Maryland Green Registry MEMBER

The Maryland Green Registry promotes and recognizes sustainable practices at organizations of all types and sizes. Members agree to share at least five environmental practices and one measurable result while striving to continually improve their environmental performance.

Northrop Grumman Corporation, Mission Systems Sector

7323 Aviation Blvd.
Linthicum, Maryland 21090
(410) 765-7466
www.northropgrumman.com
Global Security
Member since October 2014

Management and Leadership

☑ **Environmental Policy Statement**

It is the policy of Northrop Grumman to conduct operations in a manner that is environmentally responsible and is focused on protecting the health and safety of employees, contractors, visitors, and surrounding community. We shall comply with all applicable environmental, health and safety (EHS) regulations and maintain internal programs and practices that create a safe and healthful workplace, reduce adverse environmental impacts from our operations, and demonstrate a commitment to environmental sustainability.

☑ **Environmental Team**

Northrop Grumman Mission Systems (Northrop Grumman) established an Environmental Sustainability Leadership Team in 2008 as a result of the implementation of the Environmental Sustainability Program. The Environmental Sustainability Leadership Team is comprised of a variety of individuals from different business areas within Northrop Grumman. Although the Environmental Sustainability Program is managed within the Environmental, Health, Safety & Fire Protection organization, individuals from business management, facilities, manufacturing, maintenance, and real estate are all represented. The Environmental Sustainability Leadership Team meets on a monthly basis to drive strategic initiatives and assess progress toward program goals.

In addition to the Environmental Sustainability Leadership Team, an employee resource group (ERG) known as greeNG exists for those who share a common interest in safeguarding the environment. The greeNG ERG is a grassroots group that was formed to help reduce our environmental impacts, both as individuals and as a company. The 890-member team in Maryland alone encourages employees to get involved with employee education seminars, community events, and the overall "greening" of Northrop Grumman.

☑ **Annual Environmental Goals**

Northrop Grumman is committed to becoming a leader in environmental sustainability by setting annual performance objectives which drive progress toward long term performance goals. Key Performance Indicators (KPIs) are tracked monthly, quarterly and annually focused on the benefits of energy and greenhouse gas reduction initiatives, water conservation projects and solid waste diversion and reduction opportunities.

☑ **Environmental Restoration or Community Environmental Projects**

In 2019, Northrop Grumman began Phase 1 of work with the Chesapeake Bay Foundation (CBF) on a project to utilize remote sensing to monitor and collect data on oyster reefs in the Chesapeake Bay. More than 40 employees submitted 10 unique proposals, and five teams were selected as finalists to further develop and demonstrate their sensor technologies. Phase 2 in 2020 combines those five teams into two with a focus on further developing and integrating the sensors onto vehicle platforms and demonstrating remote operation capability. The teams will work in parallel to field their concepts during Phase 2 and ultimately deliver an operational capability to the CBF.

Through the use of the following technologies and off-the-shelf hardware, the teams aim to develop capable solutions that meet the parameters of the CBF's annual operating budget:

- *Acoustic monitoring*
- *SONAR*
- *LIDAR*
- *Surface and underwater remotely-operated vehicles*
- *Image processing*
- *Artificial Intelligence and Machine Learning*

Northrop Grumman will create a single, remote-sensing technology system to monitor oyster populations in the Chesapeake Bay. The low-cost system, and training on its operation, will be provided to the CBF to monitor oyster populations and help the foundation reach its goal of adding 10 billion oysters in the Bay by 2025.

Waste

☑ **Solid Waste Reduction and Reuse**

Northrop Grumman is committed to minimizing its environmental impact on local landfills. The company is continuously identifying solid waste management solutions to optimize processes, minimize material use, and reduce costs. The Environmental Sustainability Leadership team and greeNG ERG reinforce the importance of reduce, reuse and recycle through different solid waste reduction initiatives. Northrop Grumman isolates wood/metal/trash/recycle waste streams to ensure efficiency and capture more waste for recycle/diversion.

At year-end 2020, Northrop Grumman Mission Systems Maryland sites diverted 2,196 tons of waste from landfill, to achieve a 76.2% solid waste diversion rate.

Northrop Grumman maintains food waste composting programs at two of its largest Maryland sites. All acceptable food waste from kitchen preparation is captured in addition to some employee food scraps, with the goal of opening the program up for further employee contribution at additional sites.

In March 2018, the greeNG ERG launched the Surplus Office Supplies reuse program. The program promotes the reuse of office supplies within Northrop Grumman. This self-sustaining tool extends the lifetime of office supplies, ultimately reducing waste and cutting down costs. In some instances, excess office supplies are donated to local partner schools.

☑ **Recycling**

In addition to solid waste reduction initiatives, Northrop Grumman puts recycling at the forefront of the company's solid waste diversion efforts. Maryland sites make it a priority to increase recycling rates year-after-year.

Northrop Grumman maintains a recycling program at every Maryland site. The following materials are examples of commodities recycled under this program in 2020:

- *Single-stream recyclables (677.33 tons)*
- *Batteries (rechargeable (3.18 tons) and non-rechargeable (4.03 tons))*
- *Toner cartridges (0.34 tons)*

On a more industrial scale, Maryland sites recycled in 2020:

- *Construction and demolition (C&D) debris (including cardboard, carpet, ceiling tiles, concrete, metals, wood, sheet rock, etc.) (202.79 tons)*

- *Scrap electronics (63.81 tons)*

Over a period of several years, we have been co-locating trash and recycling compactors as a best management practice. In late 2017, Northrop Grumman's BWI location installed a 35 cubic yard recycling compactor. To keep up with increasing recycling rates, that project was followed with the installation of a second 35 cubic yard recycling compactor in early 2018. In 2019, we installed a trash compactor at our Sykesville facility to reduce pickup frequency and to reduce stormwater exposure resulting from windblown debris. Subsequently in 2020 we installed a trash compactor at our BWI facility co-located with a recycling compactor to reduce trash contamination in the recycling stream. At our new leased facilities, split compactors were installed to reduce recycle stream contamination as well. These compactors make recycling more easily accessible to the site's janitorial staff. These recycling compactors divert approximately 396.41 tons of waste from local landfills each year.

In 2018, Northrop Grumman implemented a wood diversion program at two major sites across Maryland. Wooden pallets and crates that used to be considered waste are now diverted to Baltimore Recycling Center to be re-processed into mulch and other consumer products. In 2020, the program diverted 302.19 tons of wooden materials from local landfills.

☑ **Composting**

In 2015, Northrop Grumman began its first food waste composting program at the BWI site and in 2017 expanded to the Advanced Technology Laboratories (ATL) site. At these two sites, the back-of-the-house kitchen preparation waste is composted through Veterans Compost. Prior to implementation, it was expected that the composting program would divert approximately 47,000 lbs. from landfill per year. In 2020, these two sites composted over 66,860 lbs. of kitchen scraps. The success of the composting program has been acknowledged and opportunities to expand the program to employee gathering areas as well as to other sites are being evaluated.

☑ **Hazardous Waste/Toxic Use Reduction**

Northrop Grumman policies across the enterprise emphasize minimizing hazardous generation through effective pollution prevention programs. This starts with the new material review process which looks at limiting the use of ozone depleting substances, volatile organic compounds, toxic air pollutants, and other regulated chemicals. The company seeks to identify opportunities to replace or substitute chemicals with less hazardous or toxic constituents. In addition, our pollution prevention programs evaluate and implement opportunities to reduce hazardous waste generation.

Energy

☑ **Energy Efficiency**

Throughout its Maryland sites, Northrop Grumman is committed to energy conservation and energy efficiency. The company has improved building efficiency, information technology infrastructure, and manufacturing processes to reduce its electricity and natural gas usage.

Since 2017, Northrop Grumman has made significant efforts to retrofit the lighting systems across 9 different Maryland sites. Lighting systems in outdoor areas, including parking lots and walking paths, and indoor facilities, including interior office and warehouse space, were replaced with energy efficient LED lighting systems. For all newly renovated space, Northrop Grumman converts existing lighting to LED equipped with motion sensing capabilities. This effort not only drives energy efficiency but supports ongoing facility modernization efforts.

Northrop Grumman is continually integrating innovative energy solutions into its everyday operations. At the BWI facility, Northrop Grumman took the need to update an entry way for ADA compliance and incorporated energy efficiency in design. This redesigned entrance featured a vestibule that reduced the outside air exchange, adding efficiency to the HVAC in the area. It is estimated that this project will reduce 66 metric tons of carbon dioxide equivalence ($MTCO_2e$).

Transportation

☑ **Employee Commute**

Northrop Grumman offers a number of opportunities to reduce Scope 3 greenhouse gas emissions. The company offers a variety of well-established "Alternative Work Arrangements." Each agreement is designed to help employees maintain the flexibility of work and life needs, but also contributes to reducing the sector's carbon footprint. Northrop Grumman offers a "9/80 Program", which allows employees to work 80 hours in nine days rather than ten. A "Compressed Work-Week" is also available and allows employees to work four 10-hour days. Often times, an employee can work with his or her manager to implement a telecommuting or hoteling schedule. Telecommuting or hoteling allows an employee to work at a location closer to their home without requiring the employee to be at his or her designated work location. While many "Alternative Work Arrangements" are geared toward enhancing employee work and life needs, there is also an environmental benefit associated with the arrangement. Approximately 70 percent of Northrop Grumman employees take advantage of "Alternative Work Arrangements," ultimately reducing the company's Scope 3 carbon footprint. In addition, due to COVID-19, Northrop Grumman took additional steps to

transition individuals who have the ability to do their work from home to a remote workforce.

In 2016, Northrop Grumman implemented a sector-wide electric vehicle (EV) charging program. The company partnered with ChargePoint, Inc. to install electric vehicle charging stations on Northrop Grumman sites, giving employees with electric vehicles the option to charge their vehicle at work. This program supports the growing number of employees who use low/no emissions vehicles to commute. As of March 2021, Northrop Grumman offers 12 dual-port charging stations at 8 different Maryland sites. The stations are available exclusively to Northrop Grumman personnel and since its installation, the program has avoided 233.64 $MTCO_2e$ of greenhouse gas emissions.

☑ **Efficient Business Travel**

Northrop Grumman is a supporter of efficient business travel. One example is through the ability to teleconference. Many employees utilize this technology on a daily basis to meet with coworkers across not only Maryland, but the nation. Skype for Business allows all employees to share material and teleconference from their computer with their coworkers, regardless of their location. This technology both improves business efficiency and is beneficial to the environment. Business travel was halted without executive management approval due to COVID-19. This has normalized tasks over video conferencing that will likely have a carryover effect in a post-COVID environment.

☑ **Water Conservation**

Northrop Grumman recognizes the importance of water conservation and continuously looks for solutions to reduce and reuse water usage. The company has implemented a number of different best management practices (BMPs) aimed at reducing water. These BMPs include the installation of low-flow fixtures and closed-loop systems and the establishment of practices to conserve water such as repairing leaks, creating a leakage hotline, reducing irrigation, and preventing the use of water for outdoor surface cleaning.

In 2020 Northrop Grumman completed the construction of a wastewater reuse system at its Advanced Technology Laboratory facility in Linthicum Maryland. Culminating nearly five years of planning, testing, demolition, construction and implementation, ATL now operates at a roughly 50 percent reuse rate, meaning half of each gallon used is being treated and flowed back into the ATL's water system. On top of that, the water is now cleaner than any supply water the facility has worked with since the 1980s, giving the laboratories even greater ability to maintain the precise quality needed to work on certain products. The plant saved 16.5 million gallons of water in nearly six months, on-pace to meet or exceed the 33 million gallon annual water savings

initially projected. In recognition of this achievement, Northrop Grumman won the California Industrial Environmental Association's 2020 Environmental Excellence Award.

In addition to the wastewater reuse system savings, Northrop Grumman is taking steps in 2020 into 2021 to eliminate the use of city water to cool pumps, instead utilizing reuse water. This modification will save an additional 2.1 million gallons annually.

☑ **Stormwater Management and Site Design**

Northrop Grumman is committed to finding solutions to minimize the exposure of industrial activities to stormwater and to reduce contaminant runoff. Examples of these solutions include re-routing industrial discharges to the sanitary sewer system, installing oil booms for parking lot runoff, and constructing stormwater management BMPs to reduce sediment, nutrient, and contaminant entry into the local waterways.

As part of the Chesapeake Bay Restoration requirements, Northrop Grumman's BWI site parking lot was selected as an area to implement stormwater best management practices. In 2014, the project took off with site design planning, permitting, and procurement of seven low impact development (LID) projects. In 2016, 5.78 acres of impervious cover was restored. The LID projects to achieve this included the construction of permeable pavement providing 5.28 acres of restoration, a grassed bio swale providing 0.37 acres of restoration, and a landscaped area providing 0.13 acres of restoration.

Northrop Grumman is also investigating other opportunities to retain and infiltrate stormwater so that we further reduce the impact of our operations on receiving water bodies. New BMPs are being installed at Northrop Grumman's ATL facility during expansion of the building, to treat new and existing impervious space.

☑ **LEED Certification**

Northrop Grumman Mission Systems was awarded LEED Silver Core and Shell for the West Quest C office building. The office, located at 7323 Aviation Blvd. in Linthicum, Maryland, was the first LEED Certified building in the Mission Systems sector.

Environmental Certification Programs, Awards, and Other Activities

☑ ***Environmental Awards***

In 2015, Northrop Grumman Electronic Systems (now known as Northrop Grumman Mission Systems), was selected as the winner for The Maryland Green Registry Leadership Award for the company's commitment to sustainable practices and the protection of Maryland's natural resources and environment.

In 2020, Northrop Grumman ATL site was selected as the winner of the California Industrial Environmental Association's 2020 Environmental Excellence Award for its wastewater reuse system.

Employee Training and Communications

Northrop Grumman conducts periodic training for employees to educate them on environmental requirements and their role in supporting environmental sustainability. In addition, in 2017 the company launched a voluntary greeNG training module to further educate and engage employees on environmental stewardship.

Profile Updated April 2021