



# 2019

Sustainability Report

**NORTHROP  
GRUMMAN**



# Our Values

We, the women and men of Northrop Grumman, are guided by the following Values. We want our decisions and actions to demonstrate these Values. We believe that putting our Values into practice creates long-term benefits for shareholders, customers, employees, suppliers and the communities we serve.

## Quality

Our products and services are best-in-class in terms of value received for money paid. We deliver excellence, strive for continuous improvements and respond vigorously to change. Each of us is responsible for the quality of whatever we do.

## Customer Satisfaction

We are dedicated to satisfying our customers. We believe in respecting our customers, listening to their requests and understanding their expectations. We strive to exceed their expectations in affordability, mission capability, quality and on-time delivery.

## Leadership

Northrop Grumman's leadership is founded on talented employees effectively applying advanced technology, innovative manufacturing and sound business management. We add more value at lower cost with faster response. We each lead through our competence, creativity and teamwork.

## Integrity

We are each personally accountable for the highest standards of behavior, including honesty and fairness in all aspects of our work. We fulfill our commitments as responsible citizens and employees. We treat customers and company resources with the respect they deserve. We comply with all applicable laws and regulations.

## People

We treat one another with respect and take pride in the significant contributions that come from our diversity of individuals and ideas. Our continued success requires us to provide the education and development needed to help our people grow. We are committed to openness and trust in all relationships.

## Safety

We work to protect the health and well-being of our employees and to provide our customers with high quality, reliable and safe products. We are committed to safe operations and are diligent in our safety practices and processes.

## Suppliers

We give our suppliers the same respect we show our customers. Our suppliers deserve fair and equitable treatment, clear agreements and honest feedback on performance. We consider our suppliers' needs in conducting our business.



# To Our Stakeholders

At Northrop Grumman, we are driven to solve the toughest challenges and to define what is possible. In support of our customers' missions, we help protect our global communities and advance human discovery. And we do so because of the strength of our diverse and innovative team, which comprises individuals from many backgrounds, personal passions and disciplines.

With this year's report, we are adopting the title of Sustainability. This intentional change reflects our company's commitment to integrating environmental, social and governance practices across our business, and delivering sustainable value to all of our stakeholders.

This Sustainability Report provides transparency into our goals, commitments and achievements. It highlights the progress we continue to make along our sustainability journey, and describes what we're doing to help protect the environment, engage each employee and support our communities, while creating long-term value for shareholders.

I want to thank our employees for continuing to demonstrate the dedication, grit and innovation that defines what it means to be a part of the Northrop Grumman community. Through it all, we are guided by our values that define who we are as a company, and hold ourselves to the highest standards of ethics and integrity.

Our employees have bold ideas, courage and a pioneering spirit to invent the future. Together, we can help ensure a promising tomorrow.

Kathy J. Warden, Chairman,  
Chief Executive Officer and President

## ..... 2019 Highlights .....



### Company

- 12% increase in sales; 5% increase in operating income
- Returned \$1.6B to shareholders through dividends and share repurchases, including a 10% increase in our quarterly dividend
- \$953M in R&D investments
- 38.4% subcontractor spending to small businesses (\$4.3B)
- Included on the Dow Jones Sustainability Index North America
- Ranked by Indeed as one of the 50 Top-Rated Workplaces
- Recognized as a "Genius" company on the inaugural Gartner TalentIQ Index
- Received the highest possible score on the new Defense Industrial Base Cybersecurity Assessment Center for our United States Network



### People

- We met our 5-year employee diversity goals in 2019, and since 2010, have achieved significant progress:
  - Females (Vice President): from 16% to 33%
  - Females (Early- and Mid-level Management): from 22% to 28%
  - People of Color (Vice President): from 11% to 18%
  - People of Color (Early- and Mid-level Management): from 19% to 29%
- One of DiversityInc's Top 50 Companies for Diversity and number one for both veterans and people with disabilities
- "Best Places to Work for LGBTQ Equality" and perfect score on the Corporate Equality Index



### Environment

- 35.5% reduction in greenhouse gas emissions since 2010, exceeding our year-end 2020 goal of 30%
- 146M gallons in annual water savings from projects implemented in 2019, achieving a reduction from our base year of nearly 10%
- Maintained an A- leadership score in CDP's climate change program



### Citizenship

- \$34.8M direct to programs from Northrop Grumman, the Northrop Grumman Foundation and our employees
- Named as one of Corporate Responsibility Magazine's 100 Best Corporate Citizens

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# COMPANY OVERVIEW

Northrop Grumman is a modern-day pioneering company. Defining what is possible is our purpose, and discovery and innovation are at the heart of everything we do. Whether it's an autonomous submarine that detects mines without putting lives at risk, digital walls that protect physical structures, the world's first stealth bomber or the universe's most powerful space telescope, we are driven to solve the toughest challenges. We show our customers what is possible through a performance framework and a culture that balances agility and affordability with quality and safety.

In September 2019, we announced organization changes to our operating sectors that went into effect on January 1, 2020 to better align the company's broad portfolio to serve our customers' needs. The four new operating sectors are Aeronautics Systems, Defense Systems, Mission Systems and Space Systems.

## Aeronautics Systems

Aeronautics Systems is an innovative manned and autonomous air systems provider, with a proven track-record of systems engineering, manufacturing excellence and reliability. In addition to long-duration franchise manned programs like B-21, B-2, F-35, E-2D and unmanned programs like Global Hawk and Triton, Aeronautics Systems also includes aerostructures for military and commercial customers.

## Defense Systems

Defense Systems brings together a broad spectrum of critical technology services, sustainment and modernization, integrated battle command systems, directed energy, tactical weapons and information systems. Defense Systems is focused on addressing evolving threats and quick-turn requirements for a wide variety of national security, military and civilian customers.

## Mission Systems

Mission Systems is a C4ISR technology leader in open, cyber-secure, software-defined systems for defense and intelligence applications across multiple domains. As a leader in Agile software development for defense applications, Mission Systems combines superior hardware and software capabilities to deliver differentiated solutions for our national security customers. Mission Systems' advanced capabilities and domain expertise are also key competitive differentiators that we leverage across the entire company.

## Space Systems

Space Systems is a leader in delivering end-to-end mission solutions through the design, development, integration, production and operation of space, launch and missile systems. Our new Space Systems sector unifies our significant space and launch capabilities in a single organization and provides a platform for accelerated development of innovative and affordable offerings for our national security, civil and commercial customers.

## ..... Our Solution Domains .....



Air



Cyber



Land



Sea



Space

# Northrop Grumman at a Glance 2019

- NYSE Symbol: NOC
- Headquarters: Falls Church, Virginia, U.S.
- Annual Sales: \$33.8 billion

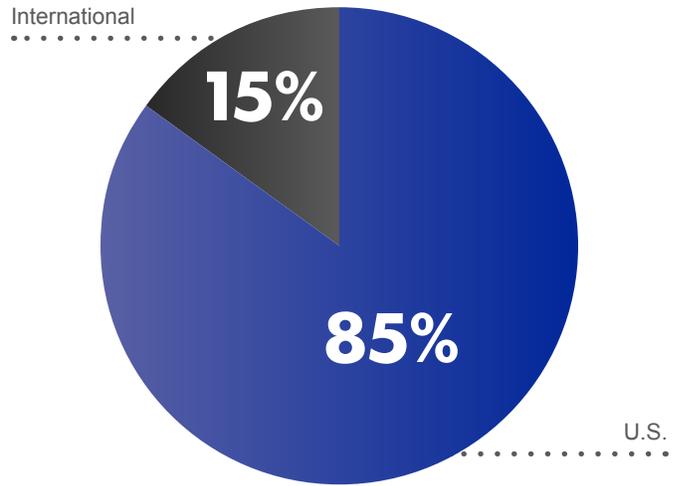
90K

APPROXIMATE NUMBER OF EMPLOYEES

53.8M

SQUARE FEET OF FLOOR SPACE

## 2019 Revenue Breakdown



## Solid Financial Performance

We use a balanced scorecard to reflect financial and non-financial performance criteria important to our shareholders, customers and employees. Our financial performance metrics include measures of operating margin dollars and rate, net income growth and cash from operations. Our non-financial metrics are quality, customer satisfaction, engagement and inclusion, operational efficiency, diversity, environmental sustainability and safety. In 2019, we achieved 167% on our balanced scorecard, reflecting performance that, in the aggregate, exceeded our financial and non-financial goals.

MATERIAL ISSUE

### Financial Performance

#### Why It's Important

Robust financial performance allows us to invest in our business globally while delivering innovative and affordable solutions for our customers.

# Material Issues

Through our strategy and sustainability reporting work, Northrop Grumman has identified select topics that are of importance to our business and to our stakeholders. This Sustainability Report addresses our management approach and our performance within each of these areas. We conducted a materiality assessment in 2017, which included a survey and workshops with employees across different levels and sectors. We are currently conducting an update of our materiality assessment with the aim of refreshing and refining our understanding of key stakeholder expectations during 2020.

Our report follows the Global Reporting Initiative (GRI) Standards, a voluntary framework widely used to promote transparency in environmental, social and governance reporting. Consistent with GRI’s terminology, material issues include those that “reflect the organization’s significant economic, environmental and social impacts; or substantively influence the assessments and decisions of stakeholders.”

Throughout this report, we use the word “material” consistent with GRI terminology. We do not use the term as defined by the U.S. Securities and Exchange Commission or other securities laws.

Material Issue	Definition for Northrop Grumman
<b>Corporate Citizenship</b>	Includes community engagement, philanthropy and volunteering with a primary focus on building a STEM-capable pipeline.
<b>Customer Satisfaction</b>	Ensuring customers' expectations are met or exceeded, and customer concerns are acknowledged and addressed as appropriate. Includes issues with affordability and product environmental attributes (e.g., contains recycled content, emissions when in use by customer, etc.).
<b>Data Privacy</b>	The protecting and safeguarding of Personal Information we collect, process and/or maintain; respecting the privacy of the individuals to whom it relates consistent with applicable laws and contractual obligations.
<b>Diversity and Inclusion</b>	The collective mixture of differences in the workplace that includes individual and organizational characteristics, values, beliefs, experiences, backgrounds, preferences and behaviors.
<b>Environment</b>	A broad view of environment, in particular emissions and climate change, resource efficiency, compliance and management systems, and remediation at Northrop Grumman.
<b>Ethics and Integrity</b>	Includes anti-corruption, influencing the development of public policy, ethical business development, employee behavior, employee conflict of interest.
<b>Financial Performance</b>	Northrop Grumman's financial performance (e.g., sales, income and earnings, cash flow and other financial metrics in the Annual Report).
<b>Health and Safety</b>	Includes the health and safety of Northrop Grumman employees and contractors with a focus on accident prevention.
<b>Product and Service Quality</b>	Quality of product and services; also includes addressing of counterfeit parts.
<b>Program Performance</b>	Includes a number of components related to satisfying our customers—respecting our customers, listening to their requests and understanding their expectations.
<b>R&amp;D and Innovation</b>	Developing new products and services and fostering a culture of innovation to meet evolving customer mission needs and support top line growth.
<b>Regulatory and Legal Compliance</b>	Compliance with regulations across a full range of functional areas (and geographies), includes EHS, affirmative action, equality, equal employment and equal access requirements, reporting on use of company resources, and anti-corruption laws.
<b>Supply Chain</b>	Includes supply base diversity, growing the supply chain internationally, as well as managing cost, quality and compliance across the supply base.
<b>Talent Management</b>	Includes new STEM talent pipeline development, recruitment, development and engagement, retention, and managing attrition.

# Stakeholder Engagement

Our key stakeholders include academia, community, customers, employees, government, industry partners, policymakers, professional associations, shareholders and suppliers. We engage extensively with stakeholder groups through various means to promote understanding and dialogue regarding management of these material issues.

Annually, as part of our Sustainability Report preparation, we convene an External Review Panel to provide feedback on our programs and transparency. This direct input is helpful as we continue to make improvements in our disclosure and management practices.

## Summary of Key Stakeholder Engagement Activities

Who We Engage	How We Engage	Material Issues of Stakeholder Interest
Community	Review programs and initiatives in collaboration with community partners and senior leadership; develop community engagement plans that align with strategic priorities	<ul style="list-style-type: none"> <li>■ Corporate Citizenship</li> <li>■ Environment</li> <li>■ Diversity and Inclusion</li> </ul>
	Collaborate with leaders from organizations in our targeted areas, including military and veteran, STEM education and diversity-focused organizations to understand key issues and needs	
Customers	Engage customers on establishing program goals and priorities	<ul style="list-style-type: none"> <li>■ Ethics and Integrity</li> <li>■ Program Performance</li> <li>■ Product and Service Quality</li> <li>■ Customer Satisfaction</li> <li>■ R&amp;D and Innovation</li> </ul>
	Collaborate with government and industry partners to develop and drive common strategies and standards that support program performance, foster innovation and reduce supply chain risk	
Employees	Consult and collaborate with employees through a variety of ways, including annual employee survey, Employee Resource Groups, Global and Sector Diversity and Inclusion Committees and Veterans Inclusion committees	<ul style="list-style-type: none"> <li>■ Talent Management</li> <li>■ Diversity and Inclusion</li> <li>■ Health and Safety</li> <li>■ Ethics and Integrity</li> <li>■ Corporate Citizenship</li> </ul>
	Offer volunteer opportunities and programs such as matching gifts and payroll contributions to charities	
Industry Partners	Engage with and represent the company on industry working groups addressing security stakeholder topics such as critical technology protection, controlled unclassified information, insider threats and personnel security clearance	<ul style="list-style-type: none"> <li>■ Supply Chain</li> <li>■ Environment</li> <li>■ Data Privacy</li> </ul>
	Participate in industry meetings with various nonprofit and government organizations	
Shareholders	Engage with investment leads at actively managed shareholders	<ul style="list-style-type: none"> <li>■ Financial Performance</li> <li>■ Ethics and Integrity</li> <li>■ Regulatory and Legal Compliance</li> <li>■ Environment</li> <li>■ Diversity and Inclusion</li> <li>■ Corporate Citizenship</li> </ul>
	Meet regularly with the governance leads of our largest shareholders	
Suppliers	Host supplier outreach events and offer mentoring programs	<ul style="list-style-type: none"> <li>■ Supply Chain</li> <li>■ Ethics and Integrity</li> <li>■ Product and Service Quality</li> </ul>
	Sponsor academic, customer and industry activities that support small business growth and development	

## OYSTER MONITORING CHALLENGE

# Sustainability Priorities in Action: Innovation, Employees and Environment

By leveraging the Northrop Grumman Innovation network and evolving how we partner with the community, employees are being provided unique opportunities to develop their skills and have a positive impact. This program is just one great example of Northrop Grumman's ability and commitment to make a difference for our world and our people.



# 10 BILLION

OYSTERS

Northrop Grumman has partnered with the Chesapeake Bay Foundation to support the goal of planting 10 billion oysters in the Chesapeake Bay by 2025. Healthy oyster populations provide vital water filtering capacity, which benefits water quality and improves the Bay's ecosystem.

## Innovating for the Environment

# 40

CHALLENGE  
TEAM MEMBERS

Northrop Grumman employees are putting their talents to work, leveraging commercial off-the-shelf technologies in new ways for this initiative. Current oyster data collection methods are cumbersome, labor intensive and expensive. Northrop Grumman employees are developing sensing and analysis solutions to reduce that cost and increase efficiency.



## Engineering the Solution

**\$7,000**  
PER DAY

REDUCED COSTS →

LESS THAN  
**\$500**  
PER DAY

## The Technology

Teams from Northrop Grumman have made prototypes of the solution using a light-field camera, LiDAR, hydrophones and SONAR, and are incorporating artificial intelligence, teaching the systems how to recognize what an oyster reef looks and sounds like. The teams will then ruggedize their technology and add them to their vehicle of choice, which could be a rover or a submersible autonomous vehicle.

  
UNDERWATER  
AUTONOMOUS  
VEHICLES

  
LIDAR

  
ACOUSTICS  
MONITORING

  
IMAGE  
PROCESSING

## Timeline



Learn more about this project and others on our [Technology for Conservation](#) webpage.



# GOVERNANCE

We are committed to maintaining the highest standards in corporate governance, ethics, integrity and compliance. We require our employees and business partners to act with integrity and in compliance with all ethical and legal responsibilities and provide them with relevant tools and knowledge.

## Board of Directors

The Board of Directors fosters the long-term success of Northrop Grumman while promoting the interests of our shareholders. As of December 31, 2019, the Board included 12 directors, 11 of whom are independent. In 2019, the Board elected Kathy Warden, Chief Executive Officer and President, to also serve as Chairman, effective August 1, 2019, succeeding Wes Bush. The Board represents a diverse group of accomplished directors who bring a wide range of experience to the company.

Our directors possess the reputation, education, professional background and particular skills beneficial to the effectiveness of our Board and to our shareholders. The Board conducts a review of its performance annually at the full board level, within each committee and at the individual director level. These processes are intended to help ensure and enhance the effective operation of the Board. The Lead Independent Director meets with each director individually to discuss the results of his or her individual assessment. Our directors are required to have a significant financial interest in Northrop Grumman through stock ownership to help reaffirm their interests align with those of the company's shareholders.

The Board holds its meetings at company locations other than our corporate headquarters on a regular basis. This gives the directors a first-hand view of different elements of our business, and provides an opportunity for them to interact with local management and employees at various levels.

### ..... Board Highlights .....

33%

WOMEN

25%

PEOPLE OF COLOR

7.3

YEARS OF AVERAGE TENURE

## Risk Oversight

The Board is responsible for overseeing our enterprise risk management activities and each of our Board committees assists the Board in this role. The Board also receives reports on the activities of our Enterprise Risk Management Council, which seeks to ensure effective mitigation programs are in place for each of the most significant risks to our business.

## Sustainability Oversight

Our Board of Directors provides leadership and oversight with respect to environmental, social and governance (ESG) issues and practices and receives reports from management on these issues. The full Board regularly receives reports from the Committees and management, meets with employees across our business and addresses in depth a full range of issues that fall within the sustainability umbrella. Our commitment to strong corporate responsibility and sustainability is also demonstrated by the incorporation of non-financial ESG performance metrics into our annual incentive compensation program. These metrics include quality, customer satisfaction, engagement and inclusion, operational efficiency, diversity, environmental sustainability and safety.

For more information regarding the Board and the roles and responsibilities of its standing committees, please see our 2020 Proxy Statement and our committee charters on the Northrop Grumman [website](#).

# Governance Practice Highlights

- All Board committees comprised entirely of independent directors
- Annual election of all directors
- Lead independent director with significant and clearly defined responsibility
- Majority voting for directors in uncontested elections
- Proxy access bylaw
- Annual Board and committee self-evaluations
- Ability of shareholders to act by written consent
- Ability of shareholders to call a special meeting
- Ability of shareholders to communicate and meet directly with our management and directors
- Annual advisory vote on executive compensation
- Recoupment policy for incentive compensation
- Stock ownership guidelines for directors and executive officers
- Policy prohibiting hedging, pledging and other specified derivative transactions involving Northrop Grumman stock by directors, executive officers and those receiving performance-based compensation

### ..... Standing Committees of the Board .....



Audit and Risk



Policy



Governance



Compensation



# Ethics

Our proactive approach to ethics and compliance fosters a workforce that takes ownership of our ethical culture, conducts itself with integrity and lives our company Values. We pledge to conduct ourselves with integrity to support an internal culture of innovation and trust. Our ethical obligations extend to all employees and to Northrop Grumman business partners anywhere in the world. Our [Ethics and Business Conduct webpage](#) has more information on our policies and practices.



We use positive reinforcement with our ongoing “Ethics: Own It, Live It, Lead It” award for employees who demonstrate integrity and inspire others to do the right thing.

Northrop Grumman’s culture is shaped by our company Values. We want our employees to reflect these Values and to act ethically at all times. Our values-based ethics program goes beyond the minimum standards to create and sustain an open environment and a “speak up” culture that fosters trust, helps employees achieve goals and improves our performance.

The ethics organization at Northrop Grumman plays an important role in achieving and sustaining our company’s ethical reputation. In addition to the corporate office that defines and implements ethics strategy and initiatives, there are full-time ethics directors and advisors to assist at the sector level.

Proactive and reactive program elements support and sustain a strong ethical culture. Our Values, Standards of Business Conduct, policies and procedures give our employees a foundation to do what is right. We communicate regularly with all employees through:

- Annual ethics letter from our CEO
- Ethics newsletters
- Enterprise communications and brochures

# Training

Employees participate in annual ethics and compliance training. In 2019, we provided interactive enterprise training on our Standards of Business Conduct to reinforce and sustain our culture of integrity. This training linked employees’ everyday actions at work to the impact they have on Northrop Grumman’s high ethical standards by stressing that personal actions matter and integrity should be practiced daily. For our global employees, this training content is available in Chinese, Dutch, Flemish, French, German, Italian and Polish.

Training emphasizes examples of expected ethical behavior, addressing topics such as:

- Speaking up and voicing concerns;
- Avoiding actual or perceived conflicts of interest;
- Understanding company guidelines on accepting gifts, entertainment and hospitality;
- Working with third parties;
- Preventing workplace harassment with an emphasis on our company Values; and
- Recordkeeping.

The training also reinforces manager responsibilities for leading by example, setting expectations, guiding employees and being available and responsive.

U.S. and many international employees are required to annually disclose any conflicts of interest, and all employees certify that they have read, understand and will comply with the Northrop Grumman Standards of Business Conduct.

## MATERIAL ISSUE

# Ethics and Integrity

## Why It’s Important

Northrop Grumman has a strong ethical reputation in the industry. Our leaders create and encourage an open and ethical work climate and lead by example. Operating with integrity helps us maintain our standing as a highly regarded and trusted corporate partner.



## Business Conduct Officers: A Global Network

Northrop Grumman has more than 140 business conduct officers located at major company sites globally. These individuals, appointed by management and our ethics leadership team, are broadly trained in Northrop Grumman policies and procedures. In addition to their full-time positions, they are responsible for promoting the values and ethical culture within Northrop Grumman and providing guidance to employees and management on ethics and compliance related issues and the Standards of Business Conduct.

To develop and sustain this strong global network, we updated our training for new business conduct officers in 2019. We also held a series of regional two-day workshops to give our business conduct officers an opportunity to discuss challenges, share best practices and lessons learned and develop strategic plans for program enhancements. Over 120 business conduct officers, representing 12 countries, participated in these regional events hosted in London, U.K., Canberra, Australia and Falls Church, Virginia, with executive leadership. Workshop briefings included compliance topics, workplace culture, emerging risk areas and ethics data and trends. This regional approach helped address the needs and challenges of a global community.

**Putting our Values into practice creates long-term benefits for shareholders, customers, employees, suppliers and the communities around the world where we live and work.**

## Our “Speak-Up Culture”

As a proactive approach to sustaining our shared responsibility to maintain and enhance our culture, we strive to ensure our employees feel that it is safe to speak up, challenge how things are done and raise concerns without fear of retribution and with independent and objective review. Training and continued communications encourage our employees to raise concerns or questions through their managers, their business conduct officers, members of our human resource or law departments or through the OpenLine reporting system. These reporting channels provide resources for employees, business partners, suppliers and other stakeholders to seek guidance on ethics questions and report suspected violations of law or company policy.

Our “Speak Up—We’re Listening” OpenLine posters, with contact information for local business conduct officers and the OpenLine, are prominently displayed at all Northrop Grumman facilities and serve to reinforce our commitment to integrity. Posters in local languages are available where applicable.

Company management establishes and reinforces our culture, and our Board and its committees are actively engaged in providing oversight. Our annual employee engagement survey, managed by a third party, gives employees the opportunity to provide candid feedback on many aspects of our culture—including ethics and integrity.

Northrop Grumman requires all employees to understand their ethical and legal obligations and to conduct themselves in full compliance with the company’s Values, Standards of Business Conduct, policies and procedures. This personal commitment remains critical for sustaining the company’s high-performance culture and executing the company’s strategic goals. The company’s non-retaliation policy, prominently posted online and in brochures, clearly states zero tolerance of direct or indirect retaliation against any individual who reports a concern in good faith or based on reasonable grounds.

# Responsible Business Practices

The unwavering commitment of our management to a strong culture of integrity is the foundation of our ethics and compliance program. Our leadership demonstrates its commitment regularly through communications and actions. Clear written guidance is available to our officers, directors and employees. In addition to our Standards of Business Conduct, we have a comprehensive set of policies and procedures that establishes clear roles and responsibilities to maintain strong internal controls, as well as communicates standards to which we hold employees accountable. To support our compliance program, we use internal teams that work to provide oversight and resources. We draw upon stakeholders and expertise from our Chief Compliance Officer, Corporate Compliance Council, Law Department, Global Corporate Responsibility, Ethics and Internal Audit teams.

**Northrop Grumman is an active member of the Defense Industry Initiative on Business Ethics and Conduct and the International Forum on Business Ethical Conduct, organizations that promote and benchmark best practices.**

We devote significant resources to evaluating and carefully selecting third parties, including sales representatives, partners, consultants, suppliers and teammates. Third parties must share our commitment to doing business with the highest levels of ethics and integrity and in compliance with applicable laws and regulations and we clearly communicate these expectations. We collaborate across functions and sectors to anticipate and mitigate risks. We also work to improve the efficiency and effectiveness of the compliance program.

## MATERIAL ISSUE

# Regulatory and Legal Compliance

## Why It's Important

Compliance with laws and regulations is a business and legal imperative. It also reflects our shared culture of strong ethics and integrity, which in turn provides the foundation for our performance and growth.

## Product Sales

Northrop Grumman has robust procedures to help ensure we do not do business in countries or sell products to customers that are not properly approved by our government, or, even if permissible, where the risk—to human rights or, more broadly, the reputation of the company—is too significant. Our focus globally is on doing business in a manner consistent with our Values, as well as all applicable laws. We work to incorporate social responsibility and customer support into decision-making, including the products we design, develop, manufacture and sustain. Today, Northrop Grumman does not manufacture cluster munitions, anti-personnel mines, chemical or biological weapons.

## Anti-Corruption Compliance

At Northrop Grumman, anti-corruption compliance is built on and reflects our corporate values. We strive to conduct our business consistent with high ethical standards and in full compliance with applicable anti-corruption laws. We compete in the global marketplace based on the quality of our products and services and the value we create for our customers by offering those products and services at a competitive price. We have zero tolerance for bribes, kickbacks or any other illegal business practices and require our employees to ask questions or raise concerns on ethics and compliance issues that they believe may be contrary to our values. Our [Anti-Corruption Compliance webpage](#) provides additional details.



## Human Rights

Northrop Grumman is committed to maintaining a strong culture with a deep respect for individuals and human rights. Our Human Rights Policy highlights our commitment to treat all of our stakeholders—including our employees, customers, shareholders and suppliers, and the communities in which we operate—with dignity, respect and equality, and also to partner with our stakeholders to help them to do the same. We prohibit unlawful discrimination, harassment or retaliation. Our Human Rights Policy also covers freedom of association, fair working conditions, ethical procurement practices, health and safety and protection of the environment. We require our partners and suppliers in our worldwide supply chain to share our commitment, including through our [Supplier Standards of Business Conduct](#).

Northrop Grumman recently released an enhanced [Human Rights Policy](#) to better reflect the company's commitment. The revised policy also addresses our training, communications, reporting, investigating, oversight and assessment of our human rights program. We also established a Human Rights Working Group to help ensure our human rights program is being implemented effectively and is achieving our goals.

The Board of Directors oversees the company's commitment to human rights. The Policy Committee has specific responsibility to provide oversight of the company's human rights program, including reviewing and making recommendations for enhancements, as appropriate. The Policy Committee receives reports from our Vice President, Global Corporate Responsibility, and chair of the Human Rights Working Group, on how we are implementing our Human Rights Policy and to address any areas of concern.

## Anti-Human Trafficking and Forced Labor

We fully support the elimination of human trafficking and forced labor from the supply chain and do not tolerate trafficking in persons in the U.S. or globally. Suppliers must comply with all applicable local laws in the country or countries in which they operate, as well as comply with our standard terms and conditions, which expressly prohibit trafficking in persons and the use of forced labor. We provide our employees and suppliers with targeted training and awareness on human trafficking and forced labor through various methods, including online training modules, corporate communication campaigns, ethics articles, posters at applicable work sites and postings on Northrop Grumman websites. For more information, please see our [Anti-human Trafficking and Slavery Statement](#) as well as our [Anti-Trafficking Supplier Letter and Training](#) available online.

## Responsible Sourcing of Materials/Conflict Minerals

We are committed to the responsible sourcing of minerals in our supply chain. Suppliers must comply with applicable laws and regulations regarding conflict minerals (tantalum, tin, tungsten and gold) and assist us in meeting our obligations under law and regulation. We file our report annually with the United States Securities and Exchange Commission (SEC) regarding the use of conflict minerals. We review our process for opportunities to improve our conflict minerals due diligence and oversight.

In 2019, we issued communications to our suppliers that provided information on our conflict minerals disclosure, reporting requirements and compliance expectations. As a result, we improved visibility into our supply chain sourcing practices regarding conflict minerals. Please see our [Conflict Minerals Statement](#) available online.

# Northrop Grumman OpenLine

The OpenLine is a valuable resource where employees, business partners, suppliers and other stakeholders can seek guidance on ethics questions and report suspected violations of laws, regulations and company policy.

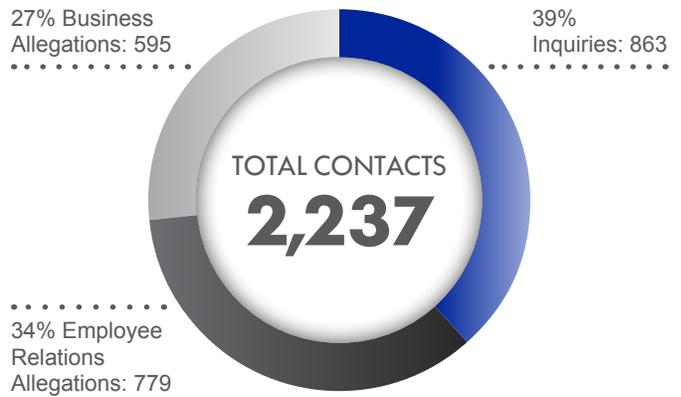
The toll-free number is available 24/7 and administered by a third-party service provider. We communicate this information on brochures, posters, the company intranet and internet sites. Dedicated OpenLine numbers are available at most of our international locations so employees in those countries can speak to a representative in their native language. In addition, an online web-based reporting system is available to employees.

Dedicated teams of professionals lead investigations in a manner that respects the reporting individual and the trust they have placed with us. In addition to the OpenLine and web reporting option, our employees and other stakeholders can raise concerns through our business conduct officers, human resources, managers, emails, internal audit, the law department or other organizations.

Concerns that are raised through the OpenLine are typically categorized as inquiries, business allegations or employee relations.

- Inquiries are typically questions that call for a response based on policy or procedures. Most of these relate to business courtesies and conflicts of interest.
- Business allegations focus on waste and abuse, misuse of company resources, mischarging, fraud, quality, manufacturing or safety concerns, or accounting matters. The majority of these allegations involve time reporting violations. These types of allegations are usually investigated by our Ethics and Compliance Investigation Team of professionals, unless they require referral to the law department. The investigation teams strive to protect confidentiality, objectivity and respect.
- Employee relations allegations include harassment, retaliation and issues involving employee behavioral misconduct. These are investigated by a different team of trained specialists with specific expertise in this area.

## 2019 Allegations and Inquiries



Actions taken as a result of substantiated investigations:

Coaching or Counseling: 138	Suspension: 7
Written Warnings: 125	Demotion: 6
Terminations: 110	Personnel Move: 2
Memo of Expectations: 61	
Verbal Warning: 28	Total Corrective Actions: 477

Both teams work closely with the law department, human resource partners, security and other subject matter experts as needed. Depending on the disposition of the investigation, actions are taken and cases are closed in the database.

There were 2,237 OpenLine contacts in 2019, including phone and web entries, as well as input from our business conduct officers and human resources. The number of contacts categorized as allegations decreased by 12.1% from the previous year and the number of inquiries decreased by 14.5%, possibly due to targeted training and enhanced communications.

Thirty-six percent of the contacts categorized as allegations were substantiated, in whole or in part, compared to 33% in the previous year. There were 110 terminations related to OpenLine allegations. This reflects a three-year upward trend, possibly due to stricter adherence to zero tolerance policies.

Callers may choose to raise concerns and remain anonymous if permitted by local law. In 2019, 41% of our contacts were anonymous compared to 37% in 2018. Historically, we are less able to substantiate allegations submitted anonymously, likely because we are less able to follow up with the reporter to understand the facts and circumstances, and to gather evidence. In 2019, the substantiation rate for allegations with identified reporters was 39% compared with 30% for allegations that were reported anonymously.

We analyze OpenLine metrics quarterly to identify areas of concern and trends and to inform leadership of high level issues. The Corporate Ethics Committee, auditors and the Audit Committee of the Board of Directors are briefed quarterly. The number of inquiries, allegations and actions taken are reported in ethics newsletters and identified trends are followed with targeted communications and training.

## Industrial Security

The Northrop Grumman Security organization provides enterprise-wide oversight over security systems, controls and processes to ensure the continuing effectiveness of our uniform security compliance framework. Our customer community has recognized this framework as an industry best practice. Our security program functions to protect and secure our personnel, resources and information and, as required, that of our customers and suppliers. The program also complies with customer, federal, state, local and risk management requirements.

Northrop Grumman requires an effective program at each sector that considers risks, vulnerabilities, emergency response, crisis management, IT disaster recovery and business recovery and resumption. Implementation of our Business Continuity and Crisis Management Program promotes operational resilience across our organization. These efforts enable us to respond effectively to unanticipated events with an emphasis on the protection of people, information, assets and brand as well as continuity of mission.

# Information Security

The Northrop Grumman Information Security organization protects the company's networks, systems, data, intellectual property and personal information wherever it resides. Successful protection from cyber threats to our products and computing environments is vital to Northrop Grumman's business operations. Our comprehensive Information Security Governance framework includes policies and standards governing computing environments. Key elements include:

### Information Sharing and Collaboration

Information sharing and engaging with government, customer, industry and supplier partners helps protect our own networks and the overall security of those partners. We participate in multiple cybersecurity information-sharing programs to address cyber threats. For example, in 2019, we provided a web interface to share cybersecurity resources with suppliers, which enabled our suppliers to adopt government-required IT security practices. Northrop Grumman has taken a leading role in the National Defense Information Sharing and Analysis Center as well as other government-industry partnerships that share cyber threat information as well as best practices, awareness and even product enhancements for improved cybersecurity.

### Technology Investment

We deploy multi-layered defenses to protect our computing environments and products from cyber threats and we further analyze available data to hunt for threats that are more insidious. We regularly evaluate new technologies to maintain our security posture.



## Insider Threat

To safeguard against the potential theft and misuse of intellectual property and other sensitive information, we maintain an insider threat program designed to identify, assess and investigate risks. Our program evaluates potential risks consistent with industry leading practices, customer requirements and privacy considerations.

## Third-Party Risk Assessments

Before hosting sensitive data in a computing environment managed by a third party, we conduct an information security assessment and implement contractual provisions that mandate security protections.

## Training and Awareness

Our employees are trained to recognize they are our first line of defense in security. Our employees' ability to identify, avoid and mitigate cyber threats is a crucial element of our information security program. Among the elements of our training and awareness program are mandatory annual training and email spear phishing exercises. Orientation for all new employees includes basic Information Security instruction that includes company first-line-of-defense expectations and methods.

In 2019, due in large part to the acquisition of Orbital ATK, Northrop Grumman onboarded new employees at approximately 70 locations and successfully integrated the company systems with cybersecurity, data privacy and customer satisfaction top of mind. This required integrating company systems, procedures and tools, as well as migrating networks and creating connected multi-locations.

**This year our Northrop Grumman United States Network received the highest possible score of 110 by the newly established Defense Industrial Base Cybersecurity Assessment Center. This ranking recognizes our full compliance with cybersecurity requirements for U.S. Department of Defense contractors.**

## MATERIAL ISSUE

# Data Privacy

## Why It's Important

Implementing an effective company-wide privacy program allows us to lessen risk and comply with legal and regulatory requirements. We are a trusted business partner and hold a reputational advantage as a result of protecting the personal data of our customers, suppliers and employees.

## Data Privacy

Northrop Grumman undertakes a comprehensive approach to data privacy in compliance with laws in the U.S. and around the globe. We understand and comply with data privacy laws in each country in which we conduct business and have established a business operating model that provides oversight to ensure compliance.

In 2019, the company implemented new compliance procedures to be prepared to meet the requirements of the new California Consumer Privacy Act.

Implementing an effective company-wide privacy program allows us to mitigate risk and comply with legal and regulatory requirements. As a trusted business partner, we protect the personal data of our customers, suppliers and employees.

Our Corporate Privacy Office manages our global commitment to respect the personal information of our employees, customers and other individuals with whom we conduct business. We continue to enhance our Privacy Governance Framework that includes privacy training and awareness initiatives, effective privacy notices, frequent audits and self-assessments, access controls, international and third-party supplier risk assessments, compliant cross-border transfers of data and other risk mitigation measures. Our online privacy notice has more information on our data privacy practices.



# PEOPLE AND CULTURE

Creating a diverse, talented and inclusive workplace is central to upholding our culture of inclusion, employee engagement, innovation and excellence. Our focus on building the best culture begins with our commitment to attracting and retaining the best and most diverse talent from colleges, universities and the external labor market. As a leading defense contractor, Northrop Grumman also prioritizes hiring military veterans, especially those who have been injured in service.

## Building the Best Culture

Since 2010, our U.S.-based initiative, Building the Best Culture, has prepared a diverse pipeline of leaders for future leadership positions. Our commitment to our culture attracts and retains the best employees and we are consistently recognized by external organizations as a top employer, particularly for military, diversity and recent graduates. In 2019, the inaugural Gartner TalentIQ Index recognized Northrop Grumman as a “Genius” company, where talent attraction is considered a point of competitive differentiation, the highest level of recognition from the Index.

The recognition reinforces our commitment to fostering a workplace and workforce that values diversity and inclusion, while increasing next-generation ideas and top performance.

As our company grows, we proactively seek talent with unique perspectives, passions, skills and experiences. Diversity and inclusion are an important component of our talent management strategy. By seeking top talent from a diverse pool, we can help guarantee that we have the right team of people to help us reach our goals. Northrop Grumman team members travel across the country to meet talent, from campuses to conferences to in-person hiring events. We maintain strategic relationships with universities and partner with diversity organizations, military organizations and Northrop Grumman employee resource groups.

## Talent Management

### Why It's Important

Talent management is a top priority at Northrop Grumman. Our employees are the foundation of our company's success. For Northrop Grumman to excel in fulfilling its mission, we must build an inclusive culture and a highly qualified workforce, where all employees can reach their full potential.

Northrop Grumman Leadership Characteristics enable employees at all levels to strengthen their leadership skills and their ability to deliver and develop top-tier sustainable performance. The six characteristics—Values, Performance, People Leadership, Customer Intimacy, Innovation and Strategic Value Creation—are representative of the Northrop Grumman culture. The extent to which employees demonstrate these Leadership Characteristics is considered in our hiring practices, performance review and succession planning process.

**In 2019, 79% of Northrop Grumman employees completed the annual employee survey, providing more than 75,000 comments.**

The annual employee survey gives our employees the opportunity to provide feedback, which plays a critical role in our ongoing efforts to make our company an even better place to work. We solicit feedback on topics including company leadership and culture, operational efficiency, ethics, inclusion and career development. Our employee response rate of 79% in 2019 is in line with other high performing companies, and indicates that our employees believe their feedback is heard and valued. Employees identified process efficiency and decision-making at the right level as opportunities for improvement, validating our current focus on operational efficiency and agility. Our strengths continue to be our people and culture. Our leaders and teams are working together to take action based on survey findings.

The Northrop Grumman Development Center, our employee career development website, provides all employees with online career-specific tools and resources to help them gain job experience, increase business exposure and enhance skills with education and training. We also support development opportunities for our workforce through educational institutions. Our Education Assistance Program helps employees pursue a college degree, or professional or technical certification, that directly aligns with the company's present and future skills requirements.

Our performance management process ensures that individual goals align with business priorities and that there is equal accountability for achieving performance goals and demonstrating the Northrop Grumman Leadership Characteristics. The performance management process recognizes top performers. It is critical that leaders provide employees with ongoing, honest, constructive feedback on both their performance goals and demonstration of the Leadership Characteristics. Employees whose performance and behaviors exceed those of their peers are recognized and rewarded as higher performers. In 2019, 96.1% of eligible employees received an annual review.



### Early Career Development

The Pathways Program is a structured rotational program designed to prepare early career employees for future talent needs that are critical to the business. The program develops talent pipelines with both depth of skills and breadth of experiences. Through three guided 12-month experiences within a chosen engineering discipline, participants further develop their technical capability and professional network and they gain exposure to our business and programs. At the completion of three rotational assignments, participants move into a permanent role as an experienced employee at Northrop Grumman.

## Professional and Technical Development

This year, we launched new Digital Credentials at four universities with the Greater Washington Partnership, providing 165 undergraduate students with an opportunity to gain digital skills in preparation for entry-level roles at more than 15 participating companies. In 2020, the Digital Credentials will launch in additional subject areas aligned with Northrop Grumman needs, including Cyber, Data Science and Machine Learning. More expansion is planned to additional universities across the Capital region.

After increasing alignment of our Technical Academies to new enterprise-wide technology campaigns, we further enhanced our cyber cohort program design and accelerated the launch of a second Advanced Artificial Intelligence/Machine Learning cohort as well—with nearly double the enrollment as the prior cohort. These technical cohort programs are uniquely designed to cultivate advanced technical, domain expertise and collaborative thought leadership. This year, we will institutionalize an open application process for employees to further accelerate advanced development through our Technical Academies, while elevating and including key talent potential across sectors.

In 2019, we continued launching apprenticeship programs enterprise-wide in response to a Presidential Executive Order and Corporate Initiative. These development programs are targeted primarily for non-exempt employees and allow sites across our business sectors to hire and train new talent as well as help current employees gain additional skills and certifications.

## Mentoring

Mentoring is a valuable method for developing employees at all levels and supports our culture of performance, learning and innovation. We offer a variety of formal and informal opportunities to support career growth and development for mentors and mentees. 2020 will mark the fifth year of the Vice President Mentor Program that creates increased leadership visibility and business exposure of high-potential talent to all vice presidents. The program will continue offering mentees the opportunity to pay it forward by mentoring other talent transitioning from individual contributors to managing people. Formal and informal mentoring provide an ideal opportunity to accelerate leadership readiness and build a continuity of knowledge transfer across the enterprise.

## New Manager Program

Highly skilled leaders create an inclusive, agile work environment that encourages the development of their staff to optimize individual performance, advancement opportunities and company performance. In 2019, we continued to deliver and enhance programs supporting the preparation, selection and development of effective new managers. Through the New Manager Program, more than 900 leaders learned skills to effectively communicate with, coach and develop diverse teams. We connect managers through an internal, online portal, which offers a variety of tools to coach and support new managers' ongoing development and transition into leadership roles.

## Leadership

We promote a culture of inclusive leadership by raising leaders' awareness of unconscious bias and inequities while discussing opportunities to proactively foster inclusion. New leaders learn ways to leverage diversity to maximize performance as part of the New Manager Program. The Northrop Grumman Leadership Series helps vice presidents, directors, managers and technical leaders improve manager effectiveness and team performance by focusing on performance, agility and growth. Leaders hear from external and internal keynote speakers followed by virtual, interactive sessions where they learn more about business topics, ask questions and collaborate with other leaders across the company. More than 13,000 leaders attend annually.

## Executive Development

Our annual succession planning process identifies and develops high-potential employees. To further prepare and evaluate candidates for advancement, employees attend a number of leadership programs including Strategic Leadership, Executive Leadership Program, Leadership Cohort Program, Women in Leadership and Affinity Forum. Program participants receive one-on-one executive coaching, shadowing opportunities and access to 360-degree feedback and executive assessments.

# Diversity and Inclusion

## Why It's Important

Our culture is critical to our ability to be a top performing company. Diversity provides a foundation to build an inclusive work environment. Together, diversity and inclusion support higher levels of engagement, which leads to increased innovation and quality—delivering better performance for our shareholders, customers and employees.

The Diversity and Inclusion team works with many groups across the organization, including all global corporate responsibility groups, employee resource groups, human resources and the veterans inclusion committee. We offer a growing training catalog that provides courses and resources on topics such as affirmative action and EEO, disability inclusion, religious bias, gender identity, veteran inclusion and intercultural development.

Across our company, more than 24,000 employees come together in 12 Employee Resource Groups with 260+ chapters, offering opportunities to every member of our Northrop Grumman team.

In 2019, the final year of our 2015–2019 diversity plan, we recorded growth in almost all areas. Since 2010, the representation of females increased at the Vice President level and above from 16% to 33% and at the entry- and mid-level management level from 22% to 28%. Also since 2010, representation of People of Color increased at the Vice President level and above from 11% to 18% and at the entry- and mid-level management level from 19% to 29%. Diversity is one of the company's non-financial ESG performance metrics and is reviewed by the Compensation Committee of the Board of Directors.

# Diversity and Inclusion

For more than 10 years, the company has had a greater focus on creating an inclusive work environment that fosters creativity, innovation and engagement and increases the number of underrepresented women and minority groups in leadership positions. Our strategy of Building the Best Culture fosters creativity, innovation and colleague engagement and seeks to increase the number of underrepresented women and People of Color in leadership positions.

## 2019 Employee Demographics\*

### Total Population

26.2% FEMALE  
37.3% POC

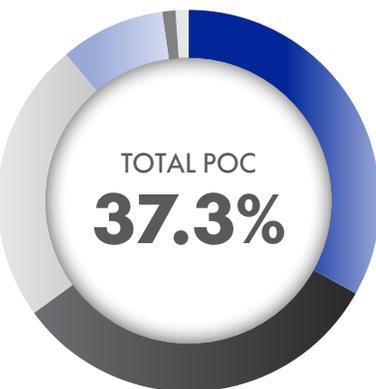
### Total Management Population

27.6% FEMALE  
28.0% POC

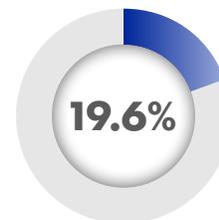
### Vice President and Above Population

32.6% FEMALE  
18.0% POC

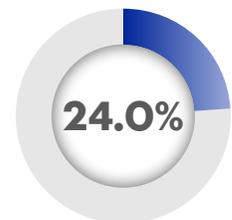
### Veterans and Persons with Disabilities (PWD) Population



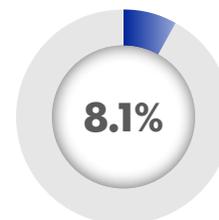
- Asian: 12.4%
- Hispanic: 11.9%
- Black/African American: 8.9%
- Two or More Races: 3.3%
- American Indian/Native American or Alaska Native: 0.4%
- Native Hawaiian/Other Pacific Islander: 0.4%



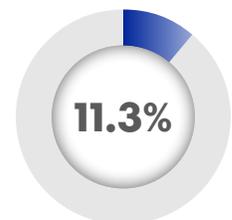
VETERAN POPULATION



VETERAN NEW HIRES



PWD POPULATION



PWD NEW HIRES

\*Because 2019 represents the final year of our five-year diversity plan, we did not include the added employee population resulting from the 2018 acquisition of Orbital ATK. Beginning next year, demographic data will include all employees across the company.

In 2019, many of the entering group of college hires to Northrop Grumman were from diverse backgrounds, strengthening our pipeline of future leaders. More than 60% of college hires were women, people of color, people with disabilities and/or veterans.

## Equality and Access

Equality and access are two important elements of our inclusive culture. Northrop Grumman ensures equality through its Equal Employment Opportunity (EEO) compliance efforts as a U.S. federal contractor, as well as through U.S. and global government reporting related to gender, race/ethnicity, disability status and veteran status. Through workplace adjustments and accessibility efforts, Northrop Grumman promotes a barrier-free workplace to maximize the contributions of individuals of all abilities. Northrop Grumman once again was named as a 2019 National Organization on Disability Leading Disability Employer™. Northrop Grumman also received the highest ranking for the fifth year in a row on the Disability Equality Index, a ranking produced by the American Association of People with Disabilities (AAPD) and Disability:IN.

The work of the team goes beyond compliance-driven equality and access efforts. We benchmark pay using external salary surveys and our incentive system is performance-based. We are committed to equitable pay for all employees, including for women and People of Color, and we review our pay decisions accordingly.

As part of our efforts to maximize the inclusion and contributions of all employees, Northrop Grumman manages accommodation and adjustment requests from employees, applicants and visitors through the online ACCOMMODATE system. Adjustments are managed and distributed from a centralized budget. In 2019, we received accommodation requests for more than 1,200 employees through our centralized accommodation portal, ACCOMMODATE. Many employees request multiple accommodations, with requests varying from changes to accessibility and physical environment, deployment of job equipment, services such as sign language interpreting and modifications to job duties and schedules. Since the launch of ACCOMMODATE in 2015, we have received more than 6,000 requests for accommodations from employees, applicants and visitors.

## Recognition for Workplace Health Program Quality

Northrop Grumman was recognized at the Silver level as an American Heart Association's Workplace Health Achievement Index recipient. The Workplace Health Achievement Index is a self-assessment scorecard that surveys and measures the comprehensiveness and quality of a company's workplace health program, including the overall health of its employees. This is a notable accomplishment for Northrop Grumman, the only defense contractor recognized in 2019.

## Wellness

Northrop Grumman offers My Well-being, a program to help our employees achieve their personal well-being goals across four pillars: physical, financial, social and emotional. When our employees are at their best, we are at our best as a team.

My Well-being integrates resources from across the enterprise and offers onsite flu shots, onsite fitness centers, gym discounts, My Well-being Expos, well-being challenges and financial resources and education. Last year, the program administered more than 20,000 flu shots, offered 112 financial events and hosted My Well-being Expos at 38 sites.

With respect to emotional well-being and support, our NGCare program offers services and resources tailored for all stages and challenges of life. The resources vary from providing support for family caregiving/parenting, eldercare and daily living; workshops, coaching, counseling and information for managing stress, improving relationships and strengthening emotional well-being; to navigating financial and legal assistance. NGCare partners include Beacon Health Options, Bright Horizons, Workplace Options and the Boston College Center for Work & Family, all of whom specialize in solutions, resources and research that promote mental well-being. Last year, more than 52,000 employees and family members benefited from NGCare programs.

# Employee Health and Safety

Safety is a core value at Northrop Grumman and we work diligently to protect the health and safety of employees, customers, visitors and contractors at all of our operations. Everyone has a responsibility to ensure that workplace hazards are identified and employees are empowered to report workplace hazards to their supervisor without any fear of repercussion.



## Sunnyvale Wearable Sensor Pilot Project Box

Northrop Grumman is exploring the use of wearable sensor technology to assess job tasks to mitigate workplace injuries. In 2019, we completed a pilot study with crane operators at our Sunnyvale, California facility. These employees often have to work in awkward postures to install rigging and chains on pieces of equipment that are moved throughout the facility. Volunteers wore small sensor devices, the size of a credit card, which measured their muscle movement, stress and levels of exertion throughout the work day. Using the data captured from the sensors, Northrop Grumman evaluated movements with the highest likelihood of causing an injury and explored modifications that would produce less stress on the body. In 2020, additional opportunities to utilize the sensor technology with different job tasks will be explored.

Risk and hazard identification, abatement and prevention are key components of Northrop Grumman's safety program. For tasks and operations that contain a significant element of risk, it is mandatory to conduct Job Hazard Analysis (JHA) reviews. We train our employees to review JHAs and identify hazards, and we instruct them on how to safely perform the task. We empower our employees to stop a job or task that is deemed hazardous, without fear of retribution or discipline. Through periodic self-inspections and audits, the environmental, health and safety (EHS) group verifies the effectiveness of our hazard risk assessment program. The EHS team investigates the root cause of any findings, identifies potential preventive actions and recommends actions to prevent future occurrences.

Northrop Grumman utilizes both internal and external industrial hygienists to investigate workplace hazards and potential exposures and reduce or eliminate any risks discovered. Our loss control consultant and our Workers Compensation insurance carrier provide additional resources to resolve complicated workplace exposures and risks. Where possible, we strive to remove risks through engineering and process design changes; however, when not possible, we identify the hazard and enact measures to protect employee health. At several locations, medical personnel are available on site to treat injuries and illnesses when they occur.

We maintain a Safety Committee, with representation from each operating sector, to develop and manage safety initiatives. The Safety Committee not only represents the diversity of operations in which Northrop Grumman is engaged, but also the breadth of health and safety professionals supporting those operations.

In 2019, Northrop Grumman health and safety professionals focused on the implementation and utilization of safety management systems and services with intent to drive operational efficiency and increase capabilities for data collection and hazard trending/analysis. Activities of this nature include the implementation of formal safety management SaaS systems, an incident tracking and OSHA recordkeeping system and chemical and contractor safety management services. Additionally, in 2019, we integrated the operations that were formerly part of Orbital ATK, consolidating their safety targets and performance metrics into the rest of our safety management and data collection efforts.

Northrop Grumman works aggressively to prevent employee injuries, leveraging our partnerships with leading consultants in the loss prevention industries.

On a regular basis, we review our loss data to identify injury trends by type and by location. Northrop Grumman invests resources in projects designed to keep employees from being injured. In 2019, we focused on the prevention of repetitive motion and slip, trip and fall injuries. Our work focused on a company-wide awareness campaign, as well as site-specific assessments at many of our locations where these types of injuries had occurred. Despite a slight overall increase in other injuries in 2019, these two injury types continued to show a downward trend.

At Northrop Grumman, occupational health and safety training is integral to ensuring that job tasks can be performed safely. Each employee receives the required training they need, either in person or through the Lx online training system. We monitor employee training at a corporate level. Supervisors are responsible for ensuring their employees have completed all assigned trainings.

Each June, in conjunction with the National Safety Council and other supporting partners, we celebrate National Safety Month to recognize the value of employees and the importance placed on their well-being both at work and at home. We work to bring awareness to employees about injury prevention and empower them to take actions to help keep themselves, their coworkers and their families safe. In 2019, Safety Month activities addressed numerous workplace safety issues, including fatigue, hazard identification and slips, trips and falls.

## MATERIAL ISSUE

# Employee Health and Safety

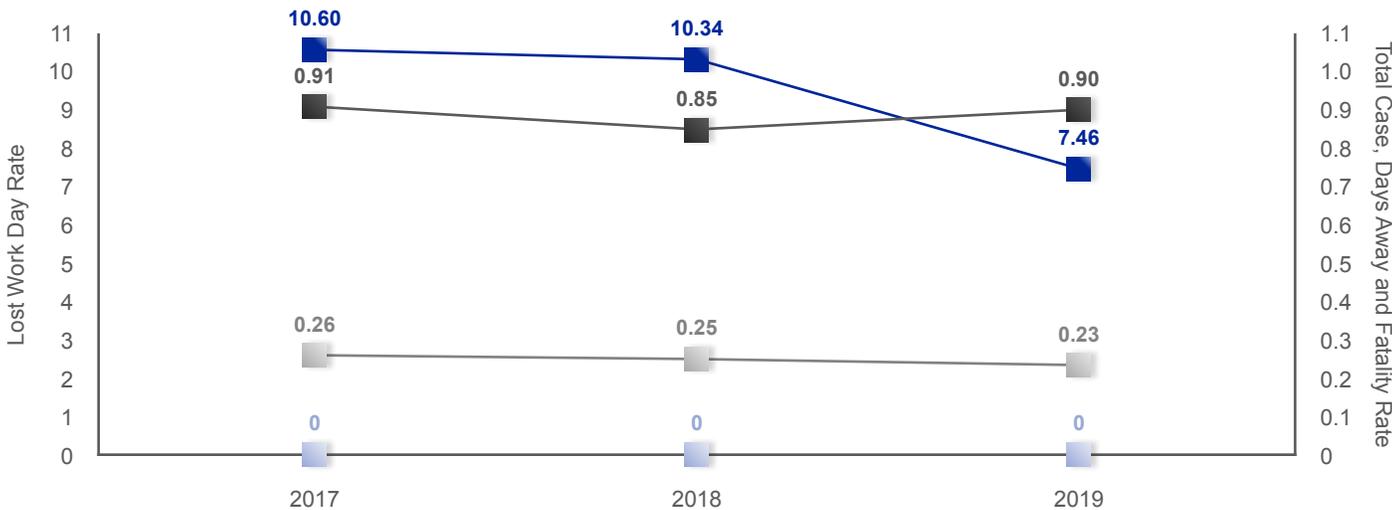
### Why It's Important

Our people are our most valuable resource. We are committed to providing a safe and healthful workplace and to conducting our business activities in a responsible manner that preserves natural resources and minimizes adverse impacts to the health and safety of our employees, customers and community.

## Health and Safety Performance Summary

We evaluate the effectiveness of our health and safety programs externally, through benchmarking with industry peers and the U.S. Bureau of Labor Statistics. Internally we determine program effectiveness by conducting trend analyses of our past performance. Safety is one of Northrop Grumman's seven corporate non-financial ESG performance metrics.

### Employee Health and Safety Performance\*



\*Safety statistics are for U.S. workforce only. For each metric, a lower value indicates better performance:

- **Lost Work Day Rate:** Total number of lost work days per 100 full-time workers
- **Total Case Rate:** Total recordable injury and illness cases requiring treatment beyond first aid per 100 full-time workers
- **Days Away Case Rate:** Cases resulting in lost or restricted days or job transfer because of work-related injury and illness per 100 full-time workers
- **Fatalities:** Death of an employee that results from a work-related incident or exposure



# PRODUCTS AND INNOVATION

Northrop Grumman offers an extraordinary portfolio of capabilities and technologies that make us the most trusted provider of systems and technologies for our customers. Innovation, continuous improvement, systems thinking, agility and a commitment to quality enable our continued success.

# Programs, Quality and Engineering

Delivering quality products and meeting our commitments on customer programs is foundational to our business. Northrop Grumman fosters a culture of performance and a pioneering spirit to define possible. We strive to exceed customer expectations for affordability, quality and on-time delivery. Supporting this exceptional, agile and efficient performance is the mandate of the Corporate Operations Council (COC), which includes vice presidents from each Northrop Grumman business sector. Representatives from our various functional organizations participate on the Council to collaborate on implementing strategic initiatives across the company.

We measure program performance through two indicators—customer satisfaction and quality. We monitor these two metrics closely across the organization and proactively address any negative trends in root cause. Corporate leadership reviews these indicators on a monthly basis and executive compensation and employee incentives are linked to customer satisfaction and quality. Our culture ties personal accountability for quality with performance excellence, which is critical to customer satisfaction. In 2019, our corporate quality and customer satisfaction metrics were above target for the year.

Programs experiencing quality and/or customer satisfaction issues may receive direct, sector and/or corporate oversight. This includes guidance on developing and executing a “return to green” plan, corporate engagement with partners and suppliers and regular meetings between corporate executives and program leadership.

## Program Management

At Northrop Grumman, successful program management is essential to program performance at every lifecycle stage, promoting quality and customer satisfaction. Our leaders are committed to providing the processes, guidance, training, tools and best culture to ensure effective program management across the company.

### MATERIAL ISSUE

## Program Performance

### Why It's Important

Program performance results from effective project management to deliver high-value solutions and capabilities. Strong, sustainable program performance creates value for all our stakeholders. Program performance directly affects customer satisfaction and reputation, which supports our competitive standing and leads to new and repeat business.

### MATERIAL ISSUE

## Customer Satisfaction

### Why It's Important

Maintaining strong relationships with our customers is critical to the success of our programs and business. We believe in respecting our customers, listening to their requests and understanding their expectations. We aim to exceed their expectations in affordability, quality, capability and on-time delivery.

### MATERIAL ISSUE

## Product and Service Quality

### Why It's Important

Northrop Grumman strives to deliver high quality products and services because our systems ensure the security and success of our customers. Quality is a core Northrop Grumman value.

## Quality

Quality is an essential element of customer satisfaction. At Northrop Grumman, we have multiple mechanisms to promote and guarantee quality across the business.

Quality leadership from all sectors convene to develop policy and share best practices. They execute and refine corporate quality policies and metrics. In addition, quality professionals from across the company meet quarterly. Each sector and site implements a Quality Management System (QMS) consistent with either ISO 9001 or AS9100 standards to ensure quality control.

### The agile transformation now underway is enabling continuous improvement in quality. This is critical to our company's success.

During our annual Quality Month celebration in October 2019, we held a series of workshops and live events across our sites, which were virtually available to all employees. These events emphasized the importance of quality and the impact of each individual employee in realizing our commitment to quality. The kickoff event for Quality Month was a company-wide panel on "Agility and Operational Efficiency within a Quality Management System Framework", aligning our agile and quality objectives.

## Engineering

Engineering is the heart of our company; we define possible through innovative technology development. At Northrop Grumman we use the newest technologies, along with proven best practices, as enablers for engineering and program excellence. Agile methodologies, Model-Based Engineering, Digital Engineering and DevSecOps are key capabilities that allow us to deliver value to our customers faster and in better alignment with their needs.

A legacy of strong systems engineering at Northrop Grumman is an essential differentiator for our business. Systems engineers analyze stakeholder needs, mission objectives, operating environment and technology capabilities to design and deliver the best solutions for our customers. Key to strong systems engineering is a systems thinking culture for all engineers and stakeholders involved in system development. Systems thinking means assessing the impact of each individual decision from the widest possible perspective to reach a final outcome that is sound for the entire system from the initial concept to development, delivery, sustainment and closeout.

Northrop Grumman is committed to continuous engineering improvement through the capture and sharing of best practices and lessons learned. We also drive toward enterprise-wide alignment in key engineering decisions. Company leadership from across the engineering disciplines and business areas collaborate in this endeavor to ensure we remain an industry leader in engineering practices and capabilities.

## Agile Transformation

In response to rapidly evolving customer needs and expectations, in 2019 Northrop Grumman made a significant shift to streamline processes and become more operationally agile. This includes using "big-A" Agile system development techniques where appropriate as well as adopting a "small-a" agile mindset throughout the business. Lean Agile Centers of Excellence continue to drive this transformation by providing training, coaching, best practices and other resources to help all programs and business functions apply agile concepts.

To become more agile, we are reducing bureaucracy, pushing decision-making down to the lowest appropriate level, adapting quickly to changing customer needs and prioritizing customer value. Northrop Grumman maintains its focus on systems thinking throughout the agile transformation. Systems thinking continues to be essential, particularly as an enabler to achieving agile transformation. Systems thinking and an agile mindset directly support our corporate mission.

The Agile transition has been a key focus of the Corporate Operations Council and its sub-councils and working groups.

# Product Safety

Safety is a core value at Northrop Grumman across personnel, manufacturing and the systems we deliver. Our customers expect safe, reliable, quality systems from Northrop Grumman and our mission is to meet or exceed those expectations. Product safety is an integral part of our processes, addressed through our Quality Management System, corporate systems engineering policy and individual program system safety plans.

System safety plans, adapted to the needs of each program, address all hazard sources, including hardware, software, environmental and organizational. Experienced safety engineers oversee the system safety program, provide expert knowledge to design teams, conduct hazard analyses, track safety risks, ensure compliance with all applicable safety standards and interface with customer and regulatory safety personnel. The system safety program also extends to partners and suppliers.

We apply industry best practices to identify, analyze and manage risk. Safety engineers evaluate individual hazards, interacting hazards and the possibility of cascading failures, while also evaluating the system as a whole.

We work closely with customers to communicate and accept any residual hazards. For programs without an explicit customer hazard risk acceptance process, hazard acceptance is handled by an internal committee with appropriate authority for the size of the risk. In all cases, the hazard analysis and mitigation considerations are well documented.

Airworthiness is an integral aspect of product safety. In 2020, we are consolidating oversight of this important area under the Northrop Grumman Aeronautics Systems Airworthiness Directorate. The Directorate will lead interpretation of regulations, disseminate requirements and guidance, advise programs with airworthiness needs and serve as the official interface to regulatory authorities. This approach will help ensure safety, consistency and efficiency with regard to all airworthiness concerns within the company. In 2019, we received one Airworthiness Directive from the Federal Aviation Administration that affected approximately 100 attitude heading reference units in a particular configuration. This is a small percentage of the thousands of units currently in operation globally. To date 70% of the units have been modified and we continue to receive units from customers for modification.

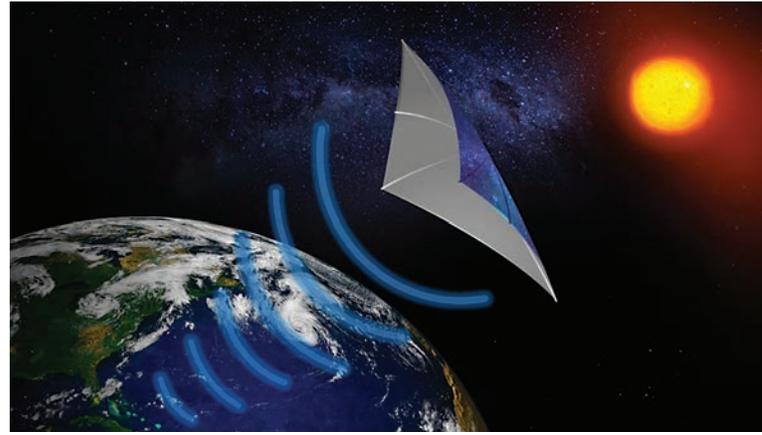


Photo Credit: U.S. Air Force Research Laboratory

# Product Stewardship

As we strive to meet customer needs, we also help customers meet sustainability objectives through the design and use of our products. Improving fuel economy supports our customers' demand for reduced operational costs and increased endurance. We develop products that enable our mission and allow customers to more safely and efficiently carry out their missions. Northrop Grumman is a premier supplier of unmanned aircraft, which are more fuel efficient than manned aircraft for similar capabilities and mission sets.

Northrop Grumman invests in research and development for innovative new technologies that address our customer's challenges and sustainability needs. Through ongoing efforts, we are researching methods for effectively collecting solar energy in space and transmitting it to Earth for terrestrial use. In 2015, we established the Space Solar Power Initiative in collaboration with the California Institute of Technology. In 2019, Northrop Grumman was awarded a contract from the Air Force Research Laboratory, valued at more than \$100 million, to develop and deliver the hardware elements for the Space Solar Power Incremental Demonstrations and Research Project. Solar energy collection in space has advantages over ground-based solar panels because the available energy is more intense and is not subject to weather interruptions. The ability to capture energy in space and precisely beam it to where it is needed is a potentially game-changing technology for our customers and the world.

# Awards for Product Quality and Performance Excellence

## **Omega Team Honored with Northrop Grumman Simon Ramo Award for Systems Engineering Excellence**

Northrop Grumman is developing the Omega intermediate/heavy-class rocket to meet essential National Security Space Launch (NSSL) needs. Omega leverages flight-proven technologies pioneered by Northrop Grumman over many decades combined with innovations and configurations to provide reliable, adaptable and cost-effective launch capabilities.

Model-Based Systems Engineering (MBSE) enables our engineers to digitally develop and evaluate systems more effectively. The team created a digital engineering model of the rocket, which works for all of the system configurations and U.S. Air Force reference missions. They then utilized these models to capture all key performance parameters in order to validate the design's ability to meet mission requirements.

Using a single platform to manage a high-cost, multi-product application on an accelerated development schedule created significant value for our customer. The Air Force and Aerospace Corporation endorsed the approach for meeting the 2018 DoD Digital Engineering Strategy directive. The team also received the 2019 Northrop Grumman Simon Ramo Award for Systems Engineering Excellence for leadership in systems engineering.





## **F-35 Production Team Meets Record Production Demand, Earns Recognition From Industry Peers**

Northrop Grumman builds the center fuselage section of the F-35 Joint Strike Fighter (JSF) at our Palmdale Aircraft Integration Center of Excellence. The broad industry team that builds the plane for multiple domestic and international customers has been working to ramp up production and decrease cost to meet market demands. The team succeeded in increasing production from six per month to 15 per month while maintaining quality and achieving cost reductions. The team evaluated the production system for opportunities, resulting in innovative and replicable process improvements in every department. This work was recognized by industry peers with the 2019 Aviation Week Program Excellence Award for Supply Chain Production.

## **U.K. Team Honored with Award for Excellence**

ARSENAL is a U.K. cyber program. Like many organizations looking to stay ahead of a persistent and rapidly changing adversary, the customers are undergoing a transformation in how they deliver capabilities. This led to large-scale adoption of Agile development practices and broader organizational changes to create and support an Agile culture. Agile provides the responsiveness to change and ability to deliver critical mission capability at rapid pace.

The ARSENAL customer rated Northrop Grumman as a top-performing supplier on a U.K. Government capability framework contract worth £1 billion over seven years. The team achieved top-performance standards through a tailored and flexible approach, ensuring delivery of technically excellent solutions that met customer mission needs and environmental constraints, as well as a culture of quality. The success of the effort has resulted in a significant scale-up since its inception; throughout this growth, the program has maintained its culture, helping to grow our scope of work and position our company as a trusted mission partner. The Northrop Grumman team was recognized by the 2019 Award for Excellence, our company's highest honor, in the category of Quality Excellence.

# R&D and Innovation

## Why It's Important

Throughout our history, innovation has driven the success of our company and our customers. Sustainable innovation and technology R&D allows Northrop Grumman to consistently meet and exceed the needs of our customers.

# Research and Development

We have a robust R&D program that develops products and services for today's business needs and invests in emerging technologies for the future. The creativity and mission focus of our employees drive the company's innovation engine. We empower our employees to innovate efficiently and effectively by providing tools and environments for exploration and experimentation. Through partnerships with industry and universities, we extend our innovation ecosystem by maintaining collaborative R&D environments.

The Northrop Grumman Corporate Technology Council and sector technology, strategy and functional offices work collaboratively to identify, address and develop solutions for our customer's most complex mission challenges. Northrop Grumman is actively engaged in shaping the curriculum, skill credentials and research applications that support a modern digital workforce for global security. In 2019, with the partnership of over 25 leading global academic institutions from across the U.S., U.K. and Australia, Northrop Grumman hosted its third annual University Research Symposium. This symposium provides a platform to share the results of university research funded by Northrop Grumman and formulate stronger strategic R&D alliances across topics ranging from cognitive processing to quantum sensing.



## Northrop Grumman and Carnegie Mellon Enter Into Research Agreement to Collaborate on Artificial Intelligence Projects

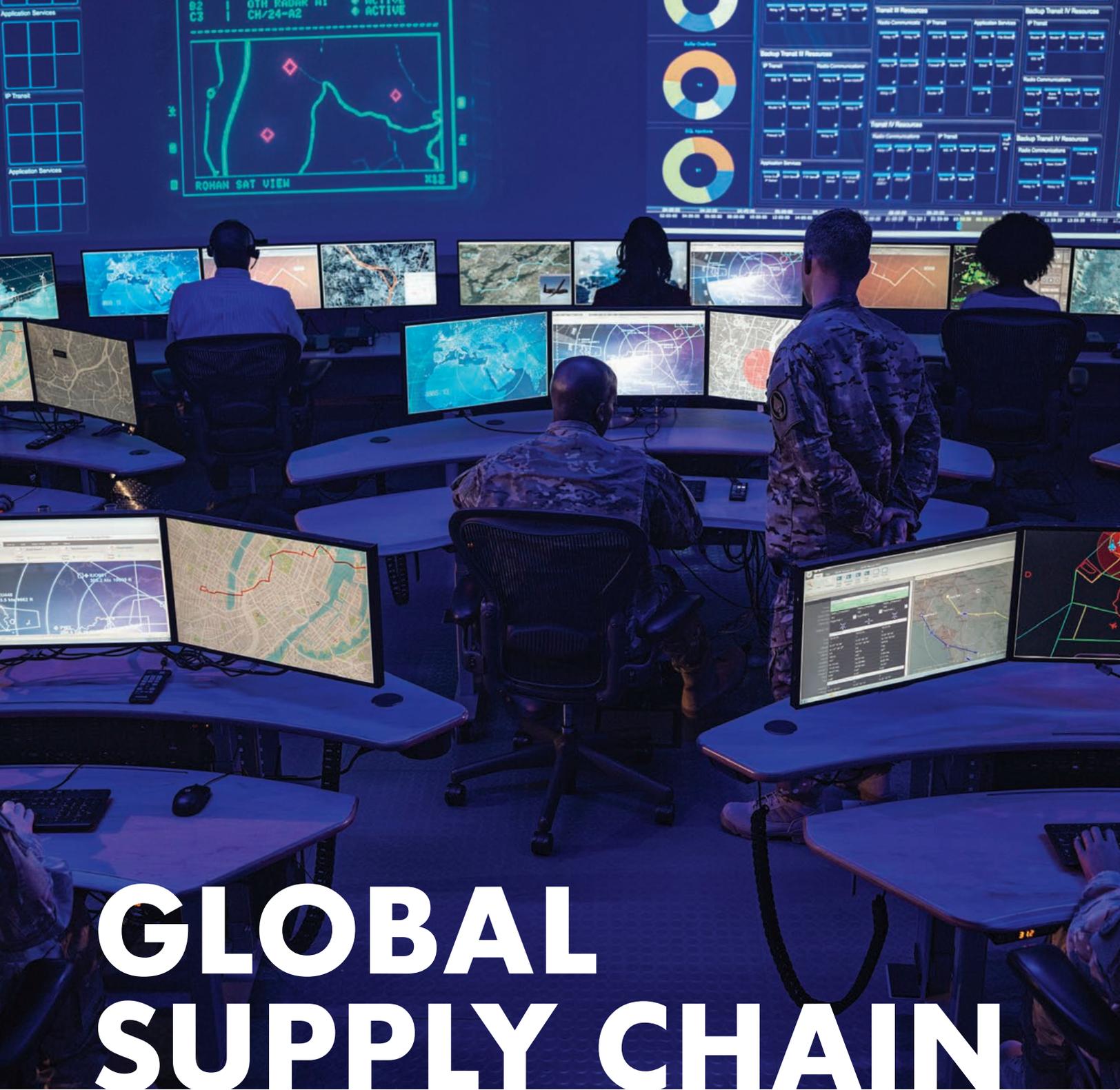
In October 2019, Northrop Grumman Corporation and Carnegie Mellon University (CMU) formally signed a master research agreement between the two organizations that will help foster innovation. The signing initiated the kickoff of several projects at CMU related to strategic, operational and tactical emergency operations. Northrop Grumman will support CMU research focused on decision-making, robotics, human-machine teaming and autonomy.

.....

<h1>\$953M</h1>	<h1>\$10.6K</h1>
2.8% OF SALES	PER EMPLOYEE

.....

Our innovation strategy includes significant R&D investment to support future technologies and mission solutions. In 2019, we invested 2.8% of total sales in company-sponsored R&D representing expenses totaling \$953 million. To meet new mission challenges, Northrop Grumman also partners with our customers on contract R&D to field emerging capabilities from technology prototyping through demonstration. We leverage open source innovations, both independently and through partnerships, to advance leading edge technologies in support of our customers' needs.



Our vision is to be a leader in supply chain management by leveraging shared strategies, processes, people and systems to generate value. Our goal is to ensure that our suppliers act ethically and responsibly, perform to a high standard, promote supplier diversity and inclusion, as well as protect our products and sensitive information against threats such as counterfeit parts, terrorism and information security incidents.

## Global Supply Chain

### Why It's Important

We regard our suppliers as essential team members and expect our supplier base to maintain the highest standards of ethics and integrity. With over \$11 billion in domestic subcontracted spend in 2019, Northrop Grumman's supply chain is critical to performance and our ability to provide strategic value for our customers.

## Supplier Responsibility

Northrop Grumman relies on a broad base of suppliers to provide raw materials, chemicals, components and subsystems for our products and to produce hardware elements and sub-assemblies, develop software and intellectual property and perform some of the services we deliver to our customers. We foster strategic supplier relationships that support the growth of our global business. The improper conduct of employees, agents and/or our supply base may impact our reputation, ability to do business and products and services.

We rely on our suppliers to act in compliance with all applicable laws, regulations and contract terms including adherence to our [Supplier Standards of Business Conduct](#). These standards establish requirements related to ethics and integrity, labor and employment practices, human rights protection, sustainability, and diversity and inclusion. Our Enterprise Terms and Conditions include a provision requiring compliance with our Supplier Standards of Business Conduct as a condition of doing business. In the event of a violation, we reserve the right to terminate our contract. These standards apply to suppliers at all tiers and those who work for them.

We also promote best practices in environmental management within the supply chain function and our supply base with a focus on improved risk management, performance and transparency. As stated in our Supplier Standards of Business Conduct, we expect our suppliers to support our commitment to the environment, comply with all applicable environmental laws, regulations and directives and operate as responsible stewards of the environment.

## Supplier Performance

We monitor and assess our suppliers and potential suppliers for a variety of risks, including capability, capacity as well as debarment or suspension from U.S. Government contracting. We evaluate supplier performance across several major categories including management, technical, schedule, cost, proposal, mission assurance, supply chain management and customer satisfaction with emphasis on those suppliers that are critical to our core business requirements. Critical supplier criteria include:

- Level of criticality of program
- Past performance
- Dollar value and total spending
- Open purchase order value and volume
- Sole-source versus single-source
- Multiple programs
- Affordability
- Risk/financial health
- Investments, business agreements and small business categories
- Unique technology and strategic partnering

**We conduct supplier audits to help manage product supply chain risks, and we enact and monitor rigorous corrective action plans as required.**

To mitigate risk and achieve improvements in performance, affordability and operational efficiency, we apply a tailored risk-based engagement strategy. Our approach includes a supplier rating process that helps us make decisions, predict performance and identify suppliers at risk of reduced performance. This process also encapsulates supplier performance expectations and an opportunity for recurring communications.

## Orbital ATK Integration

2019 marked the first full year of operations following the acquisition of Orbital ATK. As part of the integration, the Global Supply Chain organization took a best-of-both approach to systematically evaluate heritage Northrop Grumman as well as Orbital ATK's supply chain processes and procedures. This approach leveraged synergy in the supply base, ethics and business conduct, as well as policies, procedures and contracting terms, allowing for agile operations and positioning Northrop Grumman to provide improved affordability and service to our customers. Global Supply Chain executed numerous initiatives in these areas to enhance our operations and efficiency.

- Organizational Development
- Supplier Quality
- Supply Chain Shared Services
- Supplier Diversity
- Policies and Procedures
- Supply Chain Security
- Supply Chain Systems

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## U.S. Customs and Border Protection Trusted Trader Program

As a company with global operations and a dedication to worldwide security, we are committed to complying with worldwide trade security standards. Since its inception in 2014, Northrop Grumman is one of only seven companies selected nationwide to participate in the Customs and Border Protection (CBP) Trusted Trader pilot program. The program focuses on securing and modernizing the U.S. import supply chain to increase global competitiveness, while allowing CBP to operate more efficiently by redirecting enforcement resources to higher risk importers. The Trusted Trader program selection criteria includes a company's ability to demonstrate strong internal customs compliance controls as well as the strength of their supply chain security processes and procedures. Participation in the program allows us to ensure a secure supply chain while minimizing potential disruptions, improve import process predictability and reliability and foster a strong level of trust with the U.S. Government. For additional trade security information and resources, please see our [Global Trade Security](#) webpage.

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## Cybersecurity Mentor-Protégé Program

In 2019, Northrop Grumman, through its Mentor-Protégé Agreement with the U.S. Air Force, collaborated with its Protégé, the University of Southern California (USC) Center for Economic Development and several Historically Black Colleges, Universities/Minority Institutions (HBCU/MI) and Procurement Technical Assistance Centers (PTACs) to deliver cybersecurity training to over 3,200 individuals from over 2,600 small businesses from all 50 states. The training was provided at no cost to the participating U.S. Department of Defense contractors. The objective was to educate businesses regarding implementation of the security controls found in National Institute of Standards and Technology (NIST) Special Publication 800-171, Protecting Unclassified Information in Nonfederal Information Systems and Organizations.

In addition to this training, Northrop Grumman remains committed to minimizing cybersecurity risks in the supply chain by providing additional information and resources available on our [Cybersecurity Resources for Suppliers](#) webpage.

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## Transportation and Logistics

Northrop Grumman has been a registered EPA SmartWay Transport Partner since 2008, enabling us to increase our visibility into our freight transportation activities and optimize the modes of transportation that we use. SmartWay Carriers account for more than 98% of our freight transportation requirements. Additionally, we have transitioned a significant portion of international shipments from air to surface modes. These initiatives have resulted in increased shipment efficiency, decreased fuel use, and reduced Scope 3 greenhouse gas emissions.

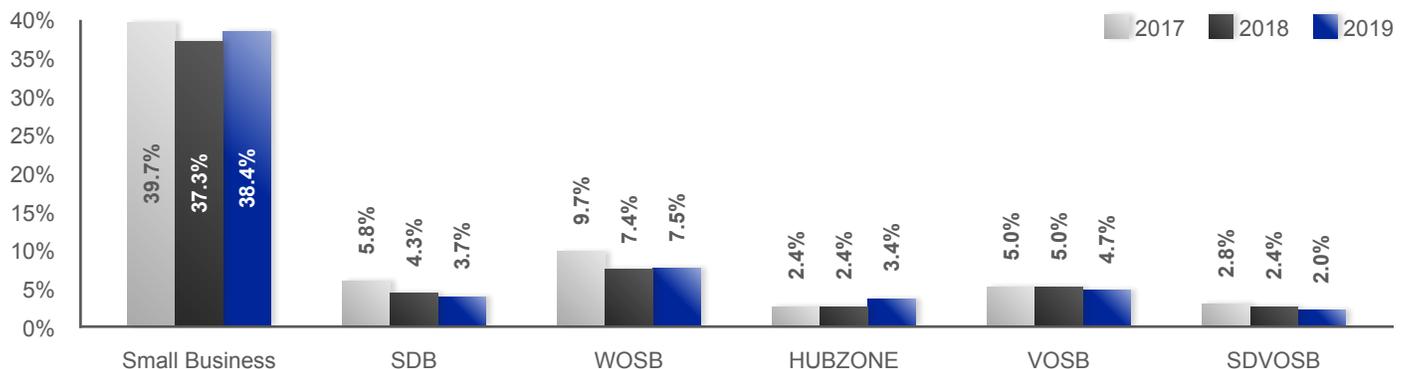


# Supplier Diversity

Maintaining a diverse supply chain is a business imperative and critical to creating value for the enterprise and our customers. The Northrop Grumman Global Supplier Diversity Program (GSDP) connects us to small and diverse business enterprises, including businesses owned by minorities, women, veterans, service-disabled veterans, people with disabilities, the LGBTQ community and businesses located in Historically Underutilized Business Zones (HUBZones), as well as partners at Historically Black Colleges and Universities, Hispanic-Serving Institutions and Tribal Colleges and Universities. We host outreach events for members of the small business community, offer mentoring programs and sponsor academic, customer and industry activities that support small business growth and development. For more information, please see our [GSDP webpage](#).

Of the more than \$11 billion in domestic spending on subcontractors during government fiscal year 2019, 38.4% or \$4.3 billion was awarded to small business suppliers. Northrop Grumman has met and exceeded the 23% U.S. government small business statutory goal for more than 14 consecutive years.

## Diverse Supplier Spend\*



\*The data herein is inclusive of operations formerly part of Orbital ATK, beginning with the 2019 government fiscal year.

SDB: Small Disadvantaged Business  
 WOSB: Women-Owned Small Business  
 HUBZONE: Historically Underutilized Business Zone

VOSB: Veteran-Owned Small Business  
 SDVOSB: Service-Disabled Veteran-Owned Small Business

# Supply Chain Security

We maintain a robust and mature security program to protect and secure our personnel, resources and information, as well as those of our customers and suppliers as required. We expect our suppliers to not only comply with counterfeit parts and cybersecurity regulatory requirements but also to provide resilience in our products and adequate security for our intellectual property and proprietary information. We proactively engage with our customers and industry to identify and define effective cybersecurity policies without placing excessive burdens on small businesses.

**We proactively engage with our customers and industry to identify and define effective cybersecurity policies without placing excessive burdens on small businesses.**

Northrop Grumman's procedures and procurement strategies are designed to detect and prevent counterfeit material from entering our supply chain. We maintain both a material authenticity and information security clause in our Enterprise Terms and Conditions in order to contractually bind our suppliers to counterfeit prevention and maintenance of reasonable and appropriate security controls designed to protect against cyber attacks.

In 2019, we delivered enhanced enterprise material authenticity training for supply chain, quality, engineering, program management and receiving. This training strengthens awareness and provides guidelines on the prevention, detection and mitigation of counterfeit parts to preclude them from entering our products. Additionally, our Counterfeit Material Detection and Avoidance program requires sourcing of parts from suppliers that have been vetted for their counterfeit prevention processes. If approved suppliers are not available, more stringent quality control measures are employed to validate the authenticity of parts.

We continue to enhance our supply chain cybersecurity program against the ever-increasing threat. Going beyond customer requirements, in 2019 we established a supply chain maturity model aligned with the National Institute of Standards and Technology (NIST) Special Publication 800-161, Supply Chain Management Practices for Federal Information Systems & Organizations, with targeted improvements in the areas of Risk Definition, Governance, Impact Levels, Support Process, Supplier Information Security, Supplier Management and Incident Response.

2019 initiatives to enhance cybersecurity included:

- Focusing on system enhancements to our tiered supplier sourcing process to identify suppliers with adequate cybersecurity protection for the sensitivity of the data stored or processed on their information system. By leveraging this tiered sourcing strategy, we were able to concentrate greater effort on the suppliers with the most sensitive unclassified information on their information systems.
- Developing a supply chain cybersecurity risk management capability that quickly enables a program team to see the sensitivity of information their suppliers develop, process or store on their information systems and their supplier's ability to adequately protect the data.
- Integrating supply chain cybersecurity into our procurement and supplier management processes, from selecting teammates for future offerings, sourcing and supplier qualification, through supplier management after contract award.

We maintain a public supplier cybersecurity resources website to assist our suppliers and those of the industrial base in implementing effective information security. Refer to our [Cybersecurity Resources for Suppliers](#) webpage for additional information.

We continue to collaborate with government and industry partners to develop and drive common strategies and standards to reduce the risk of counterfeit material and cyber attacks. In 2019, Northrop Grumman continued to lead the Aerospace Industries Association (AIA) Supplier Management Council Cybersecurity working group. The group is a forum for sharing best practices and providing supplier resources and communications regarding management of cyber risk in the supply base. The group also provides feedback to U.S. government policy makers on the effectiveness and feasibility of proposed policy and its impact on small businesses.

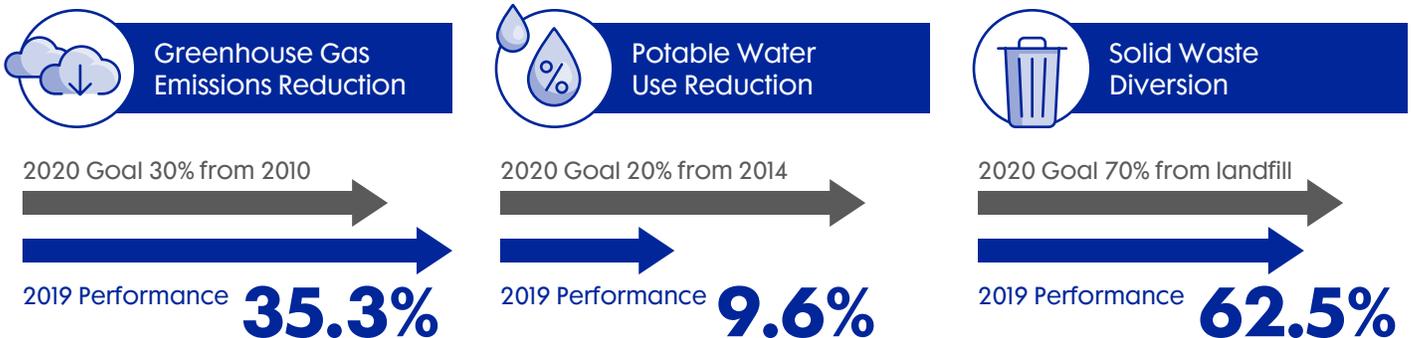


# ENVIRONMENT

Northrop Grumman understands the impacts of our business and recognizes the value of environmental sustainability on both a local and global scale. We strive to be responsible stewards of the environment by proactively managing our impacts and enhancing the sustainability of our operations.

This year, Northrop Grumman focused on promoting operational efficiency and increasing accountability by refining our standards for environmental management and executing innovative solutions to reach our 2020 environmental sustainability goals. In this section, we highlight programs to manage our environmental footprint and meet our compliance obligations as well as the actions we are taking to reduce our use of natural resources, promote environmental sustainability and increase the efficiency and effectiveness of our remediation projects.

## ..... 2020 Environmental Goals and Performance .....



For more information on our progress toward these goals, please go to [page 37](#). Environmental data reported throughout this section, including these goals, exclude operations that were formerly part of Orbital ATK.

# Environmental Management

In alignment with the company's Environmental, Health and Safety (EHS) policy, our goals, programs and procedures underpin a culture committed to proactive management of environmental impacts. We execute this commitment through comprehensive programs that help maintain compliance and reduce EHS risk while driving for continual improvement. EHS compliance assessments are conducted within each sector to support execution of EHS compliance programs. These assessments encourage the timely implementation of corrective actions as a way to promote risk mitigation and continual improvement. In addition, we maintain a corporate EHS Management System requirement based on the International Standards Organization (ISO) 14001 and ISO 45001 standards and implement the system at most of our major manufacturing sites across the enterprise. This systems-based approach to compliance ensures that our sectors and sites recognize how key processes interrelate and how active management can drive down EHS risks and improve overall performance.

MATERIAL ISSUE

## Environment

### Why It's Important

Northrop Grumman has cultivated a strong value system that exemplifies responsible citizenship and reflects the priorities of our employees, customers and investors; and those priorities include conducting our business in an environmentally responsible manner.

Currently, 26 of our sites, which make up 37% of our global footprint, have achieved external certifications for their environmental and/or health and safety management systems.

We rely on EHS professionals at all levels of our operations to implement environmental programs, such as our management systems, and to track performance against established goals and targets. We also utilize enterprise-wide educational campaigns and job-specific training to promote employees' awareness of our environmental programs and goal performance.





## 2019 Corporate Forum Participation

Our EHS professionals continue to participate in EHS forums, domestically and internationally, as a way to support industry collaboration and keep informed of best practices that could help support overall environmental management and achievement of our environmental sustainability goals. In 2019, our participation in these forums, meetings and events provided us the opportunity to collaborate with our peers on the development of solutions to address common environmental issues and to keep track of emerging trends and regulatory changes on the horizon. We have highlighted some of our important forum participation for the year.

- Association of Climate Change Officers
- Conservation International Business and Sustainability Council
- Corporate Eco Forum
- International Aerospace Environmental Group (IAEG)
- Organization Resources Counselors: Health, Safety and Environment (ORCHSE)
- Renewable Energy Buyers Alliance

# Environmental Sustainability

Northrop Grumman's commitment to environmental sustainability is a key aspect of our company's culture that resonates with our employees, benefits our communities and is of increasing importance to our investors. We hold ourselves accountable to this commitment by maintaining environmental sustainability as one of the company's seven non-financial ESG performance metrics, focusing on greenhouse gas emissions (GHG) reductions, water conservation and solid waste diversion.

Through efforts to manage and reduce our environmental impact, we have improved operational efficiencies, realized long-term cost savings and enhanced our understanding and management of climate-related risks and opportunities. As we approach the culmination of our 2020 goal period, we remain committed to project execution. We are embracing our environmental sustainability journey and we are confident that our vision, investment and commitment will result in further meaningful change in the future.

We manage our environmental impacts with transparency, so it is important that our environmental sustainability goals and GHG, water and solid waste inventories include the full portfolio of facilities where we have operational control (consolidation approach). To ensure our data is accurate, our GHG emissions and potable water use data also undergo third-party verification each year and those verification statements are available at our [corporate responsibility webpage](#).

## GHG Emissions

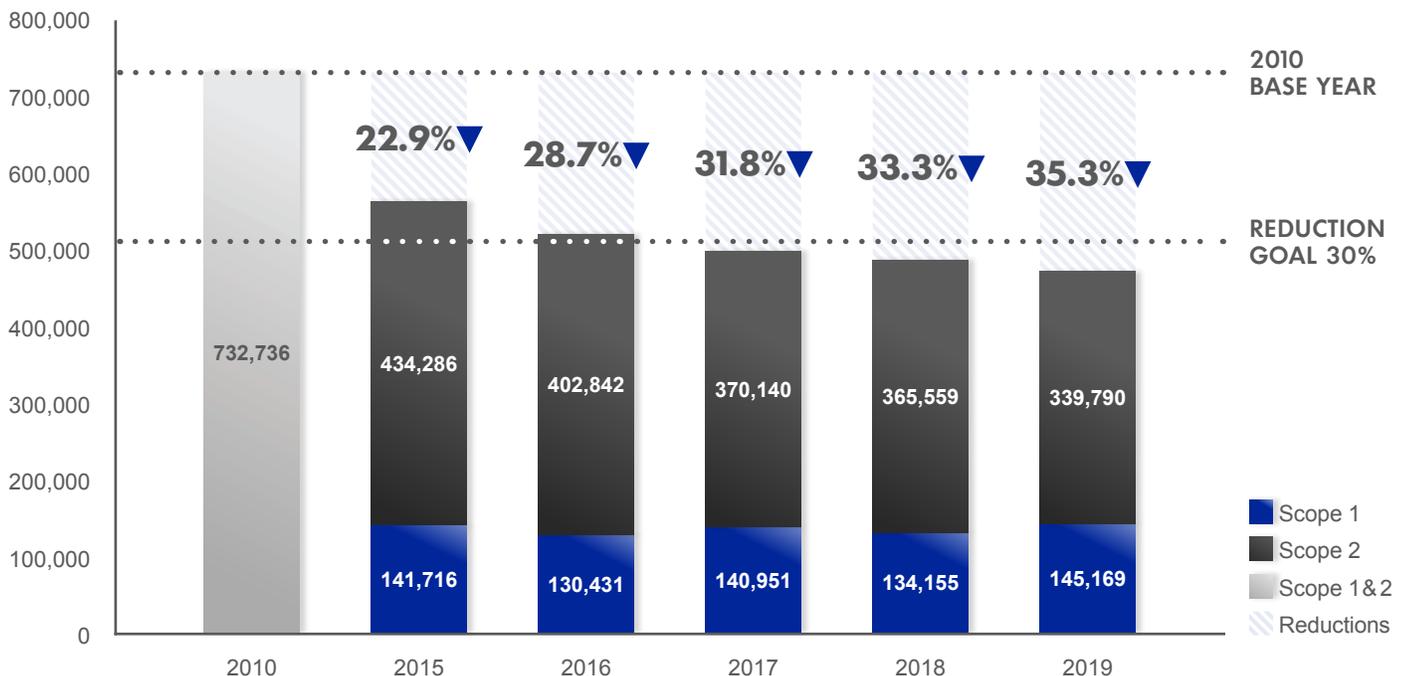
We met our GHG emissions reduction goal in 2017, three years ahead of schedule, and we are committed to sustaining this level of performance through 2020. Our focus remains on actively implementing projects that further reduce our emissions, support energy efficiency and improve operational performance. We maintain high-quality data and performance tracking through third-party verification to the International Organization for Standardization (ISO) 14064-3.

## 2019 Highlights

- Maintained performance beyond our 2020 goal (30% reduction) with a 35% reduction from our 2010 base year.
- GHG reduction projects implemented across the company reduced an estimated 7,854 MTCO<sub>2</sub>e annually.
- Executed an Energy Service Agreement (ESA) at our St. Augustine, FL site that implemented several energy efficiency projects designed to reduce nearly 700 MTCO<sub>2</sub>e annually.
- Upgrading lighting to LED fixtures resulted in 1,832 MTCO<sub>2</sub>e of GHG emissions reductions annually.
- Achieved an A- Leadership rating on the 2019 CDP Climate Change program. Please see the full report for details on our climate change risk management, energy consumption and GHG emissions (including Scope 3). Our CDP climate change response includes information about our risk management approach, in alignment with guidance of the Task Force for Climate Related Financial Disclosures (TCFD).

## Total GHG Emissions (metric tons CO<sub>2</sub>e)

Percent reductions calculated for 2015–2019 reflect 11,000 metric tons CO<sub>2</sub>e in carbon offsets annually.



GHG emissions data presented above includes the following gases: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub> and NF<sub>3</sub>. We develop our GHG emissions inventories in accordance with The GHG Protocol Corporate Standard and in alignment with the International Aerospace Environmental Group Greenhouse Gas Reporting Guidance.

# Water Conservation

Our 2020 water goal has been an important factor in helping us improve how we manage the water we use and find creative ways to achieve water savings throughout our operations. While all of our projects individually result in meaningful water savings, making progress towards our 20% water reduction goals continues to be a challenge due to offsets from real-estate growth, water leaks and system inefficiencies, and increases in water intensive processes.

In 2019, we remained committed to closing the gap between our annual water performance and our 2020 water reduction goal. Recognizing the issues that have historically offset our past successes, we focused this year on improving water-system monitoring, optimizing equipment controls and setting the foundation for future savings by completing a variety of high-impact water reduction initiatives.

While the progress towards our water goal was limited this year, the projects we implemented are projected to conserve 146 million gallons of water annually.

## 2019 Highlights

- Focused effort on the operational efficiency of cooling towers nationwide, estimated to conserve approximately 30 million gallons of water annually.
- Implemented upgrades and modifications to our irrigation systems nationwide, conserving approximately 16 million gallons of water annually.
- Optimized evaporative cooling units at Palmdale, conserving approximately 47 million gallons annually.

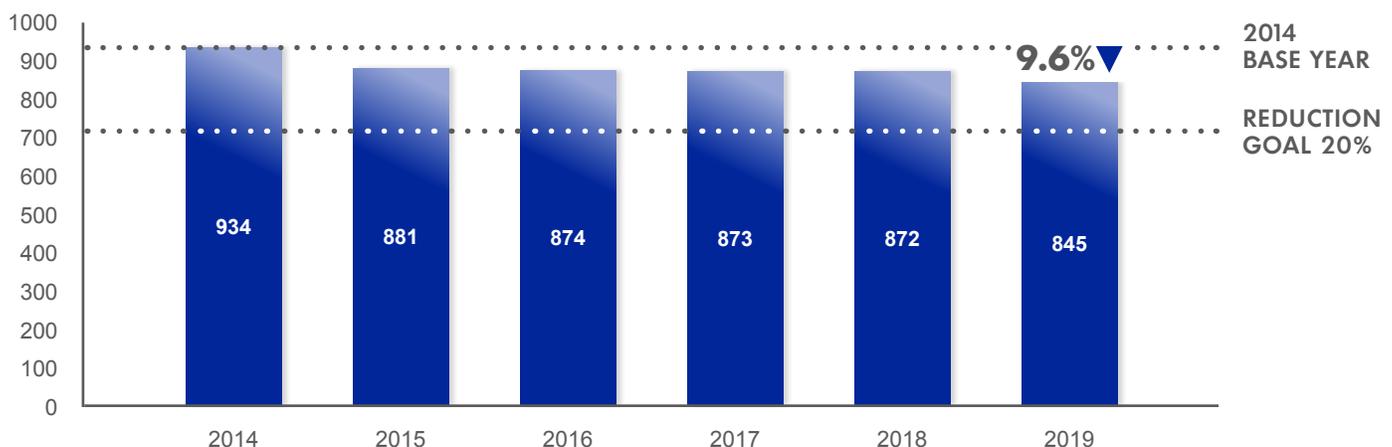
# Water Management Overview

In 2014, we established our enterprise-wide water goal to reduce potable water use in our global operations by 20% from our 2014 base year. Our emphasis during this period has been on increasing our understanding of how water is used across the enterprise as well as driving increased efficiency in our operations. We recognize that water is a shared resource and know that some regions in which we operate have localized challenges with water availability. While we work to further understand our water use, risks and opportunities over the long term, for this goal period, we have promoted water equity by implementing conservation projects in water stressed locations where we have concentrated operations like the southwestern United States, California and parts of Australia.

## We have prioritized performing water use assessments and implementing conservation projects at facilities in water stressed regions.

We have also invested in onsite water use assessments to inform our approach to water conservation. Since 2015, we have completed 11 water assessments at sites contributing to 71% of our water footprint (by base year usage). Looking forward into 2020, we will continue to execute on projects estimated to reduce an additional 56 million gallons annually to further drive performance towards our goal.

## Potable Water Use (million gallons)



## An Innovative Solution to Save Water

This year, individuals from the environmental remediation and environmental sustainability disciplines at our St. Augustine facility came together to implement an innovative solution to a multi-faceted water problem. Throughout the year, two environmental professionals from this site worked together to demonstrate to stakeholders that the contaminated groundwater from an ongoing remediation project could be successfully treated by pumping it through the site's existing on-site cooling tower. The team explained that the cooling tower, without any modifications, could perform the same function as a pump and treat system that is traditionally used to remove volatile organic compounds (VOCs) from contaminated groundwater. Through multiple simulation tests and technical discussions, the team was able to convince multiple internal and external stakeholders, including Florida Department of Environmental Protection, that the proposed system would adequately remove all contaminants of concern from the groundwater.

By redirecting groundwater to the system and adjusting the cooling tower's operating parameters, the team is able to double the treatment rate of contaminated groundwater, reduce capital cost of having a separate pump and treat system, eliminate the need for additional permits and reduce the amount of potable water used at the site.



**\$10K**

REDUCTION IN ANNUAL UTILITY COSTS

**7M**

GALLONS CONSERVED ANNUALLY

**15 YEARS**

SAVED IN THE REMEDIATION PROCESS

Northrop Grumman facilities withdraw freshwater from municipal supplies and directly from groundwater; our facilities do not withdraw water from seawater or produced water sources. Within our operations, these withdrawals are primarily used to support building evaporative cooling and humidification, boiler and scrubber make-up, plating operations, washing or rinsing components during manufacturing processes, and traditional domestic water uses. All water discharges from our operations go directly to the sanitary sewer and follow the local regulatory requirements for quality.

## 2019 Withdrawals

Source	Gallons of Water
<b>Total Freshwater Withdrawals</b>	
Third-Party, Municipal Supply	683 Million
Groundwater	162 Million
<b>Other Water Withdrawals (Out of Scope of Our Water Goal)</b>	
Third-Party, Municipal Reclaimed Water Supply	18.6 Million
Surface Water, Onsite Rainwater Capture	0.09 Million

## Solid Waste Diversion

We are committed to supporting initiatives at our sites that promote long-term sustained waste diversion for the company. Using technology and more frequent monitoring, we have been able to progress from estimating our generation rates to reporting our actual waste generation rates. From accurate data, we can make better decisions on right-sizing dumpsters and improving pickup schedules. Waste assessments have identified waste streams that should be recycled, composted, reused or donated to local organizations.

Waste diversion performance in 2019 declined slightly from the prior year largely as a result of changes in waste hauling services at some of our key sites. In 2020, we will continue working to mitigate this issue and maintain our focus on implementing projects that will drive performance to our 70% solid waste diversion goal.

### 2019 Highlights

- Completed solid waste diversion projects that will divert 1,361 tons from landfills annually.
- Sites focused on improving diversion of heavy commodities including wood and scrap metal.
- Installed over 100 dumpster sensors at nine large sites that measure fullness rates and content. This technology enables sites to optimize utilization, lower hauling costs and improve data quality.
- Implemented offsite recyclable sorting from general refuse dumpsters at sites across Maryland to increase diversion by approximately 282 tons.

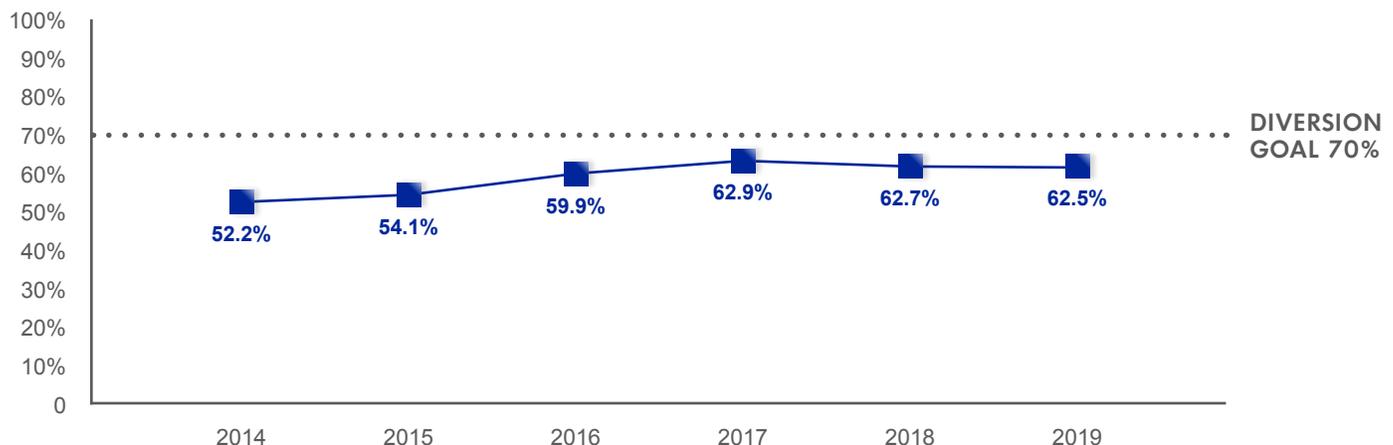
## Management of Hazardous Materials

Northrop Grumman is committed to responsibly managing hazardous materials across all operations. As a large manufacturing company, our hazardous material use is highly influenced by fluctuations in product demand and the material specifications from our customers. Internal business activities such as research and development and facility-specific projects also contribute to our hazardous material use. The volatility of these factors make it difficult to set quantitative, short-term goals around the reduction or substitution of our hazardous substances, but we continue to look for opportunities to substitute and minimize the use of hazardous substances where possible.

In 2019, hazardous waste totals were 13% lower than what was reported for 2018; however, this change is largely because of the significant construction and demolition activity that was underway in 2018. Since that activity has been completed, this year's generation rates more closely align to the company's historical hazardous waste trends and remain in-line with production changes and modernization activities taking place across our larger facilities. We also registered zero reportable spills of hazardous materials in 2019. We continue to look for opportunities to reduce hazardous waste generation where technically and economically feasible.

For more details, including relevant regulatory activity, please see the ESG Performance Data Matrix in the Appendix.

### Waste Diversion Rate from Landfill\*



\*Diversion rate includes waste to energy, but does not include construction and demolition debris.

# Environmental Sustainability Highlights

The environmental projects we implement to achieve our 2020 goals are designed to drive long-term sustainability across Northrop Grumman. The following highlights include a cross-section of initiatives we implemented to create a positive impact on the environment.

## Green Buildings

One strategy we employ to minimize the impact of our operations as we expand our business is using green buildings. We have operations in 15 certified green buildings, which total more than 2.5 million square feet of floor space:

- 13 buildings designed to U.S. Green Building Council® Leadership in Energy and Environmental Design (LEED®) standards.
- Two buildings have been certified to the U.S. Environmental Protection Agency ENERGY STAR® Program for energy-efficient equipment and building systems design.

## EV Charging Stations

Our electric vehicle (EV) Workplace Charging Program is becoming an increasingly important service that we are providing our employee population. In 2019, we had 1,262 employee drivers participating in the program, which is a 50% increase from 2018. To accommodate this growing demand, we added 23 new “level 2” charging connections to ease congestion, which brings the total number of chargers at the 23 participating sites to 114. We anticipate this program will continue to grow steadily year over year.



## Ecosystem Conservation

Forests play an important role in sequestering carbon and maintaining biodiversity around the world. To promote forest conservation, we continue our multi-year commitment and purchase of 11,000 MTCO<sub>2</sub>e of American Carbon Registry-certified carbon offsets. These conservation-based carbon offsets are generated by the Mississippi Valley Reforestation Project in the southeastern United States and are supporting the re-forestation of the Lower Mississippi Alluvial Valley, one of the most important ecosystems in North America.

## Renewable Energy

We currently have three company-owned on-site solar systems and one landlord-owned system located at one of our leased facilities. In addition, we continue our long-term commitment to purchase Renewable Energy Certificates (RECs). In 2019, our renewable energy sources generated 22,097 MWh of electricity. We continue to investigate new opportunities to increase our use of renewable energy across our operations.

## Food Waste Digester in Salt Lake City

Our facility in Salt Lake City, Utah recently implemented a process to capture compostable food waste from the onsite cafeteria to send to a newly opened local organic waste composting facility. The facility uses an anaerobic digester to convert organic waste into nutrient-rich fertilizer and is able to capture 100% of the methane gas produced as byproduct of the food waste decomposition process. The methane gas is then introduced into the local natural gas pipeline and used for energy. The introduction of food waste composting at the site is projected to divert 50,000 pounds of organic waste away from landfilling each year.



# Environmental Remediation

Northrop Grumman is committed to addressing environmental remediation obligations resulting from operations conducted prior to the enactment of applicable federal, state or local regulations. We strive to execute the lifecycle of these obligations in a scientifically sound and technologically proven manner, protecting human health and the environment. We strategically employ innovative technologies as alternatives to traditional resource-intensive remediation practices—reducing environmental disturbance, reducing energy use and accelerating the resurrection of ecosystems to beneficial use.

## Former U.S. Navy/Grumman Facilities in Bethpage, New York

We continue to be engaged in remediation activities from historic operations at the former United States Navy and Grumman facilities in Bethpage, New York. Northrop Grumman continues to work closely with the NYSDEC, the U.S. Navy and other federal, state and local government regulatory authorities, to address environmental conditions in the area. We remain committed to pursuing scientifically sound, targeted and effective remedial approaches that protect the health and well-being of the community and avoid unnecessary disruption. Additional information on this project and the site's history is available at our [website](#).

## Former Printing Manufacturing Site, Western Massachusetts

Northrop Grumman continued addressing groundwater and soil impacts from former printer manufacturing operations at a 31-acre legacy site in western Massachusetts. To address a rarely occurring cadmium contaminant in groundwater, we continued implementation of an advanced remediation method, employing in-situ treatment using calcium polysulfide (CPS). CPS was applied over a one-acre area to treat more than 1.5 million gallons of groundwater. The CPS technology proved to be a sustainable application and provided instantaneous treatment of the contaminated groundwater. Following completion of the groundwater remediation, we excavated and removed approximately 600 tons of contaminated wetland and riverbed soils to protect all ecological receptors in the area around the former manufacturing facility.





# CORPORATE CITIZENSHIP

Corporate Citizenship at Northrop Grumman starts with people—the people in our communities, the people we employ and the people that may become part of our workforce. Together, we help to make the lives of the people in our communities better, safer, successful and more resilient. Northrop Grumman and its employees aspire to do just that by contributing their time, talent, dollars and passions to make stronger communities possible.

We incorporate Northrop Grumman's core values as we develop sustainable, beneficial partnerships with our employees, customers, shareholders and communities. Our philanthropic strategy focuses on building partnerships to increase STEM educational opportunities for students of all backgrounds, engage employees through volunteerism, address community needs and enhance Northrop Grumman's reputation as a valued community partner. These investments are thoughtful in nature and encompass organizations and programs that support education, service members and veterans, health and human services and environmental stewardship.

## 2019 Giving to Charitable Causes

EMPLOYEES  
**\$3.4M\***

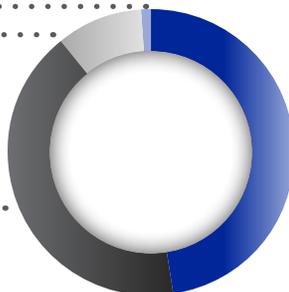
IN-KIND/NON-CASH  
**\$0.3M**

**\$34.8M\*\***

DIRECT TO PROGRAMS FROM NORTHROP GRUMMAN, THE NORTHROP GRUMMAN FOUNDATION AND OUR EMPLOYEES

FOUNDATION  
**\$14.5M**

COMPANY  
**\$16.6M\*\***



\*Includes ECHO workplace giving, fundraising campaigns and employee donations for education matched by the company.

\*\*In addition, Northrop Grumman donated \$20M to the Foundation in 2019.

# Corporate Citizenship

## Why It's Important

Being a good corporate citizen helps build vibrant communities, which include a STEM-capable workforce, while also positioning Northrop Grumman as an employer and business of choice. Through our initiatives, we are helping to build a company that will perform in a responsible and sustainable manner for the long term and create value for our stakeholders.

## STEM Education

Northrop Grumman designs and manufactures some of the world's most advanced technologies. In order to continue to innovate and excel, it is imperative for us to help develop and expand a diverse workforce for the future. To that end, we created an education strategy that places top priority on increasing STEM educational opportunities for students globally. These partnerships focus on engineering and technology-based initiatives that excite, engage and educate students, with an emphasis on middle school and university level programs.

In addition, we provide workforce-relevant professional development to middle school educators to advance their competence in teaching STEM subjects, helping them inspire students to explore STEM careers and increase their STEM skills proficiency.

In alignment with the United Nations Sustainable Development Goal #4, by 2030 we aim to help increase math and science proficiency for 350,000 students by providing professional development to middle school educators. Our goal is based on an average of 81 teachers per year, who stay in the field for 3 years and teach an average of 100 students per year. Through 2019, these efforts have reached 335 teachers and 33,500 students.



## Australian National University

Northrop Grumman Australia partnered with the Australian National University (ANU) to directly support the National Indigenous Summer School. This week-long program brings up to 40 indigenous high school students to the ANU for mentoring, hands-on activities, cultural experiences, discipline-specific sessions and social events. Each summer, participating youth from the Aboriginal and Torres Strait Islander community have the opportunity to challenge their preconceptions about university study, STEM learning and developing their own potential.

## The REC Foundation—VEX Robotics

We contributed to REC's new initiative to increase accessible teams for deaf and hard of hearing communities. In addition, we continued as the title sponsor of the VEX Robotics World Championship and supported new teams in Australia, Japan, South Korea, the U.K. and the U.S.

## ..... Outcomes from Our STEM Contributions .....



Relevant STEM educational experiences for students and teachers



Increase in students' understanding of how classroom learning connects to STEM careers



Global gender parity in STEM careers



A robust and diverse pipeline for tomorrow's workforce

## Unmanned Aerial Vehicle (UAV) Academy

Northrop Grumman's Autonomous Systems Center of Excellence in San Diego, California hosted a weeklong global education and cultural exchange program, which provided six high school students from Japan and six students from San Diego the opportunity to learn about unmanned systems technologies. The Academy helped foster engagement between Japanese and U.S. students as they learned about each other's cultures. During the program, the students learned how to build and fly UAVs, completing various mission scenarios while working together on team-building skills.



## Computational Thinking and Computer Science

In 2019, we developed new partnerships and expanded existing ones to bring computer science, computational thinking and cyber to life in classrooms. Additionally, we held monthly STEM webinars where employees learned about our partners and ways they can engage as volunteers.

**Our computer science and computational thinking programs are an integral part of our STEM outreach portfolio.**

### CSforALL

This initiative helps K–12 computer science education content providers and educational institutions close the gap in curriculum and platforms. It focuses on increasing access to computer science to all students, including those with disabilities and learning differences.

### National Center for Women and Information Technology AspireIT

This national initiative aims to increase girls' access to meaningful, inclusive computer science education, dramatically widening the pool of underrepresented

young women entering high school and college with computing experience. This near-peer model connects girls interested in computing with “program leaders”, young women in high school and college who share their excitement about computer science. Participants report increased self-efficacy and interest in computing, as well as an intent to pursue further computing activities. In turn, program leaders develop valuable leadership skills and are supported with their own mentor relationships with technical professionals through the NCWIT Alliance.

### Code.org

We provided funding for teachers to participate in a computer science professional development workshop with Code.org. The workshop aims to empower and enable teachers to implement the CS Discoveries course in their schools. This course engages students in grades six through nine with computer science as a medium for creativity, communication, problem solving and fun.

### Cyber Schools Hub

An element of the U.K. Government, the National Cyber Security Center (NCSC), hosts the Cyber Schools Hub program. Originally launched as a pilot, Northrop Grumman U.K. has been an industry partner within the community at Cleeve School in Cheltenham. Our cyber-savvy employees have volunteered to help develop age-appropriate cyber curriculum, support teachers and mentor students to enhance their understanding of cyber academic, extra-curricular and career opportunities.

## eMentoring with TryEngineering Together

We launched a new eMentoring program in partnership with TryEngineering Together. The program pairs students in grades six through eight with Northrop Grumman volunteers who mentor students virtually, allowing employees to effectively provide valuable advice, lessons and feedback to students, regardless of where they are located. Mentors received the training, content and resources needed to create a successful and rewarding mentoring experience.

The TryEngineering Together eMentoring program offers teachers a series of units on current standards-aligned STEM topics, such as aerospace, engineering careers and engineering and technology in support of environmental concerns. Throughout the unit, students and eMentors exchange emails discussing what they are learning, posing and answering questions and seeking advice about how to integrate the designs they put together for their hands-on activities. In addition, eMentors are encouraged to share information about their educational backgrounds, careers and passion for STEM. During the first year of the program, 113 students and mentors participated, exchanging close to 600 emails.



**"I volunteered to be an eMentor because I have a passion for providing help, support and guidance to anyone, no matter the connection."**

SHEANAVIA REESE, NORTHROP GRUMMAN  
SOFTWARE ENGINEER

## STEM Outreach Commemorating Apollo 11 50th Anniversary

Northrop Grumman employees celebrated the 50th anniversary of the Apollo 11 mission, which landed the first human on the moon. Many of our legacy companies played key roles in the mission's success, including designing and integrating the famed lunar module, the Eagle. Employees across the country commemorated this historic mission through activities and volunteerism. A few of these include the examples listed below.

- **Chandler, Arizona:** Volunteers shared their excitement of rocket building and aerospace with over 3,000 attendees at the Arizona Science Center.
- **Clearfield, Utah:** Employees visited elementary schools to teach students about the engineering process through rocket building. During the activity, students built a simple rocket out of paper and tape and experimented with different designs. Students tested them on a rocket launcher, evaluated their performance and then redesigned their rockets. They were encouraged to be creative with their designs, and volunteers taught them that failure is an important part of engineering. Since 2015, over 400 volunteers have reached out to ~10,000 students at 88 schools in northern Utah. In addition to elementary school visits, volunteers led a rocket building activity at Weber State University's Science Saturday in celebration of Apollo 11.
- **Elkton, Maryland:** Campers from the YMCA Rocket Rampage! summer camp learned the basics of rocketry, built and flew model rockets and toured our facility. Employees also volunteered in the Mission to the Moon program at the Cecil County Public Library and led an activity where kids experienced life as an astronaut.
- **Huntsville, Alabama:** Huntsville-based U.S. Space Camp sponsored the Global Rocket Launch, attempting to set a Guinness World Record for the most rocket launches in 24 hours. Huntsville interns and employees joined in the fun by building and launching Estes rockets, guided by a Northrop Grumman rocket scientist.
- **Salt Lake City, Utah:** Employees volunteered at the Clark Planetarium and helped children build straw rockets, while sharing our strong historical connection with the Apollo mission and the world's first moon landing.



## Employee Engagement and Volunteerism

An important aspect of our corporate citizenship strategy is employee engagement. As we develop our partnerships, we seek ways to connect the passions and talents of our employees to the community. Not only does volunteerism offer employees the opportunity to give back, but it also allows them to meet and network with others, team build and develop leadership skills.

In 2019, employees logged 63,187 volunteer hours valued at \$1,606,845. Those employees who logged 40+ hours within a calendar year received a \$400 Community Service Grant to benefit the nonprofit or school where they volunteer. More than \$113,000 was distributed to nonprofits through this program.

### Excellence in Volunteerism Awards

The Excellence in Volunteerism Awards honor 10 individuals or teams who have demonstrated exceptional and consistent volunteerism. Eligible organizations nominate employees and Northrop Grumman provides a \$5,000 grant to each nonprofit organization on the awardee's behalf.

The award recipients in 2019 volunteered for various organizations including homeless shelters, food banks, Honor Flight, Girl Scouts and robotics teams. In addition, employees demonstrated excellence by participating in volunteer activities such as fire fighting, mentoring, tutoring and supporting service members and veterans.

# Support for Service Members, Veterans and Their Families

We take great pride in supporting our veterans and those who currently serve to protect our freedom. Through volunteerism, employee giving and charitable giving, we contribute to programs focused on wounded warriors, homelessness, employment and appreciation of service members, veterans and their families.

## Housing for Veterans

Northrop Grumman supports Local Initiatives Support Corporation and National Equity Fund's Bring Them HOMES initiative, providing predevelopment grants for affordable, permanent, safe and sustainable homes for veterans and their families. Since 2013, we have funded 36 projects that have resulted in 3,179 units of affordable housing of which 1,673 units were targeted for veterans. A few of these projects include the following:

- **Homes4Families** is building 56 homes to be sold to low-income veterans in Palmdale, CA. Homeowners are required to put in 500 hours of "sweat equity" to be part of the program and receive their home. Sweat equity is achieved through direct work on their home as well as enrollment in classes covering financial literacy, insurance and trauma-informed care. During three home builds with this organization, over 70 employees and their family members participated in construction activities.
- **HELP Walter Reed Apartments** provides 77 efficiency apartments for homeless and at-risk veterans in Washington, D.C. The development offers a range of social services and is located on the campus of the former Walter Reed Army Medical Center. This historic army medical campus is being reborn with new schools, shops, housing and community access, which will integrate this housing into an innovative mixed-use campus of commercial and services offerings.



- **HELP Perry Point Veterans Village** provides supportive housing for 75 formerly homeless veterans and their families. The development is located on the Perry Point Veterans Administration Hospital in Cecil County, Maryland offering close proximity to medical care and strong case management from the Veterans Administration.

## Addressing Military Spouse Unemployment

Northrop Grumman provided support for the Blue Star Families Military Family Lifestyle Survey, which is taken by over 10,000 service members, military spouses and veterans each year. The data obtained reveals their challenges and concerns, including the struggles military spouses face with underemployment and unemployment. These results have led companies and government alike to look for ways to help military spouses improve their abilities to find meaningful and stable employment that suit their lifestyles and skill sets.

In alignment with this initiative, Northrop Grumman developed a comprehensive giving strategy to assist military spouses overcome employment obstacles and support them at different stages of their job search efforts. We provided funding to various partners, which went towards scholarships, certificate and skills training, professional mentoring, corporate fellowships, networking events, job search tools, placement services and career consulting. In addition, over half of service member survey respondents with children reported that the unavailability of childcare had negatively impacted their pursuit of employment and/or education. To that end, our strategy also included support to the Armed Services YMCA for their childcare program.

Another one of our partnerships is with the organization American Corporate Partners. Currently, our employees mentor 50 transitioning service members through their corporate mentoring program. In 2019, we expanded our support to provide mentors for 25 military spouses. In addition, Northrop Grumman participated in two business summits hosted by American Corporate Partners and the White House. These summits brought together business leaders from across the country to discuss best practices and solutions for addressing military spouse unemployment.



## Tragedy Assistance Program for Survivors (TAPS)

TAPS provides comfort, care and resources to all those grieving the death of a military loved one. We were proud to sponsor their 25th National Military Survivor Seminar and Good Grief Camp held annually over Memorial Day Weekend. In preparation for the event, employees assembled 1,500 backpacks, folded t-shirts and wrote notes of encouragement for attendees. Employees also engaged in games and activities with the children attending the event.

## Soldier On

The Pathways program provides Australian veterans and their families with a formal case managed transition pathway from their service career to civilian employment and encompasses both employment and education opportunities as part of transitions. The program is supported by Soldier On's social engagement and psychology program to help manage the employment needs of the veterans as part of a holistic model of support.

# Strengthening Communities Around the World

Northrop Grumman builds partnerships to strengthen communities globally. These icons represent the types of programs we support in countries and regions around the world.

- Education
- Military and Veterans
- Health and Human Services
- Environmental Stewardship



## Bahamas Disaster Relief

Hurricane Dorian caused massive loss and devastation in 2019. We annually contribute to organizations such as the American Red Cross and Americares, so that they have a reliable funding base to assist with disasters worldwide as they happen. Team Rubicon also received our relief support after Hurricane Dorian. This organization pairs the skills and experiences of military veterans with first responders, medical professionals and technology solutions. Additionally, we developed a new partnership with All Hands and Hearts, a volunteer-powered disaster relief organization, to provide clean-up and rebuilding of homes, schools and other infrastructure in the Bahamas after the hurricane. We're also proud that some of the meals packed by our employees for Rise Against Hunger were delivered to the Bahamas.

## Arbor Day Foundation

The Arbor Day Foundation is the largest 501(c)(3) nonprofit membership organization dedicated to planting trees. They work to restore forests, improve tree cover in communities and inspire the next generation of tree planters. Through our contribution, the Arbor Day Foundation provided support to benefit Australia, Madagascar, the U.K. and the U.S.

## Conservation International

Our support for Conservation International's "Alliance for Brazil" offers a multifaceted approach to addressing the crisis of recent fires. The program helps to restore Amazon forests in areas impacted by fires, prevent future fires through technology, empower local and indigenous people to support fire patrols and provide greater access to business development opportunities for sustainably produced goods that do not necessitate deforestation.



## Rise Against Hunger

Since 2013, Northrop Grumman and Rise Against Hunger have worked hand-in-hand to help end world hunger. As part of Hunger Action Month in September, hundreds of employees annually volunteer at meal packing events. These meals provide sustenance throughout the world in school food programs, orphanages and crisis relief efforts. We received a special honor in 2019 for packing our 1,000,000th meal.



# Honors and Recognition

- Northrop Grumman was awarded the Bob Hope USO Patriot Award, which recognizes long-standing corporate partners for their support of service members, veterans and their families.
- In honor of our longstanding support and engagement with this community school district in Florida, we received the Brevard Public Schools Partner in Education of the Year award for large companies.
- The Northrop Grumman Foundation was honored with the Idealism in Action Award at City Year Washington, D.C.'s Idealist Gala.
- PR Daily recognized the Northrop Grumman Foundation and EarthEcho International for our corporate-nonprofit partnership surrounding the EarthEcho Expeditions series.
- We received the Association of California School Administrator's regional Partners in Education Excellence Award for our partnership with Poway Unified School District in California.
- Northrop Grumman received the North Dakota Association of Career and Technical Education Impact Award Business/Education Partnership for our support that resulted in Unmanned Aircraft Systems curriculum being implemented in the local school districts.

# APPENDIX

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## Partnerships and Professional Associations

Northrop Grumman maintains affiliations with a variety of organizations and universities that inform and enhance our performance. In addition, our list of Trade Association memberships is available on our website.

### Organizations

- Advancing Minorities' Interest in Engineering
- American Association of Exporters and Importers
- American Enterprise Institute
- American Society for Quality
- Americas Aerospace Quality Group
- Asian Business Association
- Association for Supply Chain Management
- Association of Corporate Citizenship Professionals
- Black Business Association
- Black Engineer of the Year
- Boston College Center for Corporate Citizenship
- Brookings Institution
- CAPS Research
- Catalyst
- Center for a New American Security
- Center for Strategic and Budgetary Assessments
- Center for Strategic and International Studies
- Conservation International Business and Sustainability Council
- Corporate Eco Forum
- Defense Industry Initiative
- Counterfeit Microelectronics Working Group
- Defense Industry Initiative on Business Ethics and Conduct
- Disability:IN
- Diversity Best Practices
- Equal Justice Works
- Ethics and Compliance Initiative
- Gartner Advisory Group
- Great Minds in STEM
- HUBZone Contractors National Council
- Human Rights Campaign
- Industrial Security Awareness Council
- Institute for Supply Management
- Institute of Business Ethics
- International Aerospace Environmental Group
- International Council on Systems Engineering
- International Forum on Business Ethical Conduct
- Latin Business Association
- Legal Aid Society of DC
- Military Spouse Employment Partnership
- National Association of Women Business Owners
- National Center for American Indian Enterprise Development
- National Classification Management Society
- National LGBT Chamber of Commerce
- National Minority Supplier Development Council
- National Organization on Disability
- National Science Teaching Association
- National Society of Black Engineers
- ORC Health, Safety, and Environmental Strategies
- Out & Equal Workplace Summit
- PsychArmor
- Responsible Minerals Initiative (formerly Conflict-Free Sourcing Initiative)
- Society of Asian Scientists and Engineers
- Society of Experimental Test Pilots
- Society of Flight Test Engineers
- Society of Hispanic Professional Engineers
- Society of Women Engineers
- Value of a Veteran

## Universities

- Arizona State University
- Australia National University
- Bowie State University
- California Institute of Technology
- California Polytechnic State University, San Luis Obispo
- California State Polytechnic University, Pomona
- California State University, Long Beach
- California State University, Los Angeles
- Carnegie Mellon University
- Coppin State University
- Cornell University
- Florida A&M University
- Florida Institute of Technology
- George Mason University
- Georgia Institute of Technology
- Howard University
- James Madison University
- Massachusetts Institute of Technology
- North Carolina A&T State University
- Purdue University
- RMIT University, Melbourne
- San Diego State University
- Stanford University
- University of Alabama, Huntsville
- University of Bristol
- University of California, Los Angeles
- University of California, San Diego
- University of Central Florida
- University of Colorado, Boulder
- University of Florida
- University of Maryland, Baltimore County
- University of Maryland, College Park
- University of Melbourne
- University of Michigan
- University of New South Wales
- University of Southampton
- University of Southern California
- University of Utah
- University of Virginia
- Utah State University
- Virginia Polytechnic Institute and State University
- Weber State University

## Selected Awards and Recognition

- Maintained a leadership score on the CDP climate change program for the eighth consecutive year—scoring A-
- Best Places to Work for LGBTQ Equality by Human Rights Campaign 2019
- America's Top Organizations for Multicultural Business Opportunities by Omni50—Ranked #1
- Platinum Hire VETS Medallion Award from U.S. Department of Labor 2019
- Military Friendly® Employer—Silver Award 2019
- Military Spouse® Friendly Employer—2019
- National Organization on Disability Leading Disability Employer 2019
- U.S. Veteran Magazine Best of the Best Veteran Friendly Companies and Top Supplier Diversity Programs
- Best Places to Work for People with Disabilities by Disability Equality Index (DEI) for the fifth year in a row. Achieved DEI of 100% in 2019.
- Forbes The Just 100 2019—Top ranking in the aerospace industry
- Indeed's Top-Rated Workplaces—#3 in Best for Veterans 2019
- Indeed's Top Rated Workplaces—The Top 50 overall 2019
- Indeed's Top Rated Workplaces—#14 in Best for Work/Life Balance
- American Heart Association 2019 Workplace Health Achievement
- CR Magazine 100 Best Corporate Citizens
- DiversityInc's Top 50 Companies for Diversity for the tenth year in a row
- DiversityInc—#1 for People with Disabilities
- DiversityInc—#1 for Veterans
- 2019 Top 50 Workplaces in STEM for Native American Professionals, Winds of Change Magazine
- Honored by the American Foundation for the Blind as a recipient of the Helen Keller award for diversity hiring
- Listed in Best of the Decade, WE USA Magazine 2019
- Cyber Warrior Diversity Inclusion Award
- 2019 Best-of-the-Best Corporation for Inclusion Award, National Business Inclusion Coalition
- Bowie State University College of Business, Best Employer Award 2019
- Champion of Veterans Enterprise Award, Veteran's Entrepreneur Training Symposium 2019
- 2019 Best of the Best in Top Employers and Top LGBTQ Friendly Companies, Professional Woman's Magazine
- CertiPath, LLC's first ever CERTI Award for innovation in data privacy
- Dow Jones Sustainability North America Index for the fourth consecutive year
- AA rating from MSCI for environmental, social and governance management and performance

# Reporting Approach

We have prepared this Sustainability Report in accordance with Global Reporting Initiative (GRI) Standards at the core level. The GRI Index below provides references to the relevant information addressing GRI disclosures. The Index also identifies how our performance disclosures relate to the United Nations Sustainability Development Goals (SDGs). This year, we are including an additional index to address the Sustainability Accounting Standards Board (SASB) disclosures where possible.

## GRI Standards Content Index

This content index indicates the location of each disclosure within this report, externally on our website or other reports or provides the information directly in a statement. We have also indicated how our reporting topic areas align with the U.N. SDGs; for more information see the [United Nations SDGs website](#).



PR: 2020 Proxy Statement  
PCG: Principles of Corporate Governance

## General Disclosures

Disclosures		Report Location (or direct information)	SDG Reference
<b>Organizational Profile</b>			
102-1	Name of the organization	<a href="#">Company Overview</a>	
102-2	Activities, brands, products, services	<a href="#">Company Overview</a>	
102-3	Location of headquarters	<a href="#">Company Overview</a>	
102-4	Location of operations	See Northrop Grumman website, <a href="#">Contact Us</a>	
102-5	Ownership and legal form	<a href="#">Company Overview</a>	
102-6	Markets served	<a href="#">Company Overview</a>	
102-7	Scale of the organization	<a href="#">Company Overview</a>	
102-8	Information on employees and other workers	<a href="#">People and Culture</a>	
102-9	Supply chain	<a href="#">Global Supply Chain</a>	
102-10	Significant changes to the organization and its supply chain	No significant changes occurred during 2019	
102-11	Precautionary Principle or approach	<a href="#">Governance—Risk Oversight; Environment</a>	
102-12	External initiatives	<a href="#">Stakeholder Engagement</a>	
102-13	Membership of associations	<a href="#">Partnerships and Professional Associations</a>	
<b>Strategy</b>			
102-14	Statement from senior decision-maker	<a href="#">To Our Stakeholders</a>	

Disclosures		Report Location (or direct information)	SDG Reference
<b>Ethics and Integrity</b>			
102-16	Values, principles, standards and norms of behavior	<a href="#">Our Values; Ethics</a>	SDG 16
102-17	Mechanisms for advice and concerns about ethics	<a href="#">Northrop Grumman OpenLine</a>	SDG 16
<b>Governance</b>			
102-18	Governance structure	<a href="#">Governance</a> ; PR 14	
102-19	Delegating authority	<a href="#">Governance</a> ; PCG Section IV.G	
102-21	Consulting stakeholders on economic, environmental, and social topics	<a href="#">Stakeholder Engagement</a> ; PR 5; PCG Section IV.G	SDG 16
102-22	Composition of the highest governance body and its committees	<a href="#">Board of Directors</a> ; PR 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 15	SDG 5, 16
102-23	Chair of the highest governance body	<a href="#">Board of Directors</a> ; PR 14, 15	SDG 16
102-24	Nominating and selecting the highest governance body	<a href="#">Board of Directors</a> ; PR 19, 20; PCG Section III.D	SDG 5, 16
102-25	Conflicts of interest	PR 20, 21, 41; PCG Section III.E; VII	SDG 16
102-26	Role of highest governance body in setting purpose, values, and strategy	<a href="#">Board of Directors</a> ; PCG Section I, II	
102-28	Evaluating the highest governance body's performance	<a href="#">Board of Directors</a> ; PCG Section VI.A, D	
102-29	Identifying and managing economic, environmental, and social impacts	<a href="#">Governance—Sustainability Oversight</a> ; PR 14, 15, 16, 17, 23	SDG 16
102-30	Effectiveness of risk management processes	<a href="#">Governance—Risk Oversight</a> ; PR 14	
102-31	Review of economic, environmental, and social topics	<a href="#">Board of Directors</a> ; PR 15	
102-32	Highest governance body's role in sustainability reporting	PR 23	
102-33	Communicating critical concerns	PCG Section IV.G	
102-34	Nature and total number of critical concerns	PR 5	
102-35	Remuneration policies	PR 26, 27, 28, 29, 36, 37, 39	
102-36	Process for determining remuneration	PR 26, 27, 28; PCG Section V.A, B	
102-37	Stakeholders' involvement in remuneration	PR 5, 35, 51	SDG 16

Disclosures		Report Location (or direct information)	SDG Reference
<b>Stakeholder Engagement</b>			
102-40	List of stakeholder groups	<a href="#">Stakeholder Engagement</a>	
102-41	Collective bargaining agreements	<a href="#">Talent Management</a>	SDG 8
102-42	Identifying and selecting stakeholders	<a href="#">Stakeholder Engagement</a>	
102-43	Approach to stakeholder engagement	<a href="#">Stakeholder Engagement</a>	
102-44	Key topics and concerns raised	<a href="#">Stakeholder Engagement</a>	
102-45	Entities included in the consolidated financial statements	Northrop Grumman Corporation NOTE: 2019 was the first full year after acquisition of Orbital ATK in June 2018. Quantitative data within this report includes those operations that were formerly part of Orbital ATK, with the exception of those areas where Northrop Grumman was nearing the conclusion of a goal period (specifically, our Diversity & Inclusion data and our Environmental data). These exceptions are noted within the report and in our performance data matrix.	
102-46	Defining report content and topic Boundaries	<a href="#">Material Issues</a>	
102-47	List of material topics	<a href="#">Material Issues</a>	
102-48	Restatements of information	No restatements	
102-49	Changes in reporting	No significant changes to material topics or boundaries	
102-50	Reporting period	2019	
102-51	Date of most recent report	June 2019 (reporting on 2018 data)	
102-52	Reporting cycle	Annual	
102-53	Contact point for questions regarding the report	See Northrop Grumman website, <a href="#">Contact Us</a>	
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.	
102-55	GRI content index	<a href="#">GRI Standards Content Index</a>	
102-56	External assurance	We externally assure our Emissions data. See our <a href="#">website</a> .	

# Management Approach

Disclosures		Report Location (or direct information)	SDG Reference
103-1,2,3	Management Approach: Financial Performance	Managing Financial Performance	SDG 8
103-1,2,3	Management Approach: Ethics and integrity	Ethics	SDG 12
103-1,2,3	Management Approach: Regulatory and legal compliance	Responsible Business Practices	SDG 12
103-1,2,3	Management Approach: Data privacy	Information Security	SDG 9
103-1,2,3	Management Approach: Supply chain	Global Supply Chain	SDG 8
103-1,2,3	Management Approach: Program performance	Products and Innovation	SDG 9
103-1,2,3	Management Approach: Product and service quality	Products and Innovation	SDG 9
103-1,2,3	Management Approach: Customer satisfaction	Products and Innovation	SDG 12
103-1,2,3	Management Approach: R&D and innovation	Products and Innovation—Research and Development	SDG 9
103-1,2,3	Management Approach: Environment	Environment	SDG 6, 7, 13, 14, 15
103-1,2,3	Management Approach: Talent management	People and Culture	SDG 8
103-1,2,3	Management Approach: Diversity and inclusion	People and Culture—Diversity and Inclusion	SDG 5, 10
103-1,2,3	Management Approach: Health and safety	People and Culture—Employee Health and Safety	SDG 3, 8
103-1,2,3	Management Approach: Corporate citizenship	Corporate Citizenship	SDG 1, 2, 3, 4, 5, 11, 17

# Topic-Specific Disclosures

Disclosures		Report Location (or direct information)	SDG Reference
<b>Economic</b>			
<b>Economic Performance</b>			
201-1	Direct economic value generated and distributed	Northrop Grumman at a Glance 2019; Annual Report	SDG 2, 8, 9
<b>Procurement Practices</b>			
204-1	Proportion of spending on local suppliers	Global Supply Chain—Supplier Diversity	SDG 12
<b>Anti-Corruption</b>			
205-1	Operations assessed for risks related to corruption	Responsible Business Practices—Anti-Corruption Compliance	SDG 16
205-2	Communication and training about anti-corruption policies and procedures	Responsible Business Practices—Anti-Corruption Compliance	SDG 16
<b>Environmental</b>			
<b>Energy</b>			
302-1	Energy consumption within the organization	Data Matrix, 2019 CDP Response	SDG 7, 12, 13
302-3	Energy intensity	Data Matrix, 2019 CDP Response	SDG 7, 12, 13
<b>Water</b>			
303-1	Interactions with water as a shared resource	Water Management Overview	
303-2	Management of water discharge-related impacts	Water Management Overview	
303-3	Water withdrawal	Water Conservation	SDG 6
<b>Emissions</b>			
305-1	Direct (Scope 1) GHG emissions	Greenhouse Gas Emissions, Data Matrix, 2019 CDP Response	SDG 12, 13
305-2	Energy indirect (Scope 2) GHG emissions	Greenhouse Gas Emissions, Data Matrix, 2019 CDP Response	SDG 12, 13
305-3	Other indirect (Scope 3) GHG emissions	2019 CDP Response	SDG 12, 13
305-4	GHG emissions intensity	Data Matrix, 2019 CDP Response	SDG 12, 13
305-5	Reduction of GHG emissions	Data Matrix, 2019 CDP Response	SDG 12, 13

Disclosures		Report Location (or direct information)	SDG Reference
<b>Effluents and Waste</b>			
306-2	Waste by type and disposal method	Solid Waste Diversion, Data Matrix	SDG 12
<b>Environmental Compliance</b>			
307-1	Non-compliance with environmental laws and regulations	Data Matrix	SDG 16
<b>Social</b>			
<b>Occupational Health and Safety</b>			
403-1	Occupational health and safety management system	Employee Health and Safety	
403-2	Hazard identification, risk assessment, and incident investigation	Employee Health and Safety	
403-3	Occupational health services	Employee Health and Safety	
403-4	Worker participation, consultation, and communication on occupational health and safety	Employee Health and Safety	
403-5	Worker training on occupational health and safety	Employee Health and Safety	
403-6	Promotion of worker health	Wellness	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Responsible Business Practices; Supplier Responsibility; Supplier Standards of Business Conduct	
403-9	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Employee Health and Safety; Data Matrix	SDG 8
<b>Training and Education</b>			
404-2	Programs for upgrading employee skills and transition assistance programs	Professional and Technical Development	SDG 8
404-3	Percentage of employees receiving regular performance and career development reviews	Building the Best Culture	SDG 8
<b>Diversity and Equal Opportunity</b>			
405-1	Diversity of governance bodies and employees	Board of Directors; Diversity and Inclusion; Data Matrix	SDG 5, 8
<b>Public Policy</b>			
415-1	Political Contributions	Northrop Grumman Political Contributions	SDG 16

# SASB Index

The table below identifies the Sustainability Accounting Standards Board (SASB) indicators for which we have publicly available information, relevant to the Aerospace & Defense Standard (Version 2018-10).

## Sustainability Metrics

Metric Code	Accounting Metric	Report Location
<b>Energy Management</b>		
RT-AE-130a.1	(1) Total energy consumed, GJ (2) Percentage grid electricity, % (3) Percentage renewable, %	ESG Performance Data Matrix
<b>Hazardous Waste Management</b>		
RT-AE-150a.1	Amount of hazardous waste generated, metric tons	ESG Performance Data Matrix
RT-AE-150a.2	Number and aggregate quantity of reportable spills, quantity recovered, kg	Management of Hazardous Materials; ESG Performance Data Matrix
<b>Data Security</b>		
RT-AE-230a.2	Description of approach to identifying and addressing data security risks in company operations and products	Information Security; Supply Chain Security
<b>Product Safety</b>		
RT-AE-250a.2	Number of counterfeit parts detected, percentage avoided	Supply Chain Security While this quantitative metric is not reported, we provide a qualitative description of our management approach to protecting the integrity of our supply chain.
RT-AE-250a.3	Number of Airworthiness Directives received; total units affected	Product Safety
<b>Fuel Economy &amp; Emissions in Use-Phase</b>		
RT-AE-410a.1	Revenue from alternative energy-related products, USD	Product Stewardship
RT-AE-410a.2	Description of approach and discussion of strategy to address fuel economy and GHG emissions of products	Product Stewardship
<b>Business Ethics</b>		
RT-AE-510a.3	Discussion of processes to manage business ethics risks throughout the value chain	Ethics; Responsible Business Practices; Supplier Responsibility

## Activity Metrics

Metric Code	Activity Metric	Quantitative Data
RT-AE-000.B	Number of Employees	90,000

# ESG Performance Data Matrix

Topic	2017	2018	2019*	GRI	SASB
<b>Company Data**</b>					
Sales (million USD)	26,004	30,095	33,841	102-7	
Employees (as of December 31 of each calendar year)	70,000	85,000	90,000	102-7	RT-AE-000.B
Floor space (thousand square feet)	35,379	52,283	53,780	102-7	
<b>Corporate Citizenship/Community</b>					
Direct community investment through philanthropy (million USD)†	30.8	28.4	31.1	201-1	
Company charitable grants—Education (Target 50%) (%)	56	54	55	201-1	
Company charitable grants—Military and Veterans (Target 25%) (%)	14	16	17	201-1	
Company charitable grants—Health and Human Services (Target 20%) (%)	12	10	8	201-1	
Company charitable grants—Environment (Target 5%) (%)	4	3	4	201-1	
Company in-kind contributions (million USD)	0.428	3.1	0.309	201-1	
London Benchmarking Group—Charitable donations (Company and Foundation) (%)		25	9.43	201-1	
London Benchmarking Group—Community Investments (Company and Foundation) (%)		75	90.57	201-1	
Employee giving (million USD)‡	4.1	3.7	3.4		
Employee volunteerism (hours)	63,453	61,161	63,187		
Paid volunteer hours	1,154	512.5	20.5		
Middle school students impacted by qualifying educator professional development programs in the year.	16,760	25,100	33,500		
Cumulative middle school students impacted by qualifying educator professional development programs since 2015 (Target 350,000 students by 2030)§	38,260	52,520	75,360		
<b>Ethics and Integrity</b>					
OpenLine inquiries	1,092	1,011	863	102-17	
OpenLine allegations	1,571	1,562	1,374	102-17	
<b>Engagement, Diversity and Inclusion*</b>					
Total population—male (%)	73.4	73.5	73.8	405-1	
Total population—female (%)	26.6	26.5	26.2	405-1	
Total population—People of Color (%)	34.5	35.5	37.3	405-1	
Total population—veterans (%)	20.0	19.6	19.6	405-1	
Total population—personnel with disabilities (%)	7.1	7.4	8.1	405-1	
Management population—male (%)	73.7	72.9	72.4	405-1	
Management population—female (%)	26.3	27.1	27.6	405-1	
Management population—People of Color (%)	25.2	26.3	28.0	405-1	
Senior executive population—female <sup>¶</sup> (%)	32.7	33.2	32.6	405-1	
Senior executive population—People of Color <sup>¶</sup> (%)	17.9	17.6	18.0	405-1	
Veteran new hires (%)	24.6	26.2	24.0		
Percent of persons with disabilities new hires (Target 7%) (%)	10.8	12.1	11.3		

Topic	2017	2018	2019*	GRI	SASB
<b>Environment*</b>					
Sites with ISO 140001 Certification	24	23	26	103	
Significant Fines and Penalties (shown in year paid) (\$)	0	15,000	30,500	307-1	
Tons of toxic Release Inventory	29.4	34.5	N/A	103	
<b>Hazardous Waste</b>					
Hazardous Waste Generation (tons)	1,460	1,838	1,608	306-2	RT-AE-150a.1
Hazardous Waste (number of reportable spills)	0	0	0	306-2	RT-AE-150a.2
<b>Nonhazardous Solid Waste</b>					
Reuse (tons)	62.84	145	101	306-2	
Recycling (tons)	13,468	12,326	12,405	306-2	
Composting (tons)	494.77	685	653	306-2	
Recovery (including energy recovery) (tons)	325.59	344	407	306-2	
Landfill (tons)	8,462	8,209	8,141	306-2	
Diversion rate	62.9	62.2	62.5	306-2	
<b>Energy#</b>					
Electricity consumption (megawatt hours)	1,105,882	1,090,559	1,081,449	302-1	RT-AE-130a.1
Grid electricity (%)	99	99	99		RT-AE-130a.1
Renewable energy use (megawatt hours)	22,111	22,017	22,097	302-1	
Renewable electricity (%)	2	2	2		RT-AE-130a.1
Energy intensity (MWH/per USD sales)	0.00004253	0.00004066	3.196E-05	302-3	
<b>Emissions#</b>					
Direct (Scope 1) greenhouse gas emissions (tonnes CO <sub>2</sub> e)	140,951	134,155	145,169	305-1	
Indirect (Scope 2) location-based greenhouse gas emissions (tonnes CO <sub>2</sub> e)	370,140	365,559	339,790	305-2	
Carbon offsets (tonnes CO <sub>2</sub> e)	11,000	11,000	11,000	305-5	
Total GHG Emissions (location-based, includes carbon offsets) (tonnes CO <sub>2</sub> e)	500,091	488,627	473,959	305-5	
Greenhouse gas emission intensity (Scope 1 and Scope 2—location-based) (tonnes CO <sub>2</sub> e/per USD sales)	0.00001923	0.00001822	0.000014055	305-4	
Reduction of greenhouse gas emissions (from 2010 base year) (%)	31.80	33.30	35.30	305-5	
<b>Water</b>					
Water withdrawal (potable)—Total (gallons)	873,297,454	872,661,286	844,995,571	303-3	
Water withdrawal source (potable)—Surface Water (gallons)	0	0	0	303-3	
Water withdrawal source (potable)—Groundwater (gallons)	149,801,818	163,790,149	162,069,026	303-3	
Water withdrawal source (potable)—Municipal Supply (gallons)	723,495,636	708,871,137	682,926,545	303-3	
Water withdrawal (potable and nonpotable)—Total (gallons)	880,121,939	891,835,914	863,730,618	303-3	
Water withdrawal source (nonpotable)—Municipal Reclaimed (gallons)	6,749,492	19,124,747	18,648,398	303-3	
Water withdrawal source (nonpotable)—Rainwater (gallons)	74,993	49,881	86,648	303-3	

Topic	2017	2018	2019*	GRI	SASB
<b>Health and Safety</b>					
Work-related fatalities	0	0	0	403-9	
Total Case Rate (per 100 workers)	0.91	0.85	0.9	403-9, 403-10	
Employee Lost Work Day Rate (per 100 workers)	10.6	10.34	7.46	403-9, 403-10	
Days Away Case Rate (per 100 workers)	0.26	0.25	0	403-9, 403-10	
<b>Governance</b>					
Members on Board of Directors	13	13	12	102-18	
Independent Directors on Board	12	11	11	102-18, 102-22	
Women/minority independent Directors	5 (38%)	6 (46%)	6 (50%)	102-22, 405-1	
<b>Products</b>					
Number of Airworthiness Directives received			1		RT-AE-250a.3
Number of Airworthiness Directives, units affected			100		RT-AE-250a.3
Revenue from alternative energy-related products (million USD)			100		RT-AE-410a.1
<b>Research and Development and Innovation</b>					
Company-Sponsored R&D Expenses (million USD)	639	764	953	201-1	
<b>Supply Chain</b>					
Percent of Small Business	39.7	37.3	38.4	102-9	
Percent of Small Disadvantaged Business (SDB)	5.8	4.3	3.7	102-9	
Percent of Women-Owned Small Business (WOSB)	9.7	7.4	7.5	102-9	
Percent of HUBZone Small Business	2.4	2.4	3.4	102-9	
Percent of Veteran-Owned Small Business (VOSB)	5.0	5.0	4.7	102-9	
Percent of Service-Disabled Veteran-Owned Small Business (SDVOSB)	2.8	2.4	2.0	102-9	
<b>Talent Management</b>					
Percent of U.S. employees covered by collective bargaining agreements	3.3	3.5	5.6	102-41	

\*Quantitative data for 2017 and 2018 represents Northrop Grumman prior to the acquisition of Orbital ATK. Quantitative data for 2019 includes Orbital ATK with the exception of Engagement, Diversity & Inclusion and Environment.

\*\*Starting in 2018, Company data (sales, number of employees and floor space) include Orbital ATK.

†Includes investments from Northrop Grumman and the Northrop Grumman Foundation; excludes donations from Northrop Grumman to the Northrop Grumman Foundation.

‡Includes giving through ECHO, matched gifts and employee fundraising.

§Calculation based on teacher maintaining active teaching status or in a school-based setting for three years post professional development experience.

¶Vice President and above.

#Refer to CDP Climate Change disclosure for more detailed information.

## EXTERNAL REVIEW PANEL – SUMMARY DOCUMENT

### Background

For the ninth consecutive year, Northrop Grumman convened an External Review Panel as part of the annual sustainability reporting process. The mission of the four-member group was to review the *2019 Northrop Grumman Sustainability Report* for clarity, transparency and year-on-year comparability, and to provide feedback for Northrop Grumman on the company's sustainability-related goals and activities.

Northrop Grumman contributors nominate stakeholder Panelists with significant professional background, knowledge and experience in key topics related to sustainability and corporate responsibility. Panelist terms are staggered to promote continuous improvements and fresh perspectives. For the 2019 External Review Panel, all Panelists were returning members: Caroline Berkowitz, James Haddow, Margret Hanley and Dan Johnson (see Panelist biographies at the end of this summary document). Panelists' observations reflect individual points of view and not those of their respective organizations.

Each Panel member received an executive review draft of the 2019 Sustainability Report (hereafter "Report") in advance of a series of online discussion meetings. During these meetings, Panelists held a series of conversations with Northrop Grumman senior managers and content providers. Subject matter experts from Northrop Grumman highlighted key aspects of their respective Report sections and Panelists asked clarifying questions and provided feedback. The Panel did not review underlying data or relevant process documents and therefore the review process does not represent independent verification of the performance data or other content within the Report.

In recognition of the respective time, expertise and contribution of each Panelists, Northrop Grumman offered to make a grant in each Panelist's name to a designated, qualified nonprofit organization.

### General Overview

Overall, the Report is a clear, articulate, detailed description of Northrop Grumman's sustainability activities. The use of links to additional information on the Northrop Grumman website allows readers to dive more deeply into a topic without impacting the balance or length of coverage.

In 2019, Northrop Grumman changed the name of this report from a Corporate Responsibility Report to a Sustainability Report. The Panelists appreciated the change and found it to more accurately reflect the broad scope of the reporting topics within Northrop Grumman.

The Panelists overall found the Report to be thematically consistent, easy to read and clear. However, the Panelists recommended defining sustainability outright and tightening the sections for consistency and one voice. Overall, the Panelists appreciated the graphics and photos but still find the Report to be text-heavy. Panelists noted the Oyster Monitoring case study as a positive example of how sustainability is integrated at Northrop Grumman and recommended further improving intersectionality of sections throughout the report. Panelists recommended including a more balanced review of both the successes and challenges that Northrop Grumman faced throughout the year. This is especially vital for the 2020 report, which will include the Company's COVID-19 response actions.

## **Materiality**

The Panelists recommend displaying Material Issues ranked in order of importance and including data for year-over-year performance for all areas. Northrop Grumman is in the process of updating its assessment of material issues. Panelists encouraged Northrop Grumman to include measurable goals and KPIs for the most important and relevant topics identified by the upcoming Materiality Assessment. The Panelists anticipated that stakeholders will be especially interested in climate change risks, employee wellness, social justice and COVID-19 as key topics to report on for the future.

## **Governance and Business Ethics**

The Panelists recommend including a description of how Northrop Grumman upholds their governance and compliance to ethics-related policies, including a discussion of the consequences of non-compliance. The Panelists would also recommend including additional insight into the outcome or process behind sustainability oversight by the Board of Directors. The ethics “Own It, Live It, Lead It” program demonstrates Northrop Grumman’s leadership in incorporating business ethics into the Company’s day-to-day activities. The Panel appreciates the inclusion of a human rights section, but wish to see it more explicitly tied to other areas of the business (for example, Supply Chain). The Panelists commended the transparency surrounding the Northrop Grumman OpenLine discussion and recommended including a metric related to it within the Performance Data Matrix at the end of the report. The Panel agreed with the emphasis placed on the global Data Privacy program, as this topic is quite important to employees, stakeholders, suppliers, trading partners and investors. This is a basic necessity for Northrop Grumman to be a trusted business partner. A Panelist recommended that the Report also include highlights on how Northrop Grumman partners with suppliers to mitigate cybersecurity risks and maintain global data privacy.

## **People and Culture**

The Panel notes Northrop Grumman’s admirable diversity and inclusion initiatives and their results, although they would like a section that discusses how these topics related to social justice in the workplace. Panelists note that the employee engagement survey was a particular strength and suggest sharing more results in future reports. Panelists also praised the apprenticeship program and recommend increasing its prominence in future reports. One Panelist suggested that Northrop Grumman incorporate reverse mentoring as it relates to inclusion, new ideas and a younger workforce. Panelists also appreciated the employee health and safety statistics and metrics. The four pillars of personal well-being within the Wellness section is a powerful and somewhat rare section among corporate filings and the Panelists commended Northrop Grumman’s inclusion of this section, especially given future implications from COVID-19. Overall, the Panelists recommend including more statistics, key metrics and comparisons to industry averages to set Northrop Grumman apart.

## **Products and Innovation**

Northrop Grumman’s approach of innovation, continuous improvement, systems thinking, agility and commitment to quality sets the Company apart from competitors and the Panelists appreciated the discussion of the Agile Transformation. The Panelists believe that highlighting this section was a great way to show stakeholders and investors how this culture adds to Northrop Grumman. The New Solar Energy R&D opportunity was an optimal case study to demonstrate the Company’s commitment to

helping customers meet sustainability objectives. The Panel recommends including metrics that demonstrate global product safety commitments and Northrop Grumman's best practices. These include metrics on customer satisfaction and R&D spending per sales and per employee.

### **Global Supply Chain**

The Panelists appreciated the supplier diversity statistics for US operations, the cybersecurity highlights and Northrop Grumman's commitment to holding suppliers accountable for their security, diversity and performance. The Panel recommends including human rights management practices within supply chain and sharing how Northrop Grumman addresses human rights globally and avoids association with human rights violations. One Panelist recommended including cobalt within Northrop Grumman's assessment of Responsible Sourcing and Conflict Minerals.

### **Environment**

The Panel commended the highlights demonstrating Northrop Grumman's commitment to long-term sustainability for the benefit of both stakeholders and investors. The Panelists would have liked to see a new goal for greenhouse gas (GHG) emissions in the 2019 report, as well as a discussion of how Scope 3 emissions may be addressed in the future. Due to the Company's California locations, drought and water security risks should be evaluated in future reports. As a best practice in evaluating these risks, the Panel recommends that Northrop Grumman conduct climate scenario analysis, in alignment with the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). The Panel also recommends highlighting the work achieved at sites doing environmental remediation as a way to demonstrate Northrop Grumman's commitment to environmental improvement.

### **Corporate Citizenship**

The Panelists commended the graphics throughout the section and noted that the numbers and methodologies for charitable giving were incredibly clear in the 2019 report. The Panel recommends including statistics on volunteer activities, the diversity of the charities the Company gives to and measurable outcomes from previous years' monetary donations. For the future, the Panel recommends that Northrop Grumman include quantitative information on racial diversity in the charitable organizations it supports. The Panelists praised the emphasis on STEM contributions.

**NORTHROP GRUMMAN CORPORATION  
EXTERNAL REVIEW PANEL BIOGRAPHIES**



CAROLYN BERKOWITZ

*President and CEO • Association of Corporate Citizenship Professionals*  
Carolyn Berkowitz is an accomplished Corporate Citizenship professional. Having led CSR efforts at Capital One, she re-envisioned Capital One's corporate philanthropy focus and led a team of 35 CSR professionals to develop and execute a \$450 million, ten-year strategy to prepare low- and moderate-income people for future success. Prior to Capital One, Carolyn worked with America's Promise, Points of Light Foundation and the American Association for Adult and Continuing Education. She has served as a Partner at Mission Partners, a consulting firm dedicated to guiding non-profits, foundations and socially responsible corporations in realizing their greatest social impact. She will continue to serve on its Equity Advisory Board, an initiative that she championed, through 2018.



JAMES HADDOW

*Director • Howard University School of Business*  
James Haddow is director of the Center for Excellence in Supply Chain Management at Howard University School of Business in Washington D.C. Along with teaching a range of supply chain management courses to both undergraduate and graduate students, he is also a faculty advisor to students during supply chain case competitions. Jim has 30 years of industry experience with specialties including strategic sourcing, supply chain assessment, project management, global security, expense management systems, performance measurement, strategic planning and financial analysis. He received a bachelor of science in business and management, as well as an MBA with a concentration in logistics, from the University of Maryland.



MARGRET HANLEY

*Co-founder and Principal • The Isosceles Group*  
Margret Hanley is an expert in the management of environmental issues affecting the development and use of real estate. She has more than 28 years of experience in the integration of environmental management programs and the sale, redevelopment and use of industrial properties. At the Isosceles Group, she leads due diligence evaluation and asset management services. She is a licensed site professional (LSP) in Massachusetts and has a B.S. in geology and geophysics from Boston College.



DANIEL JOHNSON

*Head of Engagement • Institute of Business Ethics*

As Head of Engagement, Dan is responsible for the IBE's relationships with supporter organizations and key contacts. His role is to promote shared learning and best practice in business ethics and to promote the IBE's belief that doing business ethically makes for better business. This is Dan's fourth different role with the IBE having previously held research, project management and products and services roles. In this role, Dan acts as Chair of several of the IBE's networking and practitioner working groups. Dan holds a Master's degree in Corporate Social Responsibility from the International Centre for Corporate Social Responsibility at the University of Nottingham.



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