note 4 includes information regarding our revenue disaggregated by operating group, Note 5 includes information regarding unearned revenue and Note 6 includes information regarding our contract assets and liabilities.

The amounts by which each consolidated balance sheet line item as of December 31, 2018 and consolidated statement of operations line item for the year ended December 31, 2018 was affected by the adoption of Topic 606 relative to the previous revenue guidance are presented in the tables below (in thousands). The changes are primarily related to reclassifications on the consolidated balance sheet and the impact on the consolidated statement of operations from the new requirements under Topic 606. The change in retained earnings is net of the cumulative effect of initially applying Topic 606.

December 31, 2018

Consolidated Balance Sheet	As Reported	Balances Without Adoption of Topic 606	Effect of Change Higher/(Lower)
Assets			
Receivables, net	$ 473,246	$ 578,433	$(105,187)
Contract assets	219,754	—	219,754
Costs and estimated earnings in excess of billings	—	151,985	(151,985)
Other noncurrent assets	131,601	126,329	5,272
Liabilities and equity			
Contract liabilities	$ 105,449	$ —	$ 105,449
Billings in excess of costs and estimated earnings	—	139,575	(139,575)
Accrued expenses and other current liabilities	273,626	267,850	5,776
Retained earnings	787,356	791,151	(3,795)

Year Ended December 31, 2018

Consolidated Statement of Operations	As Reported	Balances Without Adoption of Topic 606	Effect of Change Higher/(Lower)
Revenue			
Transportation	$1,976,743	$1,970,311	$ 6,432
Water	338,250	334,807	3,443
Specialty	626,619	627,230	(611)
Materials	376,802	376,802	—
Total revenue	3,318,414	3,309,150	9,264
Cost of revenue			
Transportation	$1,786,698	$1,792,794	$ (6,096)
Water	278,676	278,676	—
Specialty	535,731	535,731	—
Materials	328,117	328,117	—
Total cost of revenue	2,929,222	2,935,318	(6,096)
Gross profit	$ 389,192	$ 373,832	$15,360
Operating income	64,043	48,683	15,360
Provision for income taxes	10,414	6,459	3,955
Net income	53,741	42,336	11,405
Net income attributable to Granite Construction Incorporated	42,410	31,005	11,405

2. Acquisitions

On June 14, 2018 (“acquisition date”), we completed the acquisition of Layne for $349.8 million in a stock-for-stock merger. We paid $321.0 million of the purchase price with 5.6 million shares of Company common stock and $28.8 million in cash to settle all outstanding stock options, restricted stock awards and unvested performance shares of Layne. In addition to the issuance of Company common stock and the settlement of various equity awards in cash, we assumed $191.5 million in convertible notes at fair value. See Note 15 for further discussion of the assumed convertible notes.

Layne operates as a wholly owned subsidiary of Granite Construction Incorporated and its results are reported in the newly formed Water and Mineral Services operating group in the Water, Specialty and Materials segments. Layne’s customers are in both the public and private sector. We have accounted for this transaction in accordance with ASC Topic 805, *Business Combinations* (“ASC 805”).

We have included Layne operating results in our consolidated statements of operations since the acquisition date. Revenue attributable to Layne for the year ended December 31, 2018 was $271.7 million and net losses before taxes for the year ended December 31, 2018 were $22.4 million. Income before provision for income taxes for the year ended December 31, 2018 included Layne's portion of total pre-tax acquisition and integration expenses of $53.5 million.

Preliminary Purchase Price Allocation

In accordance with ASC 805, the total purchase price and assumed liabilities were allocated to the net tangible and identifiable intangible assets based on their estimated fair values as of the acquisition date as presented in the table below (in thousands). Since the acquisition date, we made measurement period adjustments to reflect facts and circumstances in existence as of the acquisition date. These adjustments included decreases of $4.9 million and $2.2 million in property and equipment and deferred income taxes, respectively, partially offset by a net $1.3 million increase in various other items with a resulting increase in goodwill of $5.8 million. In addition, we recorded a $7.6 million decrease and a corresponding increase to the investment in affiliates and goodwill balances, respectively.

As we continue to integrate the acquired business, we may obtain additional information on the acquired identifiable intangible assets which, if significant, may require revisions to preliminary valuation assumptions, estimates and resulting fair values. Although no further adjustments are anticipated, we expect to finalize these amounts within 12 months from the acquisition date.

Assets	
Cash	$ 2,995
Receivables	70,160
Contract assets	44,947
Inventories	23,424
Other current assets	5,533
Property and equipment	183,030
Investments in affiliates	55,400
Deferred income taxes	20,959
Other noncurrent assets (including $5,906 of restricted cash)	17,868
Total tangible assets	424,316
Identifiable intangible assets	61,548
Liabilities	
Identifiable intangible liabilities	6,800
Accounts payable	38,321
Contract liabilities	7,854
Accrued expenses and other current liabilities	47,583
Long-term debt	191,500
Other long-term liabilities	31,585
Total liabilities assumed	323,643
Total identifiable net assets acquired	162,221
Goodwill	187,619
Estimated purchase price	$349,840

In addition, on April 3, 2018, we acquired LiquiForce, a privately-owned company which provides sewer lining rehabilitation services to public and private sector water and wastewater customers in both Canada and the U.S. We acquired LiquiForce for $35.9 million in cash primarily borrowed under the Company's credit agreement described more fully in Note 15. The tangible and intangible assets acquired and liabilities assumed were $14.3 million, $10.9 million and $8.5 million, respectively, resulting in acquired goodwill of $19.3 million. LiquiForce results are reported in the Water and Mineral Services operating group in the Water segment.

Intangible assets

The following table lists amortized intangible assets and liabilities from the Layne and LiquiForce acquisitions that are included in other noncurrent assets and other long-term liabilities in the consolidated balance sheets as of December 31, 2018 (in thousands):

	Weighted Average Useful Lives (Years)	Gross Value	Accumulated Amortization	Net Value
Assets				
Customer relationships	3	$35,937	$ (5,880)	$30,057
Backlog	2	9,713	(5,795)	3,918
Developed technologies	4	9,233	(1,384)	7,849
Trademarks/trade name	4	9,075	(1,382)	7,693
Favorable contracts, covenants not to compete and other	1	5,731	(2,461)	3,270
Intangible assets		$69,689	$(16,902)	$52,787
Liabilities				
Unfavorable contracts and leases	2	$ 7,000	$ (4,726)	$ 2,274
Intangible liabilities		$ 7,000	$ (4,726)	$ 2,274

The net amortization expense related to the acquired amortized intangible assets and liabilities for the year ended December 31, 2018 was $12.2 million and was included in cost of revenue and selling, general and administrative expenses in the consolidated statements of operations. All of the acquired intangible assets and liabilities will be amortized on a straight-line basis except for backlog, favorable contracts and unfavorable contracts which will be amortized as the associated projects progress, and customer relationships which will be amortized on a double declining basis. Amortization expense related to the acquired amortized intangible asset balances at December 31, 2018 is expected to be recorded in the future as follows: $16.9 million in 2019; $11.7 million in 2020; $9.0 million in 2021; and $12.9 million thereafter.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of the underlying net tangible and intangible assets. The factors that contributed to the recognition of goodwill from the acquisitions of Layne and LiquiForce include acquiring a workforce with capabilities in the global water management, construction and drilling markets, cost savings opportunities and synergies. For the Layne acquisition, we recorded $125.7 million, $52.5 million, and $9.4 million of goodwill allocated to our Water, Materials and Specialty reportable segments, respectively. For the LiquiForce acquisition, we recorded $19.2 million in goodwill that was allocated to our Water reportable segment. The goodwill from both acquisitions is not expected to be deductible for income tax purposes.

Pro Forma Financial Information

The financial information in the table below summarizes the unaudited combined results of operations of Granite and Layne, on a pro forma basis, as though the companies had been combined as of January 1, 2017 (unaudited, in thousands, except per share amounts). The pro forma financial information is unaudited and presented for informational purposes only and is not indicative of the results of operations that would have been achieved if the acquisition had taken place on January 1, 2017.

Years Ended December 31,	2018	2017
Revenue	$3,530,989	$3,456,656
Net income	103,594	(5,759)
Net income (loss) attributable to Granite	92,263	(12,462)
Basic net income (loss) per share attributable to common shareholders	2.00	(0.27)
Diluted net income (loss) per share attributable to common shareholders	2.00	(0.27)

These amounts have been calculated after applying Granite's accounting policies and adjusting the results of Layne to reflect the additional depreciation and amortization that would have been recorded assuming the fair value adjustments to property and equipment and intangible assets had been applied starting on January 1, 2017. Acquisition and integration expenses related to Layne that were incurred during the year ended December 31, 2018 are reflected in year ended December 31, 2017 due to the assumed timing of the transaction. The statutory tax rate of 26.0% and 39.0% were used for 2018 and 2017, respectively, for the pro forma adjustments.

Acquisition and integration expenses primarily associated with both the Layne and LiquiForce acquisitions for the year ended December 31, 2018 were comprised of the following (in thousands):

(in thousands)	
Professional services and other expenses	$46,898
Severance and personnel costs	13,147
Total	$60,045

3. Revisions in Estimates

Our profit recognition related to construction contracts is based on estimates of costs to complete each project. These estimates can vary significantly in the normal course of business as projects progress, circumstances develop and evolve, and uncertainties are resolved. When we experience significant changes in our estimates of costs to complete, we undergo a process that includes reviewing the nature of the changes to ensure that there are no material amounts that should have been recorded in a prior period rather than as revisions in estimates for the current period. For revisions in estimates, generally we use the cumulative catch-up method for changes to the transaction price that are part of a single performance obligation. Under this method, revisions in estimates are accounted for in their entirety in the period of change. There can be no assurance that we will not experience further changes in circumstances or otherwise be required to revise our cost estimates in the future.

In our review of these changes for the years ended December 31, 2018 and 2016, we did not identify any material amounts that should have been recorded in a prior period. In our review of these changes for the year ended December 31, 2017, we identified and corrected amounts that should have been recorded during the year ended December 31, 2016. This correction resulted in a $4.9 million decrease to Specialty revenue and gross profit and a $1.6 million decrease in net income attributable to Granite Construction Incorporated. We have assessed the impact of this correction to the financial statements of prior periods' and to the financial statements for the year ended December 31, 2017 and have concluded that the amounts are not material.

In the normal course of business, we have revisions in estimated costs some of which are associated with unresolved affirmative claims and back charges. The estimated or actual recovery related to these estimated costs may be recorded in future periods or may be at values below the associated cost, which can cause fluctuations in the gross profit impact from revisions in estimates.

The changes in project profitability from revisions in estimates, which individually had an impact of $5.0 million or more on gross profit, were decreases of $86.5 million, $67.2 million and a net decrease of $33.0 million for the years ended December 31, 2018, 2017 and 2016, respectively. There were no increases from revisions in estimates, which individually had an impact of $5.0 million or more on gross profit, for the years ended December 31, 2018 and 2017 and one increase of $6.5 million in our Transportation segment during the year ended December 31, 2016. All decreases were in our Transportation segment except for decreases of $6.1 million and $6.0 million during the years ended December 31, 2017 and 2016, respectively, which were in our Specialty segment. The projects with decreases are summarized as follows (dollars in millions):

Years Ended December 31,	**2018**	**2017**	**2016**
Number of projects with downward estimate changes	5	6	4
Range of reduction in gross profit from each project, net	$5.3 - 32.0	$6.1 - 17.2	$6.0 - 13.6
Decrease to project profitability	$ 86.5	$ 67.2	$ 39.4

The decreases during the years ended December 31, 2018, 2017 and 2016 were due to additional costs and lower productivity than originally anticipated as well as additional weather related costs and a decrease in estimated recovery from customer affirmative claims.

There were no amounts attributable to non-controlling interests for the year ended December 31, 2018 and amounts attributable to non-controlling interests were $2.1 million and $6.5 million of the net decreases for the years ended December 31, 2017 and 2016, respectively.

Included in the tables above for the years ended December 31, 2018, 2017 and 2016 is the impact to gross profit from changes in estimated contract revenue and costs of $18.2 million, $34.3 million and $51.3 million, respectively, related to revisions in estimates from the estimated cost recovery of customer affirmative claims and back charges. Generally, increases in estimated contract costs are in excess of estimated cost recovery from affirmative claims and back charges.

4. Disaggregation of Revenue

We disaggregate our revenue based on our reportable segments and operating groups as it is the format that is regularly reviewed by management. Our reportable segments are: Transportation, Water, Specialty and Materials. Our operating groups are: (i) California; (ii) Northwest; (iii) Heavy Civil; (iv) Federal (formerly included with Heavy Civil); (v) Midwest (formerly Kenny less the underground business); and (vi) Water and Mineral Services (which includes LiquiForce, Layne and the underground business of the former Kenny operating group). The following tables present our disaggregated revenue (in thousands):

Years Ended December 31,

2018	Transportation	Water	Specialty	Materials	Total
California	$ 607,737	$ 52,757	$143,471	$213,673	$1,017,638
Northwest	465,085	3,882	159,517	138,924	767,408
Heavy Civil	818,715	19,945	—	—	838,660
Federal	683	2,116	41,471	—	44,270
Midwest	84,523	1,930	223,517	—	309,970
Water and Mineral Services	—	257,620	58,643	24,205	340,468
Total	$1,976,743	$338,250	$626,619	$376,802	$3,318,414

2017	Transportation	Water	Specialty	Materials	Total
California	$ 470,996	$ 39,071	$160,572	$178,048	$ 848,687
Northwest	611,021	623	104,793	114,728	831,165
Heavy Civil	773,990	23,153	—	—	797,143
Federal	31,406	1,884	5,196	—	38,486
Midwest	60,007	7,004	345,147	—	412,158
Water and Mineral Services	—	61,964	110	—	62,074
Total	$1,947,420	$133,699	$615,818	$292,776	$2,989,713

2016	Transportation	Water	Specialty	Materials	Total
California	$ 378,838	$ 40,250	$185,079	$148,778	$ 752,945
Northwest	486,037	9,853	94,379	112,448	702,717
Heavy Civil	688,527	16,279	—	—	704,806
Federal	5,149	1,196	4,470	—	10,815
Midwest	68,235	17,316	181,395	—	266,946
Water and Mineral Services	—	76,388	—	—	76,388
Total	$1,626,786	$161,282	$465,323	$261,226	$2,514,617

5. Unearned Revenue

The following tables present our unearned revenue as of the respective periods (in thousands):

December 31, 2018	Transportation	Water	Specialty	Total
California	$ 314,261	$ 6,163	$ 57,820	$ 378,244
Northwest	319,589	786	81,951	402,326
Heavy Civil	1,473,455	21,951	—	1,495,387
Federal	—	—	130,644	130,663
Midwest	78,004	211	203,601	281,816
Water and Mineral Services	—	189,597	—	189,597
Total	$2,185,309	$218,708	$474,016	$2,878,033

January 1, 2018	Transportation	Water	Specialty	Total
California	$ 299,552	$ 27,328	$ 79,176	$ 406,056
Northwest	273,864	2,606	39,112	315,582
Heavy Civil	2,194,430	38,183	—	2,232,613
Federal	317	4,212	162,641	167,170
Midwest	90,584	1,961	365,767	458,312
Water and Mineral Services	—	4,116	—	4,116
Total	$2,858,747	$ 78,406	$646,696	$3,583,849

6. Contract Assets and Liabilities

During the year ended December 31, 2018, we recognized revenue of $104.5 million that was included in the contract liability balance at January 1, 2018.

During the year ended December 31, 2018, we recognized revenue of $114.9 million as a result of changes in contract transaction price related to performance obligations that were satisfied or partially satisfied prior to the end of the period. The changes in contract transaction price were from items such as executed or estimated change orders and unresolved contract modifications and claims.

As of December 31, 2018 and January 1, 2018, the aggregate claim recovery estimates included in contract asset and liability balances were approximately $45.1 million and $26.7 million, respectively. As of December 31, 2017, costs and estimated earnings in excess of billings and billings in excess of costs and estimated earnings included $26.7 million in aggregate claim recovery estimates.

The components of the contract asset balances as of the respective dates were as follows (in thousands):

	December 31, 2018	January 1, 2018
Costs in excess of billings and estimated earnings	$120,223	$ 69,755
Contract retention	99,531	91,135
Total contract assets	$219,754	$160,890

The following table summarizes changes in the contract asset balance for the period presented (in thousands):

Balance at January 1, 2018	$ 160,890
Change in the measure of progress on projects, net	911,109
Acquired contract assets	45,353
Revisions in estimates, net	(11,180)
Billings	(823,286)
Receipts related to contract retention	(63,132)
Balance at December 31, 2018	$ 219,754

The components of the contract liability balances as of the respective dates were as follows (in thousands):

	December 31, 2018	January 1, 2018
Billings in excess of costs and estimated earnings, net of retention	$103,250	$ 82,750
Provisions for losses	2,199	924
Total contract liabilities	$105,449	$ 83,674

The following table summarizes changes in the contract liability balance for the period presented (in thousands):

Balance at January 1, 2018	$ 83,674
Change in the measure of progress on projects, net	(1,332,400)
Acquired contract liabilities	7,974
Revisions in estimates, net	(4,450)
Billings	1,349,441
Change in provision for loss, net	1,210
Balance at December 31, 2018	$ 105,449

7. Receivables, net (in thousands)

December 31,	2018	2017
Contracts completed and in progress:		
Billed	$285,521	$252,467
Unbilled	98,755	77,135
Retentions	—	91,135
Total contracts completed and in progress	384,276	420,737
Material sales	45,286	42,192
Other	44,195	17,014
Total gross receivables	473,757	479,943
Less: allowance for doubtful accounts	511	152
Total net receivables	$473,246	$479,791

Receivables include billed and unbilled amounts for services provided to clients for which we have an unconditional right to payment as of the end of the applicable period and do not bear interest. Included in other receivables at December 31, 2018 and 2017 were items such as estimated recovery from back charge claims, notes receivable, fuel tax refunds, receivables from vendors and income tax refunds. No such receivables individually exceeded 10% of total net receivables at any of these dates.

During the years ended December 31, 2018, 2017 and 2016, our largest volume customer, including both prime and subcontractor arrangements, was the California Department of Transportation ("Caltrans"). Revenue recognized from contracts with Caltrans during 2018, 2017 and 2016, represented $282.9 million (8.5% of total revenue), $281.7 million (9.4% of total revenue) and $222.4 million (8.8% of total revenue), respectively, which was primarily in the Transportation segment.

We regularly review our accounts receivable, including past due amounts, to determine their probability of collection. If it is probable that an amount is uncollectible, it is charged to bad debt expense and a corresponding reserve is established in allowance for doubtful accounts.

Certain construction contracts include retainage provisions that were included in contract assets as of December 31, 2018 and in receivables, net as of December 31, 2017 in our consolidated balance sheets. The balances billed but not paid by customers pursuant to these provisions generally become due upon completion and acceptance of the project work or products by the owners. As of December 31, 2018 and 2017, no retention receivable individually exceeded 10% of total net receivables at any of the presented dates. The majority of the retentions receivable are expected to be collected within one year and there were no retentions receivables determined to be uncollectible.

8. Marketable Securities

All marketable securities were classified as held-to-maturity as of the dates presented and the carrying amounts of held-to-maturity securities were as follows (in thousands):

December 31,	2018	2017
U.S. Government and agency obligations	$24,996	$ 17,910
Commercial paper	—	49,865
Corporate bonds	5,006	—
Total short-term marketable securities	30,002	67,775
U.S. Government and agency obligations	36,098	59,993
Corporate bonds	—	5,022
Total long-term marketable securities	36,098	65,015
Total marketable securities	$66,100	$132,790

Scheduled maturities of held-to-maturity investments were as follows (in thousands):

December 31,	2018
Due within one year	$30,002
Due in one to five years	36,098
Total	$66,100

9. Fair Value Measurement

The following tables summarize significant assets and liabilities measured at fair value in the consolidated balance sheets on a recurring basis for each of the fair value levels (in thousands):

	Fair Value Measurement at Reporting Date Using			
December 31, 2018	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash equivalents				
Money market funds	$84,613	—	$—	$84,613
Other noncurrent assets				
Restricted cash	5,825	—	—	5,825
Total assets	$90,438	$ —	$—	$90,438
Other current liabilities				
Cash flow hedge	$ —	$1,098	$—	$ 1,098
Total liabilities	$ —	$1,098	$—	$ 1,098
December 31, 2017				
Cash equivalents				
Money market funds	$37,284	$ —	$—	$37,284
Commercial paper	9,967	—	—	9,967
Other current assets				
Cash flow hedge	—	1,400	—	1,400
Total assets	$47,251	$1,400	$—	$48,651

Interest Rate Swaps

In May 2018, we entered into the Third Amended and Restated Credit Agreement (as discussed further in Note 15), terminated the interest rate swap we entered into in January 2016 and entered into two new interest rate swaps designated as cash flow hedges with an effective date of May 2018. The two new cash flow hedges have a combined initial notional amount of $150.0 million and mature in May 2023. The interest rate swaps are designed to convert the interest rate on the term loan as discussed further in Note 15 from a variable interest rate of LIBOR plus an applicable margin to a fixed rate of 2.76% plus the same applicable margin.

Other Assets and Liabilities

The carrying values and estimated fair values of our financial instruments that are not required to be recorded at fair value in the consolidated balance sheets are as follows (in thousands):

December 31,		2018		2017	
	Fair Value Hierarchy	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets:					
Held-to-maturity marketable securities	Level 1	$ 66,100	$ 65,290	$132,790	$132,002
Liabilities (including current maturities):					
2019 Notes[1]	Level 3	$ 40,000	$ 40,484	$ 80,000	$ 82,190
Credit Agreement - term loan[1]	Level 3	146,250	147,141	90,000	89,871
Credit Agreement - revolving credit facility[1]	Level 3	197,000	197,889	55,000	55,054

[1] See Note 15 for definitions of, and more information about, the 2019 Notes and Credit Agreement.

At least annually, we measure certain nonfinancial assets and liabilities at fair value on a nonrecurring basis. As of December 31, 2018 and 2017, the nonfinancial assets and liabilities included our asset retirement and reclamation obligations, as well as net assets held for sale and assets and corresponding liabilities associated with performance guarantees. See Note 1 for further discussion.

During the years ended December 31, 2018, 2017 and 2016, we had no material nonfinancial asset and liability fair value adjustments.

10. Construction Joint Ventures

We participate in various construction joint ventures. We have determined that certain of these joint ventures are consolidated because they are VIEs and we are the primary beneficiary. We continually evaluate whether there are changes in the status of the VIEs or changes to the primary beneficiary designation of the VIE. Based on our assessments during the years ended December 31, 2018, 2017 and 2016, we determined no change was required for existing joint ventures.

Due to the joint and several nature of the performance obligations under the related owner contracts, if any of the partners fail to perform, we and the remaining partners, if any, would be responsible for performance of the outstanding work (i.e., we provide a performance guarantee). At December 31, 2018, there was $3.1 billion of construction revenue to be recognized on unconsolidated and line item construction joint venture contracts of which $1.0 billion represented our share and the remaining $2.1 billion represented our partners' share. We are not able to estimate amounts that may be required beyond the remaining cost of the work to be performed. These costs could be offset by billings to the customer or by proceeds from our partners' corporate and/or other guarantees. See Note 14 for disclosure of the performance guarantee amounts recorded in the consolidated balance sheets and Note 1 for additional discussion regarding performance guarantees.

Generally, each construction joint venture is formed to accomplish a specific project and is jointly controlled by the joint venture partners. The joint venture agreements typically provide that our interests in any profits and assets, and our respective share in any losses and liabilities, that may result from the performance of the contracts are limited to our stated percentage interest in the project. Under our joint venture contractual arrangements, we provide capital to these joint ventures in return for an ownership interest. In addition, partners dedicate resources to the joint ventures necessary to complete the contracts and are reimbursed for their cost. The operational risks of each construction joint venture are passed along to the joint venture members. As we absorb our share of these risks, our investment in each venture is exposed to potential gains and losses.

The volume and stage of completion of contracts from our consolidated and unconsolidated construction joint ventures may cause fluctuations in cash and cash equivalents and, for consolidated construction joint ventures, contract assets, contract liabilities and property and equipment between periods.

The assets and liabilities of each consolidated and unconsolidated construction joint venture relate solely to that joint venture. The decision to distribute joint venture assets must generally be made jointly by a majority of the members and, accordingly, these assets, including those associated with estimated cost recovery of customer affirmative claims and back charge claims, are generally not available for the working capital needs of Granite until distributed.

Consolidated Construction Joint Ventures

At December 31, 2018, we were engaged in seven active CCJV projects with total contract values ranging from $14.8 million to $409.7 million and a combined total of $1.2 billion. Our share of revenue remaining to be recognized on these CCJVs was $365.9 million and ranged from $0.2 million to $175.0 million. Our proportionate share of the equity in these joint ventures was between 50% and 65%. During the years ended December 31, 2018, 2017 and 2016, total revenue from CCJVs was $242.1 million, $185.5 million and $119.8 million, respectively. During the years ended December 31, 2018, 2017 and 2016, CCJVs provided $85.6 million, $36.9 million and $37.8 million of operating cash flows, respectively.

Unconsolidated Construction Joint Ventures

As discussed in Note 1, where we have determined we are not the primary beneficiary of a joint venture but do exercise significant influence, we account for our share of the operations of unconsolidated construction joint ventures on a pro rata basis in revenue and cost of revenue in the consolidated statements of operations and in equity in construction joint ventures in the consolidated balance sheets.

As of December 31, 2018, we were engaged in nine active unconsolidated joint venture projects with total contract values ranging from $101.7 million to $3.8 billion and a combined total of $11.3 billion of which our share was $3.3 billion. Our proportionate share of the equity in these unconsolidated joint ventures ranged from 20% to 50%. As of December 31, 2018, our share of the revenue remaining to be recognized on these unconsolidated joint ventures was $1.0 billion and ranged from $1.9 million to $254.8 million.

The following is summary financial information related to unconsolidated construction joint ventures (in thousands):

December 31,	2018	2017
Assets		
Cash, cash equivalents and marketable securities	$229,562	$289,940
Other current assets[1]	814,979	812,577
Noncurrent assets	204,090	219,825
Less partners' interest	822,215	869,782
Granite's interest[1,2]	426,416	452,560
Liabilities		
Current liabilities	525,036	682,832
Less partners' interest and adjustments[3]	369,782	462,159
Granite's interest	155,254	220,673
Equity in construction joint ventures[4]	$271,162	$231,887

1 Included in this balance and in accrued and other current liabilities on our consolidated balance sheets were amounts related to performance guarantees that were $88.2 million and $88.6 million as of December 31, 2018 and 2017, respectively (see Note 14).

2 Included in this balance as of December 31, 2018 and 2017 was $78.1 million and $74.3 million, respectively, related to Granite's share of estimated cost recovery of customer affirmative claims. In addition, this balance included $15.6 million and $11.8 million related to Granite's share of estimated recovery of back charge claims as of December 31, 2018 and 2017, respectively.

3 Partners' interest and adjustments includes amounts to reconcile total net assets as reported by our partners to Granite's interest adjusted to reflect our accounting policies and estimates primarily related to contract forecast differences.

4 Included in this balance and in accrued expenses and other current liabilities on the consolidated balance sheets were amounts related to deficits in construction joint ventures that were $11.5 million and $15.9 million as of December 31, 2018 and 2017, respectively.

Years Ended December 31,	2018	2017	2016
Revenue			
Total	$1,544,406	$2,057,336	$1,958,158
Less partners' interest and adjustments[1]	1,022,370	1,469,550	1,387,532
Granite's interest	522,036	587,786	570,626
Cost of revenue			
Total	1,787,501	1,995,915	1,915,376
Less partners' interest and adjustments[1]	1,240,135	1,394,347	1,360,459
Granite's interest	547,366	601,568	554,917
Granite's interest in gross (loss) profit	$ (25,330)	$ (13,782)	$ 15,709

[1] Partners' interest and adjustments includes amounts to reconcile total revenue and total cost of revenue as reported by our partners to Granite's interest adjusted to reflect our accounting policies and estimates primarily related to contract forecast differences.

During the years ended December 31, 2018, 2017 and 2016, unconsolidated construction joint venture net (loss) income was ($240.3) million, $62.2 million and $41.8 million, respectively, of which our share was ($22.6) million, ($14.4) million and $15.6 million, respectively. The differences between our share of the joint venture net loss during the years ended December 31, 2018 and 2017 when compared to the joint venture net (loss) income primarily resulted from differences between our estimated total revenue and cost of revenue when compared to that of our partners' on three projects. These joint venture net income amounts exclude our corporate overhead required to manage the joint ventures and include taxes only to the extent the applicable states have joint venture level taxes.

11. Investments in Affiliates

Our investments in affiliates balance is related to our investments in unconsolidated non-construction entities that we account for using the equity method of accounting, including investments in foreign affiliates that we obtained from the Layne acquisition, real estate entities and an asphalt terminal entity.

Our investments in foreign affiliates are engaged in mineral drilling services and the manufacture and supply of drilling equipment, parts and supplies in Latin America. The real estate entities were formed to accomplish specific real estate development projects in which our wholly owned subsidiary, Granite Land Company, participates with third-party partners. The asphalt terminal entity is a 50% interest in a limited liability company which owns and operates an asphalt terminal and operates an emulsion plant in Nevada.

We have determined that the real estate entities are not consolidated because although they are VIEs, we are not the primary beneficiary. We have determined that the foreign affiliates and the asphalt terminal entity are not consolidated because they are not VIEs and we do not hold the majority voting interest. As such, these entities are accounted for using the equity method. We account for our share of the operating results of the equity method investments in other income in the consolidated statements of operations and as a single line item in the consolidated balance sheets as investments in affiliates.

Our investments in affiliates balance consists of equity method investments in the following types of entities (in thousands):

December 31,	2018	2017
Foreign	$55,715	$ —
Real estate	19,676	29,472
Asphalt terminal	8,963	8,997
Total investments in affiliates	$84,354	$38,469

The following table provides summarized balance sheet information for our affiliates accounted for under the equity method on a combined basis (in thousands):

December 31,	2018	2017
Current assets	$141,930	$ 31,320
Noncurrent assets	170,172	129,039
Total assets	312,102	160,359
Current liabilities	55,816	30,131
Long-term liabilities[1]	63,098	31,636
Total liabilities	118,914	61,767
Net assets	193,188	98,592
Granite's share of net assets	$ 84,354	$ 38,469

[1] The balance primarily relates to debt associated with our real estate investments. The increase in the balance since December 31, 2017 is related to debt of our foreign affiliates associated with purchase of equipment and buildings. See Note 15 for further discussion.

Of the $312.1 million in total assets as of December 31, 2018, we had investments in thirteen foreign entities with total assets ranging from less than $0.2 million to $68.1 million, four real estate entities with total assets ranging from less than $0.3 million to $57.1 million and the asphalt terminal entity had total assets of $21.2 million. We have direct and indirect investments in the foreign entities and our percent ownership ranged from 25% to 50% as of December 31, 2018. The equity method investments in real estate affiliates included $16.3 million and $24.3 million in residential real estate in Texas as of December 31, 2018 and 2017, respectively. The remaining balances were in commercial real estate in Texas.

The following table provides summarized statement of operations information for our affiliates accounted for under the equity method on a combined basis (in thousands):

Years Ended December 31,	2018	2017	2016
Revenue	$187,827	$56,372	$56,127
Gross profit	51,061	23,007	22,398
Income before taxes	31,612	17,154	19,117
Net income	31,612	17,154	19,117
Granite's interest in affiliates' net income	6,935	7,107	7,177

12. Property and Equipment, net

Balances of major classes of assets and allowances for depreciation and depletion are included in property and equipment, net in the consolidated balance sheets as follows (in thousands):

December 31,	2018	2017
Equipment and vehicles	$ 906,275	$ 778,549
Quarry property	180,246	182,267
Land and land improvements	142,271	108,830
Buildings and leasehold improvements	108,884	82,601
Office furniture and equipment	65,680	56,894
Property and equipment	1,403,356	1,209,141
Less: accumulated depreciation and depletion	853,668	801,723
Property and equipment, net	$ 549,688	$ 407,418

Depreciation and depletion expense primarily included in cost of revenue in our consolidated statements of operations was $96.4 million, $63.8 million and $61.0 million for the years ended December 31, 2018, 2017 and 2016, respectively.

We have recorded liabilities associated with our legally required obligations to reclaim owned and leased quarry property and related facilities. As of December 31, 2018 and 2017, $4.4 million and $4.8 million, respectively, of our asset retirement obligations were included in accrued expenses and other current liabilities and $17.4 million and $17.7 million, respectively, were included in other long-term liabilities in the consolidated balance sheets.

The following is a reconciliation of these asset retirement obligations (in thousands):

Years Ended December 31,	2018	2017
Beginning balance	$22,527	$21,936
Revisions to estimates	17	462
Liabilities settled	(1,790)	(966)
Accretion	1,038	1,095
Ending balance	$21,792	$22,527

13. Intangible Assets

Indefinite-lived Intangible Assets

Indefinite-lived intangible assets primarily consist of goodwill. The following table presents the goodwill balance by reportable segment (in thousands):

December 31,	2018	2017
Transportation	$ 19,798	$19,798
Water	144,319	618
Specialty	40,866	31,437
Materials	54,488	1,946
Total goodwill	$259,471	$53,799

The following table presents the changes in goodwill since December 31, 2017 (in thousands):

Balance at December 31, 2017	$ 53,799
Layne acquisition goodwill	187,619
LiquiForce acquisition goodwill	19,269
Goodwill translation and other adjustments	(1,216)
Balance at December 31, 2018	$ 259,471

Amortized Intangible Assets

The following is the breakdown of our amortized intangible assets that are included in other noncurrent assets in the consolidated balance sheets (in thousands):

December 31, 2018	Gross Value	Accumulated Amortization	Net Value
Assets			
Customer relationships	$38,137	$ (7,640)	$30,497
Permits	25,959	(13,494)	12,465
Backlog	9,713	(5,795)	3,918
Developed technologies	9,233	(1,384)	7,849
Trademarks/trade name	9,075	(1,381)	7,694
Favorable contracts, covenants not to compete and other	5,781	(2,489)	3,292
Intangible assets	97,898	(32,183)	65,715
Liabilities			
Unfavorable contracts and leases	$ 7,000	$ (4,726)	$ 2,274
Intangible liabilities	$ 7,000	$ (4,726)	$ 2,274
Total net amortized intangible assets	$90,898	$(27,457)	$63,441

December 31, 2017			
Permits	$25,959	$(12,504)	$13,455
Customer lists	2,200	(1,467)	733
Trademarks/trade name	4,100	(2,159)	1,941
Covenants not to compete and other	50	(26)	24
Total amortized intangible assets	$32,309	$(16,156)	$16,153

The net amortization expense related to amortized intangible assets for the years ended December 31, 2018, 2017 and 2016 was $15.2 million, $1.7 million and $2.0 million, respectively, and was primarily included in cost of revenue and selling, general and administrative expenses in the consolidated statements of operations. In addition, during the years ended December 31, 2018 and 2017, the gross value and associated accumulated amortization was adjusted for fully amortized intangible assets that we no longer intend to use. Amortization expense based on the amortized intangible assets balance at December 31, 2018 is expected to be recorded in the future as follows: $18.2 million in 2019; $12.9 million in 2020; $10.0 million in 2021; $6.3 million in 2022; $4.2 million in 2023; and $11.8 million thereafter.

14. Accrued Expenses and Other Current Liabilities (in thousands):

December 31,	2018	2017
Payroll and related employee benefits	$ 78,414	$ 68,210
Accrued insurance	58,519	39,946
Performance guarantees (see Note 1)	88,213	88,606
Other	48,480	39,645
Total	$273,626	$236,407

Other includes dividends payable, accrued legal reserves, warranty reserves, asset retirement obligations, remediation reserves, deficits in construction joint ventures and other miscellaneous accruals, none of which are greater than 5% of total current liabilities.

15. Long-Term Debt and Credit Arrangements (in thousands):

December 31,	2018	2017
Senior notes payable	$ 40,000	$ 80,000
Credit Agreement term loan	146,250	90,000
Credit Agreement revolving credit loan	197,000	55,000
Debt issuance costs	(845)	(499)
Total debt	382,405	224,501
Less current maturities	47,286	46,048
Total long-term debt	$335,119	$178,453

The aggregate minimum principal maturities of long-term debt, including current maturities and excluding debt issuance costs, related to balances at December 31, 2018 are as follows: $47.6 million in 2019; $7.5 million in 2020; $7.5 million in 2021; $7.5 million in 2022; and $313.3 million thereafter.

Senior Notes Payable

Senior notes payable in the amount of $40.0 million and $80.0 million as of December 31, 2018 and 2017, respectively, were due to a group of institutional holders and had an interest rate of 6.11% per annum ("2019 Notes"). As of December 31, 2018, all of the $40.0 million was included in current maturities of long-term debt on the consolidated balance sheets. As of December 31, 2017, $40.0 million of the outstanding balance was included in long-term debt on the consolidated balance sheets and the remaining $40.0 million was included in current maturities of long-term debt.

Our obligations under the note purchase agreement governing the 2019 Notes (the "2019 NPA") are guaranteed by certain of our subsidiaries and are collateralized on an equivalent basis with the Credit Agreement discussed below by liens on substantially all of the assets of the Company and subsidiaries that are guarantors or borrowers under the Credit Agreement. The 2019 NPA provides for the release of liens and re-pledge of collateral on substantially the same terms and conditions as those set forth in the Credit Agreement.

Credit Agreement

Granite entered into the Third Amended and Restated Credit Agreement dated May 31, 2018 (the "Credit Agreement"). The Credit Agreement provides for, among other things, (i) a total committed remaining credit facility of $496.3 million, of which $146.3 million is a term loan (all of which was drawn on May 31, 2018) and of which $350.0 million is a revolving credit facility; (ii) an increase to the revolving credit facility and/or term loan at the option of the Company, in an aggregate maximum amount up to $200.0 million subject to the lenders providing the additional commitments; (iii) a maturity date of May 31, 2023 (the "Maturity Date") and (iv) the elimination of the stipulation to have a $150.0 million minimum cash balance before and after a dividend payment. There was no change in the aggregate sublimit for letters of credit of $100.0 million nor was there any significant change to the affirmative, restrictive or financial covenant terms except for the removal of the minimum Consolidated Tangible Net Worth financial covenant requirement and an increase of the Consolidated Leverage Ratio financial covenant requirement from 3.00 to 3.50 for the four quarters subsequent to a permitted acquisition with cash consideration in excess of $100.0 million.

Of the $146.3 million term loan, 1.25% of the principal balance was paid in the quarter ended December 31, 2018 and 1.25% is due each quarter until the Maturity Date at which point the remaining balance is due. As of December 31, 2018 and 2017, $7.5 million and $6.2 million, respectively, of the term loan balance was included in current maturities of long-term debt on the consolidated balance sheets and the remaining $138.8 million and $83.8 million, respectively, was included in long-term debt.

As of December 31, 2018, the total stated amount of all issued and outstanding letters of credit under the Credit Agreement was $39.4 million. As of December 31, 2018 and 2017, $197.0 million and $55.0 million had been drawn under the revolving credit facility. The draws made in 2018 funded the payment related to convertible notes, the 2018 installment of the 2019 Notes and the Layne and LiquiForce acquisitions. The draw made in 2017 primarily funded the 2017 installments of the 2019 Notes. As of December 31, 2018, the total unused availability under the Credit Agreement was $113.6 million. The letters of credit will expire between June and November 2019.

Borrowings under the Credit Agreement bear interest at LIBOR or a base rate (at our option), plus an applicable margin based on the Consolidated Leverage Ratio calculated quarterly. LIBOR varies based on the applicable loan term, market conditions and other external factors. The applicable margin was 1.50% for loans bearing interest based on LIBOR and 0.50% for loans bearing interest at the base rate at December 31, 2018. Accordingly, the effective interest rate using three-month LIBOR and the base rate was 4.31% and 6.00%, respectively, at December 31, 2018 and we elected to use LIBOR for both the term loan and the revolving credit facility. In May 2018, we entered into an interest rate swap to convert the interest rate on borrowings under the Credit Agreement from a variable interest rate of LIBOR plus an applicable margin to a fixed rate of 2.76% plus the same applicable margin.

Borrowings at the base rate have no designated term and may be repaid without penalty any time prior to the Maturity Date. Borrowings bearing interest at a LIBOR rate have a term no less than one month and no greater than six months (a longer period, not to exceed twelve months, if approved by all lenders). At the end of each term, such borrowings can be paid or continued at our discretion as either a borrowing at the base rate or a borrowing at a LIBOR rate with similar terms and the same or different permitted interest period. Our obligations under the Credit Agreement are guaranteed by certain of our subsidiaries and are collateralized on an equivalent basis with the obligations under the 2019 Notes by first priority liens (subject only to other permitted liens) on substantially all of the assets of the Company and certain of our subsidiaries that are required to be guarantors or borrowers under the Credit Agreement.

The Credit Agreement provides for the release of the liens securing the obligations, at our option and expense, so long as certain conditions as defined by the terms in the Credit Agreement are satisfied ("Collateral Release Period"). However, if subsequent to exercising the option, our Consolidated Fixed Charge Coverage Ratio is less than 1.25 or our Consolidated Leverage Ratio is greater than 2.50, then we would be required to promptly re-pledge substantially all of the assets of the Company and our subsidiaries that are guarantors or borrowers under the Credit Agreement. As of December 31, 2018, the conditions for the exercise of our right under the Credit Agreement to have liens released were not satisfied.

Convertible Notes

In connection with our acquisition of Layne, we assumed fair value of $69.9 million of convertible notes that had an interest rate of 4.25% per annum, payable semi-annually in arrears on May 15 and November 15 (“4.25% Convertible Notes”). The 4.25% Convertible Notes had a maturity date of November 15, 2018, unless earlier repurchased, redeemed or converted and were convertible at the option of the holders until the close of business on November 14, 2018. Prior to maturity, $0.5 million par value of the convertible notes were converted and cash settled for $0.3 million consistent with the irrevocable cash settlement election invoked by Layne on May 14, 2018. The $69.0 million remaining par value was redeemed at par plus $1.5 million of accrued interest on November 15, 2018.

Also in connection with our acquisition of Layne, we assumed convertible notes with a fair value of $121.6 million that had an interest rate of 8.0% per annum, payable semi-annually on May 1 and November 1 (“8.0% Convertible Notes”). As of December 31, 2018, $30.7 million associated with the conversion feature of the 8.0% Convertible Notes was included in additional paid-in capital on the consolidated balance sheet. The 8.0% Convertible Notes had a maturity date of August 15, 2018 (the “8.0% Maturity Date”). During the three months ended September 30, 2018, $52.0 million of convertible notes were converted to 1.2 million shares of Granite common stock at the election of the note holders. The remaining $38.9 million of convertible notes, as well as $0.9 million of accrued interest as of the 8.0% Maturity Date, were redeemed in cash.

Real Estate Indebtedness

Our unconsolidated investments in real estate entities are subject to mortgage indebtedness. This indebtedness is non-recourse to Granite, but is recourse to the real estate entity. The terms of this indebtedness are typically renegotiated to reflect the evolving nature of the real estate project as it progresses through acquisition, entitlement and development. Modification of these terms may include changes in loan-to-value ratios requiring the real estate entity to repay portions of the debt. The debt associated with our unconsolidated real estate entities is disclosed in Note 11.

Covenants and Events of Default

Our debt and credit agreements require us to comply with various affirmative, restrictive and financial covenants, including the financial covenants described below. Our failure to comply with any of these covenants, or to pay principal, interest or other amounts when due thereunder, would constitute an event of default under the applicable agreements. Under certain circumstances, the occurrence of an event of default under one of our debt or credit agreements (or the acceleration of the maturity of the indebtedness under one of our agreements) may constitute an event of default under one or more of our other debt or credit agreements. Default under our debt and credit agreements could result in (i) us no longer being entitled to borrow under the agreements; (ii) termination of the agreements; (iii) the requirement that any letters of credit under the agreements be cash collateralized; (iv) acceleration of the maturity of outstanding indebtedness under the agreements and/or (v) foreclosure on any lien securing the obligations under the agreements.

The most significant financial covenants under the terms of our Credit Agreement and related to the note purchase agreement governing our 2019 Notes (“2019 NPA”) require the maintenance of a minimum Consolidated Interest Coverage Ratio and a maximum Consolidated Leverage Ratio. In addition, the 2019 NPA requires a minimum Consolidated Tangible Net Worth.

As of December 31, 2018 and pursuant to the definitions in the 2019 NPA, which is more restrictive, our Consolidated Tangible Net Worth was $1.1 billion, which exceeded the minimum of $791.4 million, our Consolidated Leverage Ratio was 1.82 which did not exceed the maximum of 3.00 and our Consolidated Interest Coverage Ratio was 14.10 which exceeded the minimum of 4.00.

As of December 31, 2018, we were in compliance with all covenants contained in the Credit Agreement and related to the 2019 NPA. We are not aware of any non-compliance by any of our unconsolidated real estate entities with the covenants contained in their debt agreements.

16. Employee Benefit Plans

Profit Sharing and 401(k) Plan

The Profit Sharing and 401(k) Plan (the "401(k) Plan") is a defined contribution plan covering all employees except employees covered by collective bargaining agreements and certain employees of our consolidated construction joint ventures. Each employee's combined pre-tax 401(k) and post-tax (Roth) contributions cannot exceed 50% of their eligible pay or Internal Revenue Code annual contribution limits. Our 401(k) matching contributions can be up to 6% of an employee's gross pay at the discretion of the Board of Directors. Our 401(k) matching contributions to the 401(k) Plan for the years ended December 31, 2018, 2017 and 2016 were $13.4 million, $12.1 million and $11.0 million, respectively. Profit sharing contributions from the Company may be made to the 401(k) Plan in an amount determined by the Board of Directors. We made no profit sharing contributions during the years ended December 31, 2018, 2017 and 2016.

Non-Qualified Deferred Compensation Plan

We offer a Non-Qualified Deferred Compensation Plan ("NQDC Plan") to a select group of our highly compensated employees and non-employee directors. The NQDC Plan provides participants the opportunity to defer payment of certain compensation as defined in the NQDC Plan. In October 2008, a Rabbi Trust was established to fund our NQDC Plan obligation and was fully funded as of December 31, 2018. The assets held by the Rabbi Trust at December 31, 2018 and 2017 are substantially in the form of Company-owned life insurance and are included in other noncurrent assets in the consolidated balance sheets. As of December 31, 2018, there were 56 active participants in the NQDC Plan. NQDC Plan obligations were $25.2 million as of December 31, 2018, of which $3.6 million were due in early 2019 that were assumed from the Layne acquisition and were included in accrued and other current liabilities on the consolidated balance sheets. NQDC plan obligations were $24.7 million as of December 31, 2017. As of December 31, 2018, $3.6 million of the NQDC Plan obligations were assumed from Layne acquisitions and were due in early 2019. In addition, with the acquisition of Layne we assumed liabilities related to supplemental retirement benefits of approximately $5.0 million that was included in other long-term liabilities on the consolidated balance sheets.

Multi-employer Pension Plans

Five of our wholly owned subsidiaries, Granite Construction Company, Granite Construction Northeast, Inc., Granite Industrial, Inc., Kenny Construction Company and Layne Christensen Company contribute to various multi-employer pension plans on behalf of union employees. The risks of participating in these multiemployer plans are different from single-employer plans in the following aspects:

- Assets contributed to the multi-employer plan by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the plan, the unfunded obligations of the plan may be borne by the remaining participating employers.
- If we chose to stop participating in some of the multi-employer plans, we may be required to pay those plans an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

The following table presents our participation in these plans (dollars in thousands):

Pension Trust Fund	Pension Plan Employer Identification Number	Pension Protection Act ("PPA") Certified Zone Status[1]		FIP / RP Status Pending / Implemented[2]	Contributions			Surcharge Imposed	Expiration Date of Collective Bargaining Agreement[3]
		2018	2017		2018	2017	2016		
Locals 302 and 612 iUOE-Employers Construction Industry Retirement Plan	91-6028571	Green	Green	No	$ 4,726	$ 3,646	$ 3,113	No	12/31/2019 5/31/2021
Pension Trust Fund for Operating Engineers Pension Plan	94-6090764	Yellow	Red	Yes	11,363	10,431	9,266	No	6/30/2019 5/15/2020 6/15/2020 6/30/2020 9/30/2020 1/31/2021 10/31/2021
Operating Engineers Pension Trust Fund	95-6032478	Yellow	Yellow	Yes	4,251	4,692	5,357	No	6/30/2019
Laborers Pension Trust Fund for Northern California	94-6277608	Green	Yellow	Yes	3,009	2,464	2,215	No	6/30/2023
Construction Laborers Pension Trust for Southern California	43-6159056	Green	Green	No	2,110	2,002	2,095	No	6/30/2021
Laborers Pension Fund	36-2514514	Green	Green	No	2,458	3,208	2,328	No	5/31/2021
All other funds (44 as of December 31, 2018)					15,994	10,341	8,708		
				Total Contributions:	$43,911	$36,784	$33,082		

[1] The most recent PPA zone status available in 2018 and 2017 is for the plan's year-end during 2017 and 2016, respectively. The zone status is based on information that we received from the plan and is certified by the plan's actuary. Among other factors, plans in the red zone are generally less than 65 percent funded, plans in the orange zone are less than 80 percent funded and have an Accumulated Funding Deficiency in the current year or projected into the next six years, plans in the yellow zone are less than 80 percent funded, and plans in the green zone are at least 80 percent funded.

[2] The "FIP/RP Status Pending/Implemented" column indicates plans for which a financial improvement plan ("FIP") or a rehabilitation plan ("RP") is either pending or has been implemented.

[3] Lists the expiration date(s) of the collective-bargaining agreement(s) to which the plans are subject. Pension trust funds with a range of expiration dates have various collective bargaining agreements. Expired collective bargaining agreements are under negotiation.

Based upon the most recently available annual reports, the Company's contribution to each of the individually significant plans listed in the table above was less than 5% of each plan's total contributions. We currently have no intention of withdrawing from any of the multi-employer pension plans in which we participate that would result in a significant withdrawal liability. In addition, we do not have any significant future obligations or funding requirements related to these plans other than the ongoing contributions that are paid as hours are worked by plan participants.

17. Shareholders' Equity

Stock-based Compensation

The 2012 Equity Incentive Plan provides for the issuance of restricted stock, RSUs and stock options to eligible employees and to members of our Board of Directors. A total of 1,394,204 shares of our common stock have been reserved for issuance of which 952,454 remained available as of December 31, 2018. No stock options or restricted stock were granted during the years ended December 31, 2018, 2017 and 2016. There were no stock options or restricted stock outstanding as of December 31, 2018.

Restricted Stock Units

RSUs are issued for services to be rendered and may not be sold, transferred or pledged for such a period as determined by our Compensation Committee. RSU stock compensation cost is measured at our common stock's fair value based on the market price at the date of grant. We recognize compensation cost only for RSUs that we estimate will ultimately vest. We estimate the number of shares that will ultimately vest at each grant date based on our historical experience and adjust compensation cost based on changes in those estimates over time.

RSU compensation cost is recognized ratably over the shorter of the vesting period (generally three years) or the period from grant date to the first maturity date after the holder reaches age 62 and has completed certain specified years of service, when all RSUs become fully vested. Vesting of RSUs is not subject to any market or performance conditions and vesting provisions are at the discretion of the Compensation Committee. An employee may not sell or otherwise transfer unvested RSUs and, in the event employment is terminated prior to the end of the vesting period, any unvested RSUs are surrendered to us. We have no obligation to purchase these RSUs that are surrendered to us.

A summary of the changes in our RSUs during the years ended December 31, 2018, 2017 and 2016 is as follows (shares in thousands):

Years Ended December 31,	2018		2017		2016	
	RSUs	Weighted-Average Grant-Date Fair Value per RSU	RSUs	Weighted-Average Grant-Date Fair Value per RSU	RSUs	Weighted-Average Grant-Date Fair Value per RSU
Outstanding, beginning balance	524	$41.51	681	$39.15	451	$32.73
Granted	271	59.44	259	51.31	572	43.17
Vested	(315)	48.97	(372)	43.89	(307)	36.24
Forfeited	(37)	49.17	(44)	43.51	(35)	40.97
Outstanding, ending balance	443	$47.65	524	$41.51	681	$39.15

Compensation cost related to RSUs was $14.8 million ($12.4 million net of effective tax rate), $15.8 million ($11.4 million net of effective tax rate) and $13.4 million ($9.2 million net of effective tax rate) for the years ended December 31, 2018, 2017 and 2016, respectively. The grant date fair value of RSUs vested during the years ended December 31, 2018, 2017 and 2016 was $15.4 million, $16.7 million and $11.5 million, respectively. As of December 31, 2018, there was $8.9 million of unrecognized compensation cost related to RSUs which will be recognized over a remaining weighted-average period of 1.3 years.

401(k) Plan: As of December 31, 2018, the 401(k) Plan owned 1,306,366 shares of our common stock. Dividends on shares held by the 401(k) Plan are charged to retained earnings and all shares held by the 401(k) Plan are treated as outstanding in computing our earnings per share.

Employee Stock Purchase Plan: Our ESPP allows qualifying employees to purchase shares of our common stock through payroll deductions of up to 15% of their compensation, subject to Internal Revenue Code limitations, at a price of 95% of the fair market value as of the end of each of the six-month offering periods, which commence on May 15 and November 15 of each year. During the year ended December 31, 2018, proceeds from the ESPP were $0.9 million for 17,825 shares and during each of the years ended December 31, 2017 and 2016, proceeds from the ESPP were $0.8 million for 16,413 and 16,717 shares, respectively.

Share Purchase Program: As announced on April 29, 2016, on April 7, 2016, the Board of Directors authorized us to purchase up to $200.0 million of our common stock at management's discretion, which replaced the former authorization including the amount available. As part of this authorization we have established a share repurchase program to facilitate common stock repurchases. During the last quarter of 2018, we purchased approximately 252,000 shares at an average price of $39.64 per share for $10.0 million. The specific timing and amount of any future purchases will vary based on market conditions, securities law limitations and other factors.

18. Weighted Average Shares Outstanding and Net Income Per Share

The following table presents a reconciliation of the weighted average shares outstanding used in calculating basic and diluted net income per share as well as the calculation of basic and diluted net income per share (in thousands except per share amounts):

Years Ended December 31,	2018	2017	2016
Numerator (basic and diluted):			
Net income allocated to common shareholders for basic calculation	$42,410	$69,098	$57,122
Denominator:			
Weighted average common shares outstanding, basic	43,564	39,795	39,557
Dilutive effect of RSUs and common stock options	461	577	668
Weighted average common shares outstanding, diluted	44,025	40,372	40,225
Net income per share, basic	$ 0.97	$ 1.74	$ 1.44
Net income per share, diluted	$ 0.96	$ 1.71	$ 1.42

19. Income Taxes

Following is a summary of the income before provision for income taxes (in thousands):

Years Ended December 31,	2018	2017	2016
Domestic	$70,071	$104,250	$96,326
Foreign	(5,916)	213	36
Total income before provision for income taxes	$64,155	$104,463	$96,362

Following is a summary of the provision for income taxes (in thousands):

Years Ended December 31,	2018	2017	2016
Federal:			
Current	$(11,140)	$27,889	$15,632
Deferred	18,673	(4,383)	9,898
Total federal	7,533	23,506	25,530
State:			
Current	1,147	5,520	4,567
Deferred	1,888	(338)	19
Total state	3,035	5,182	4,586
Foreign:			
Current	381	(12)	25
Deferred	(535)	(14)	21
Total foreign	(154)	(26)	46
Total provision for income taxes	$ 10,414	$28,662	$30,162

Following is a reconciliation of our provision for income taxes based on the Federal statutory tax rate to our effective tax rate (dollars in thousands):

Years Ended December 31,	2018		2017		2016	
Federal statutory tax	$13,472	21.0%	$36,562	35.0%	$33,728	35.0%
State taxes, net of federal tax benefit	3,305	5.2	3,814	3.7	2,990	3.1
Foreign taxes	(190)	(0.3)	—	—	—	—
Percentage depletion deduction	(951)	(1.5)	(1,368)	(1.3)	(1,352)	(1.4)
Domestic production activities deduction	—	—	(2,765)	(2.7)	(1,624)	(1.7)
Non-controlling interests	(2,368)	(3.7)	(2,346)	(2.3)	(3,177)	(3.3)
Nondeductible expenses	4,842	7.5	1,128	1.1	1,094	1.1
Changes in uncertain tax positions	(772)	(1.2)	—	—	—	—
Capital loss expiration	8,480	13.2	—	—	—	—
Valuation allowance	(6,852)	(10.7)	—	—	—	—
Tax Cuts and Jobs Act of 2017	(7,980)	(12.4)	(3,664)	(3.5)	—	—
Other	(572)	(0.9)	(2,699)	(2.6)	(1,497)	(1.5)
Total	$10,414	16.2%	$28,662	27.4%	$30,162	31.3%

The tax effect of nondeductible expenses for the year ended December 31, 2018 increased to 7.5% from 1.1% when compared to the same period in 2017. This change was primarily due to one-time nondeductible acquisition and integration expenses incurred in 2018.

On December 22, 2017 the U.S. Tax Cuts and Jobs Act of 2017 (“Tax Reform”) was signed into law. As a result of Tax Reform, the U.S. statutory tax rate was lowered from 35% to 21% effective January 1, 2018, a territorial tax system was implemented, and a one-time repatriation tax on deemed repatriated earnings of foreign subsidiaries was imposed, among other changes. ASC Topic 740, *Accounting for Income Taxes*, requires companies to recognize the effect of tax law changes in the period of enactment. ASU 2018-05, *Income Taxes (Topic 740) – Amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 118*, allows a company to record a provisional amount when it does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain tax effects of Tax Reform. The Company recognized the provisional tax impacts of Tax Reform in its consolidated financial statements for the year ended December 31, 2017. The majority of the impacts were related to the revaluation of deferred tax assets and liabilities at December 31, 2017 and the one-time repatriation tax. During the year ended December 31, 2018, within the one-year measurement period ending December 22, 2018, an $8.0 million benefit to the provisional amount was recorded primarily related to the revaluation of deferred tax assets and liabilities including adjustments to two unconsolidated joint ventures based on changes to the tax positions taken by the related consolidating joint venture partners during 2018. The accounting for the income tax effects of Tax Reform is now complete.

Following is a summary of the deferred tax assets and liabilities (in thousands):

December 31,	2018	2017
Long-term deferred tax assets:		
Receivables	$ 2,723	$ 526
Inventory	90	1,513
Insurance	11,084	7,401
Deferred compensation	10,441	8,985
Other accrued liabilities	1,906	1,525
Accrued compensation	3,803	1,738
Other	3,520	1,379
Net operating loss carryforwards	67,944	2,614
Valuation allowance	(31,823)	(2,471)
Total long-term deferred tax assets	69,688	23,210
Long-term deferred tax liabilities:		
Property and equipment	49,728	16,832
Contract income recognition	21,359	7,739
Total long-term deferred tax liabilities	71,087	24,571
Net long-term deferred tax liabilities	$ (1,399)	$ (1,361)

The deferred income taxes asset, net of $2.9 million at December 31, 2018 is included in other noncurrent assets in our consolidated balance sheets.

The following is a summary of the net operating loss carryforwards at December 31, 2018 (in thousands):

	Expiration	Gross Carryforward	Tax Effected Carryforward
Federal net operating loss carryforwards	2032-2036	$170,560	$35,818
State net operating loss carryforwards	2019-2036	281,332	15,010
Foreign tax loss carryforwards	2019-2033	57,771	17,116
Total net operating loss carryforwards at December 31, 2018			$67,944

The federal, state and foreign net operating loss carryforwards above included unrecognized tax benefits taken in prior years and the net operating loss carryforward deferred tax asset is presented net of these unrecognized tax benefits in accordance with ASC 740. The federal and state net operating loss and capital loss carryforwards acquired during the Layne acquisition are subject to Internal Revenue Code Section 382 limitations and may be limited in future periods and a portion may expire unused. As we expect to use the federal net operating loss carryforwards prior to expiration we believe that it is more likely than not that these deferred tax assets will be realized and no valuation allowance was deemed necessary. We have provided a valuation allowance on the net operating loss deferred tax asset or the net deferred tax assets for certain state and local jurisdictions because we do not believe it is more likely than not that they will be realized. The federal and state capital loss carryforwards and foreign tax loss carryforwards acquired during the Layne acquisition are expected to expire unused and as we do not believe it is more likely than not that they will be realized we have provided a valuation allowance on the related deferred tax assets. The federal and state capital loss carryforwards acquired during the Layne acquisition expired on December 31, 2018; therefore, the deferred tax assets and related valuation allowance was written off.

The following is a summary of the change in valuation allowance (in thousands):

December 31,	2018	2017	2016
Beginning balance	$ 2,471	$2,153	$ 641
Additions due to acquisitions	36,410	—	—
(Deductions) additions, net	(7,058)	318	1,512
Ending balance	$31,823	$2,471	$2,153

The deduction to the valuation allowance is mainly due to the expiration of the federal and state capital loss carryforwards discussed above. Additions to the valuation allowance are insignificant for the year ended December 31, 2018.

We intend to indefinitely reinvest certain earnings of our foreign subsidiaries and affiliates. Tax Reform generally eliminates federal income taxes on dividends from foreign subsidiaries therefore we would only be subject to other taxes, such as withholding and local taxes, upon distribution of these earnings. Of the $42.0 million of accumulated undistributed earnings that we consider indefinitely reinvested as of December 31, 2018, it is not practicable to determine the amount of taxes that would be payable upon remittance of these earnings. Deferred foreign withholding taxes have been provided on undistributed earnings of certain foreign subsidiaries and foreign affiliates where the earnings are not considered to be invested indefinitely.

Uncertain tax positions

We file income tax returns in the U.S. and various state and local jurisdictions. We are currently under examination by various state taxing authorities for various tax years. We do not anticipate that any of these audits will result in a material change in our financial position. We are no longer subject to U.S. federal examinations by tax authorities for years before 2011. With few exceptions, as of December 31, 2018, we are no longer subject to state examinations by taxing authorities for years before 2011.

We file income tax returns in foreign jurisdictions where we operate. The returns are subject to examination which may be ongoing at any point in time and tax liabilities are recorded based on estimates of additional taxes which will be due upon settlement of those examinations. The tax years subject to examination by foreign tax authorities vary by jurisdiction, but generally we are no longer subject to examinations by taxing authorities for years before 2015.

We had approximately $22.4 million and $3.2 million of total gross unrecognized tax benefits as of December 31, 2018 and 2017, respectively. There were approximately $11.0 million and $3.1 million of unrecognized tax benefits that would affect the effective tax rate in any future period at December 31, 2018 and 2017, respectively. It is reasonably possible that our unrecognized tax benefit could decrease by approximately $6.4 million in 2019, of which $2.3 million will impact our effective tax rate in 2019. The decrease relates to anticipated statute expirations and anticipated resolution of outstanding unrecognized tax benefits.

The following is a tabular reconciliation of unrecognized tax benefits (in thousands) the balance of which is included in other long-term liabilities and other current liabilities in the consolidated balance sheets:

December 31,	2018	2017	2016
Beginning balance	$ 3,171	$3,262	$1,578
Gross increases – acquisitions	20,153	—	—
Gross increases – current period tax positions	36	—	1,902
Gross decreases – current period tax positions	(3)	(73)	(125)
Gross increases – prior period tax positions	2	1	2
Gross decreases – prior period tax positions	(195)	(6)	(5)
Settlements with taxing authorities/lapse of statute of limitations	(781)	(13)	(90)
Ending balance	$22,383	$3,171	$3,262

We record interest on uncertain tax positions in interest expense and penalties in other income, net in our consolidated statements of operations. During the years ended December 31, 2018, 2017 and 2016, we recognized approximately $1.1 million interest and penalty income, $0.2 million interest expense and $0.1 million interest expense, respectively.

Approximately $8.3 million and $0.4 million of accrued interest and penalties related to our uncertain tax position liability was included in other long-term liabilities and accrued expenses and other current liabilities in our consolidated balance sheets at December 31, 2018 and 2017, respectively. The increase in accrued interest and penalties during 2018 was mainly due to the Layne acquisition in which $9.0 million of accrued interest and penalties was recorded.

20. Commitments, Contingencies and Guarantees

Leases: Minimum rental commitments and minimum royalty requirements under all noncancellable operating leases, primarily quarry property, in effect at December 31, 2018 were (in thousands):

Years Ending December 31,	
2019	$20,152
2020	17,798
2021	15,897
2022	13,255
2023	7,707
Later years (through 2046)	8,709
Total	$83,518

Operating lease and equipment rental and royalty expense primarily included in cost of revenue in our consolidated statements of operations was $24.3 million, $16.4 million and $18.2 million in 2018, 2017 and 2016, respectively.

Performance Guarantees

We participate in various joint ventures and line item joint ventures under which each partner is responsible for performing certain discrete items of the total scope of contracted work. See Notes 1, 10 and 14 for further details.

Surety Bonds

We are generally required to provide various types of surety bonds that provide an additional measure of security under certain public and private sector contracts. At December 31, 2018, approximately $3.2 billion of our contract backlog was bonded. Performance bonds do not have stated expiration dates; rather, we are generally released from the bonds after the owner accepts the work performed under contract. The ability to maintain bonding capacity to support our current and future level of contracting requires that we maintain cash and working capital balances satisfactory to our sureties.

21. Legal Proceedings

In the ordinary course of business, we and our affiliates are involved in various legal proceedings alleging, among other things, liability issues or breach of contract or tortious conduct in connection with the performance of services and/or materials provided, the various outcomes of which cannot be predicted with certainty. We and our affiliates are also subject to government inquiries in the ordinary course of business seeking information concerning our compliance with government construction contracting requirements and various laws and regulations, the outcomes which cannot be predicted with certainty.

Some of the matters in which we or our joint ventures and affiliates are involved may involve compensatory, punitive, or other claims or sanctions that, if granted, could require us to pay damages or make other expenditures in amounts that are not probable to be incurred or cannot currently be reasonably estimated. In addition, in some circumstances our government contracts could be terminated, we could be suspended, debarred or incur other administrative penalties or sanctions, or payment of our costs could be disallowed. While any of our pending legal proceedings may be subject to early resolution as a result of our ongoing efforts to resolve the proceedings, whether or when any legal proceeding will be resolved is neither predictable nor guaranteed.

Accordingly, it is possible that future developments in such proceedings and inquiries could require us to (i) adjust existing accruals, or (ii) record new accruals that we did not originally believe to be probable or that could not be reasonably estimated. Such changes could be material to our financial condition, results of operations and/or cash flows in any particular reporting period. In addition to matters that are considered probable for which the loss can be reasonably estimated, disclosure is also provided when it is reasonably possible and estimable that a loss will be incurred or when it is reasonably possible that the amount of a loss will exceed the amount recorded.

Liabilities relating to legal proceedings and government inquiries, to the extent that we have concluded such liabilities are probable and the amounts of such liabilities are reasonably estimable, are recorded in the consolidated balance sheets. The aggregate liabilities recorded as of December 31, 2018 and 2017 related to these matters were immaterial. The aggregate range of possible loss related to (i) matters considered reasonably possible, and (ii) reasonably possible amounts in excess of accrued losses recorded for probable loss contingencies, including those related to liquidated damages, could have a material impact on our consolidated financial statements if they become probable and the reasonably estimable amount is determined.

22. Business Segment Information

As discussed in Note 1, during 2018, we revised our reportable segments, which are the same as our operating segments, as a result of a change in how our chief operating decision maker (our Chief Executive Officer) regularly reviews financial information to allocate resources and assess performance. This change is consistent with our strategic, end-market diversification strategy. Our new reportable segments which correspond to this end-market focus are: Transportation, Water, Specialty and Materials. The Transportation, Water and Specialty end-market segments replace the Construction and Large Project Construction reportable segments with the composition of our Materials segment remaining unchanged except for the addition of proprietary sanitary and storm water rehabilitation products including cured-in-place pipe felt and fiberglass-based lining tubes related to the acquisition of Layne. Prior-year information has been recast to reflect this change.

In addition to business segments, we review our business by operating groups. Our operating groups are defined as follows: (i) California; (ii) Northwest, which primarily includes offices in Alaska, Arizona, Nevada, Utah and Washington; (iii) Heavy Civil, which primarily includes offices in California, Florida, New York and Texas; (iv) Federal which primarily includes offices in California, Colorado, Texas and Guam; (v) Midwest (formerly Kenny less the underground business), which primarily includes offices in Illinois and (vi) Water and Mineral Services (which includes LiquiForce, Layne and the underground business of the former Kenny operating group), which primarily includes offices across the Unites States, Canada and Latin America. Our California, Northwest and Water and Mineral Services operating groups include financial results from our Materials segment.

The Transportation segment focuses on construction and rehabilitation of roads, pavement preservation, bridges, rail lines, airports and marine ports for use mostly by the general public.

The Water segment focuses on water-related construction and water management solutions for municipal agencies, commercial water suppliers, industrial facilities and energy companies. It also provides trenchless cured-in-place pipe rehabilitation.

The Specialty segment focuses on construction of various complex projects including infrastructure / site development, mining, public safety, tunnel and power projects.

The Materials segment focuses on production of aggregates, asphalt and construction related materials as well as proprietary sanitary and storm water rehabilitation products including cured-in-place pipe felt and fiberglass-based lining tubes both for internal use and for sale to third parties.

The accounting policies of the segments are the same as those described in the Summary of Significant Accounting Policies (see Note 1). We evaluate segment performance based on gross profit or loss, and do not include selling, general and administrative expenses or non-operating income or expense. Segment assets include property and equipment, intangibles, goodwill, inventory and equity in construction joint ventures.

Summarized segment information is as follows (in thousands):

Years Ended December 31,	Transportation	Water	Specialty	Materials	Total
2018					
Total revenue from reportable segments	$1,976,743	$ 338,250	$ 626,619	$ 522,987	$3,464,599
Elimination of intersegment revenue	—	—	—	(146,185)	(146,185)
Revenue from external customers	1,976,743	338,250	626,619	376,802	3,318,414
Gross profit	190,045	59,574	90,888	48,685	389,192
Depreciation, depletion and amortization	26,715	25,779	24,017	24,015	100,526
Segment assets	399,674	317,633	142,699	353,208	1,213,214
2017					
Total revenue from reportable segments	$1,947,420	$ 133,699	$ 615,818	$ 467,140	$3,164,077
Elimination of intersegment revenue	—	—	—	(174,364)	(174,364)
Revenue from external customers	1,947,420	133,699	615,818	292,776	2,989,713
Gross profit	170,135	12,270	87,446	45,082	314,933
Depreciation, depletion and amortization	22,228	2,314	9,062	22,393	55,997
Segment assets	372,050	7,241	96,845	282,709	758,845
2016					
Total revenue from reportable segments	$1,626,786	$ 161,282	$ 465,323	$ 425,029	$2,678,420
Elimination of intersegment revenue	—	—	—	(163,803)	(163,803)
Revenue from external customers	1,626,786	161,282	465,323	261,226	2,514,617
Gross profit	161,829	19,885	82,458	37,198	301,370
Depreciation, depletion and amortization	22,601	2,140	4,871	23,437	53,049
Segment assets	375,951	9,446	80,901	282,472	748,770

As of December 31, 2018, segment assets include $15.1 million of property and equipment located in foreign countries (primarily Latin America). As of December 31, 2017 and 2016, all segment assets were located in the United States. During the year ended December 31, 2018, revenue derived from foreign countries (primarily Latin America) was $27.0 million. During the year ended December 31, 2017, revenue derived from foreign countries was immaterial.

A reconciliation of segment gross profit to consolidated income before provision for income taxes is as follows (in thousands):

Years Ended December 31,	2018	2017	2016
Total gross profit from reportable segments	$389,192	$314,933	$301,370
Selling, general and administrative expenses	272,776	220,400	217,374
Acquisition and integration expenses	60,045	—	—
Gain on sales of property and equipment	(7,672)	(4,182)	(8,358)
Total other income	(112)	(5,748)	(4,008)
Income before provision for income taxes	$ 64,155	$104,463	$ 96,362

A reconciliation of segment assets to consolidated total assets is as follows (in thousands):

December 31,	2018	2017	2016
Total assets for reportable segments	$1,213,214	$ 758,845	$ 748,770
Assets not allocated to segments:			
Cash and cash equivalents	272,804	233,711	189,326
Short-term and long-term marketable securities	66,100	132,790	127,779
Receivables, net	473,246	479,791	419,345
Other current assets, excluding segment assets	268,485	140,478	113,010
Property and equipment, net, excluding segment assets	32,903	29,242	32,397
Investments in affiliates	84,354	38,469	35,668
Other noncurrent assets, excluding segment assets	65,495	58,652	67,158
Consolidated total assets	$2,476,601	$1,871,978	$1,733,453

Quarterly Financial Data - Unaudited

The following table sets forth selected unaudited quarterly financial information for the years ended December 31, 2018 and 2017. This information has been prepared on the same basis as the audited consolidated financial statements and, in the opinion of management, contains all adjustments necessary for a fair statement thereof. Net income (loss) per share calculations are based on the weighted average common shares outstanding for each period presented. Accordingly, the sum of the quarterly net income (loss) per share amounts may not equal the per share amount reported for the year.

QUARTERLY FINANCIAL DATA

(unaudited - dollars in thousands, except per share data)

2018 Quarters Ended	December 31,	September 30,	June 30,	March 31,
Revenue	$892,325	$1,055,591	$807,119	$563,379
Gross profit	108,049	144,491	80,369	56,283
As a percent of revenue	12.1%	13.7%	10.0%	10.0%
Net income (loss)	$ 10,387	$ 59,097	$ (6,081)	$ (9,662)
As a percent of revenue	1.2%	5.6%	(0.8)%	(1.7)%
Net income (loss) attributable to Granite	$ 6,546	$ 55,672	$ (8,385)	$ (11,423)
As a percent of revenue	0.7%	5.3%	(1.0)%	(2.0)%
Net income (loss) per share attributable to common shareholders:				
Basic	$ 0.14	$ 1.20	$ (0.20)	$ (0.29)
Diluted	$ 0.14	$ 1.17	$ (0.20)	$ (0.29)

2017 Quarters Ended	December 31,	September 30,	June 30,	March 31,
Revenue	$801,274	$957,126	$762,913	$468,400
Gross profit	100,707	114,530	74,570	25,126
As a percent of revenue	12.6%	12.0%	9.8%	5.4%
Net income (loss)	$ 35,325	$ 48,055	$ 16,272	$ (23,851)
As a percent of revenue	4.4%	5.0%	2.1%	(5.1)%
Net income (loss) attributable to Granite	$ 32,773	$ 45,982	$ 14,133	$ (23,790)
As a percent of revenue	4.1%	4.8%	1.9%	(5.1)%
Net income (loss) per share attributable to common shareholders:				
Basic	$ 0.82	$ 1.15	$ 0.35	$ (0.60)
Diluted	$ 0.81	$ 1.14	$ 0.35	$ (0.60)

CORPORATE INFORMATION

BOARD OF DIRECTORS

Claes G. Bjork
Chairman of the Board
Retired Chief Executive Officer
Skanska AB, Sweden

James H. Roberts
President and Chief Executive Officer
Granite Construction Incorporated

James W. Bradford, Jr.
Retired Dean and Ralph Owen Professor for the Practice of Management, Owen School of Management, Vanderbilt University

David C. Darnell
Retired Vice Chairman
Global Wealth & Investment Management
Bank of America Corporation

Patricia D. Galloway
Chairman, Pegasus Global Holdings, Inc.

David H. Kelsey
Retired Chief Financial Officer, Verdezyne, Inc.

Alan P. Krusi
Retired President, Strategic Development
AECOM Technology Corporation

Jeffrey J. Lyash
President and Chief Executive Officer
Tennessee Valley Authority

Celeste B. Mastin
Chief Executive Officer
Petro Choice Lubrication Solutions

Michael F. McNally
Retired President and Chief Executive Officer
Skanska USA Inc.

Gaddi H. Vasquez
Retired Senior Vice President of Government Affairs, Edison International and Southern California Edison

ANNUAL MEETING OF SHAREHOLDERS

Granite's Annual Meeting of Shareholders will be held at 10:30 a.m. PDT on June 6, 2019, at the Carmel Valley Ranch, 1 Old Ranch Road, Carmel, CA 93923. Proxy materials are available on our website at investor.graniteconstruction.com or upon written request to:

Investor Relations
Granite Construction Incorporated
Box 50085
Watsonville, CA 95077-5085

OFFICERS

James H. Roberts
President and Chief Executive Officer

Jigisha Desai
Senior Vice President and
Chief Financial Officer

Philip M. DeCocco
Senior Vice President of Human Resources

M. Craig Hall
Senior Vice President, General Counsel,
Corporate Compliance Officer and Secretary

Kyle T. Larkin
Senior Vice President and Group Manager

James D. Richards
Senior Vice President and Group Manager

Dale A. Swanberg
Senior Vice President and Group Manager

Mathew C. Tyler
Senior Vice President and Group Manager

Richard A. Watts
Senior Vice President and Group Manager

Michael W. Barker
Vice President, Controller and
Assistant Financial Officer

Kenneth B. Olson
Vice President, Treasurer and
Assistant Financial Officer

DIVIDEND POLICY

The Company's Board of Directors has declared a quarterly cash dividend of $0.13 per share of common stock payable on April 15, 2019, to shareholders of record as of March 29, 2019. Declaration and payment of dividends are at the sole discretion of the Board, subject to limitations imposed by Delaware law, and will depend on the Company's earnings, capital requirements, financial condition, and other such factors as the Board deems relevant.

ELECTRONIC DEPOSIT OF DIVIDENDS

Registered holders may have their quarterly dividends deposited to their checking or savings account free of charge. Call Computershare at (877) 520-8549 for U.S. residents, or (732) 491-0616 for non-U.S. residents to enroll.

FORM 10-K

A copy of the Company's Annual Report on Form 10-K, which is filed with the Securities and Exchange Commission, is available free of charge on our website or upon written request to:

Investor Relations
Granite Construction Incorporated
Box 50085
Watsonville, CA 95077-5085

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

PricewaterhouseCoopers LLP
Three Embarcadero Center
San Francisco, CA 94111

REGISTRAR AND TRANSFER AGENT

Computershare
250 Royall Street
Canton, MA 02021
(877) 520-8549 (U.S.)
(732) 491-0616 (non-U.S.)

SHAREHOLDER INQUIRIES

Ronald E. Botoff
Vice President of Investor Relations
& Government Affairs
(831) 728-7532
Ronald.Botoff@gcinc.com

CERTIFICATIONS

Granite's Chief Executive Officer (CEO) and Chief Financial Officer (CFO) have each submitted certifications concerning the accuracy of financial and other information in Granite's Annual Report on Form 10-K, as required by Section 302(a) of the Sarbanes-Oxley Act of 2002.

After our 2019 Annual Meeting of Shareholders, we intend to file with the New York Stock Exchange (NYSE) the CEO certification regarding our compliance with the NYSE's corporate governance listing standards as required by NYSE Rule 303A.12(a). Last year's certification was filed on June 11, 2018.

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