2024 ESI ANNUAL REPORT

NC Environmental Stewardship Initiative

Published March 2026

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Executive Summary

The N.C. Department of Environmental Quality's (DEQ) Environmental Stewardship Initiative (ESI) is a voluntary program that assists and encourages facilities to use pollution prevention, sustainable practices, and innovation to meet and go beyond regulatory requirements. The ESI program takes a unique approach to supplementing regulations by supporting a robust, systematic, and holistic approach to environmental management. Each organization within ESI has committed to report annually on its progress toward its environmental goals. This program annual report summarizes the self-reported data collected from ESI members for 2024.

The three-tiered membership structure of Partners, Rising Stewards, and Stewards allows participation from a variety of organizations. The Partner level serves as the program's entry point where organizations have environmental goals and can receive assistance developing an Environmental Management System (EMS) based on ISO 14001. Higher levels require organizations to be models of stewardship, set aggressive environmental goals, have an EMS, and to mentor other program participants. In 2024, three new members joined and three advanced to higher levels. Mecklenburg County

2024 Members

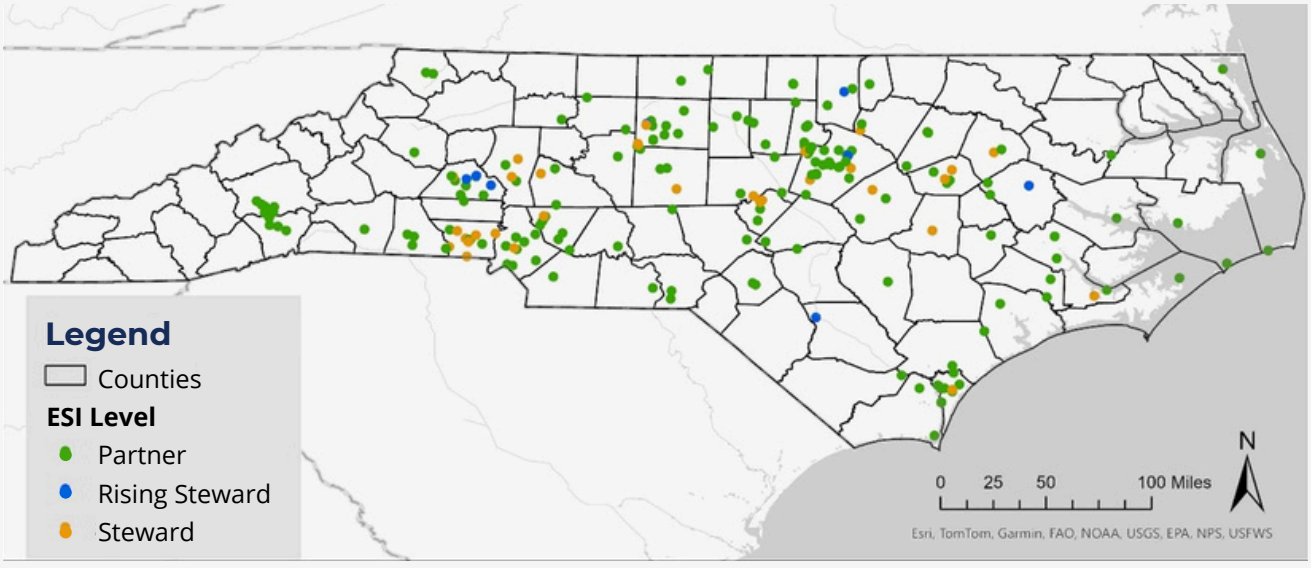

Figure 1. ESI Member Sites in 2024

Solid Waste became a Steward, while Eaton Aeroquip, LLC in Middlesex and Filtrona Filters, Inc. in Greensboro became Rising Stewards. The Membership section of this report provides more information on eligibility and the three membership levels. ESI ended 2024 with 103 members across 206 sites, as shown in Figure 1.

The ESI program assists members in adopting voluntary, high-impact environmental strategies through partnerships that foster both sustainability and economic progress. This approach combines recognition with technical training, member-to-member mentoring, and networking platforms.

This year ESI members established 243 goals addressing comprehensive multi-media environmental impacts, encompassing both regulated and non-regulated areas. Eighty-nine members † reported progress toward their goals summarized in Table 1. Pollution prevention and cost savings reported by members highlight significant results and improvements that not only impact the environment, but may also impact the economy in North Carolina. This report highlights member achievements in reducing environmental impacts, often through operational changes, and demonstrates the amplified effect of these collective efforts.

Table 1. 2024 ESI Members Reported Results

Reductions	Value	Units
Material Consumption	664	Tons
Air Emissions	42,882	Tons
Hazardous Waste	2,586	Tons
Wastewater Pollutants	12,395	Tons
Landfilled Waste	21,203	Tons
Greenhouse Gas Emissions*	1,002,867	Metric Tons CO_2e
Energy Use	8,457,784	MMBtu
Water Use	2,342,617,062	Gallons
Wastewater Volume	1,976,569,701	Gallons

Recovered Materials	Value	Units
Biomass Recovery**	134,012	Tons
Recycled	208,989	Tons

$6,680,127

Total Cost Savings

*Indirect not reported in energy reductions
**Category created for compost/mulch related goals

†Partners may apply to the program as a multi-site member, which allows that organization to submit a single annual report for a group of sites. New members must complete one year of program membership before their results are included in the aggregated program data. Additionally, members can request to be put on-hold for one year to forego annual reporting. Therefore, the total number of members reporting may be less than the total number of program members.

Program Achievements

Membership Growth

ESI membership has grown eight-fold since its inception in 2002, steadily increasing from 27 member sites to 103 members across 206 member sites in 2024 (Figure 2).

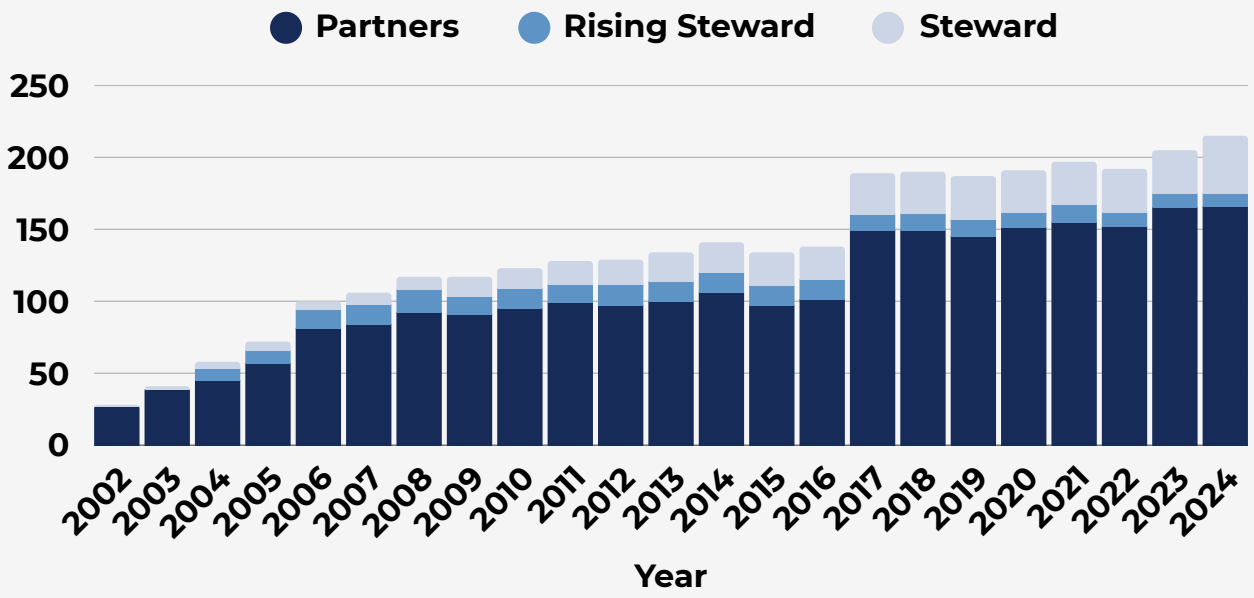

Figure 2. ESI Membership Growth 2002-2024

Mecklenburg County Solid Waste became an Environmental Steward and Eaton Aeroquip, LLC in Middlesex and Filtrona Filters, Inc in Greensboro became Rising Stewards. All joining members are accepted as Partners and may move up to a higher level after rigorous review and recommendation by the ESI Advisory Board. More information on this process can be found in the Advisory Board Section.

Throughout 2024, six members left the program, two due to facility closures and the remaining due to internal restructuring and resource constraints. Three new partner members joined (Table 2) while three members advanced to higher levels

Table 2. 2024 New ESI Members

Facility Name	ESI Level	City	County
Filtrona Filters, Inc.	Rising Steward	Greensboro	Guilford
Pratt & Whitney	Partner	Asheville	Buncombe
Sierra Nevada Brewing Company	Partner	Mills River	Henderson

Member Spotlight

Mecklenburg County Solid Waste Operations (MCSWO) joined ESI as a Partner in 2009, advanced to Rising Steward in 2017 before achieving Steward membership in December 2024. MCSWO is responsible for managing solid waste processing, overseeing full-service drop off centers, and conducting residential, business and school community outreach efforts that focus on sustainability and waste reduction. MCSWO has expanded the types of materials residents can recycle to include textiles, shredded paper, hard and soft back books, clean wood waste, medical devices, bicycles, rigid foam, and plastic bags/ wrap. They recently kicked off a food scrap collection program and work with Goodwill to repurpose useable computers that they collect. In addition, MCSWO has implemented the use of electric vehicles, replaces aging diesel engines with more efficient ones to reduce air emissions, and is designing new facilities to support solar panels.

Figure 3. Mecklenburg County Solid Waste Member Spotlight

Program participation includes members of all sizes; the smallest having one employee and the largest employing more than 20,300 people (Figure 4). Forty-three member sites were registered to the ISO 14001:2015 international standard for environmental management systems by third-party auditors, and six have been deemed functionally equivalent to that same standard by ESI staff.

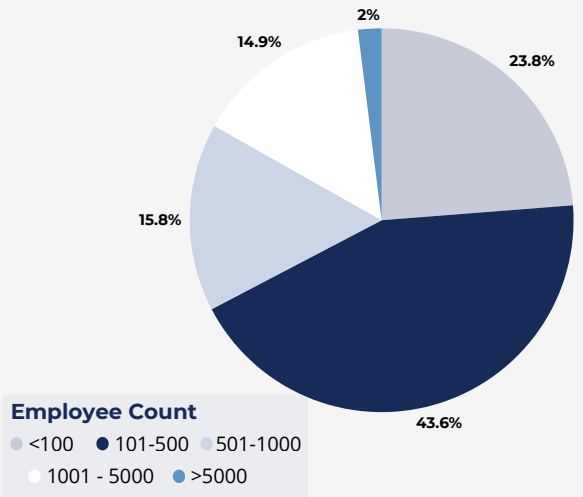

Figure 4. Number of Employees per ESI Member in 2023

Member Results

ESI members are required to report on performance toward environmental goals and reductions in environmental impacts on an annual basis. While reductions are only counted in the first year of their occurrence, most are permanent reductions. There are 206 sites in the program, 14 are multi-site members that only have to submit one report for all sites. New members are not required to submit annual reports until after their first full year of membership. Additionally, four members requested to be placed on hold, which allows for one year of non-reporting while remaining active in the program. As a result, 89 members reported progress toward their goals in 2024. All data is self-reported by member facilities and not verified by DEQ.

Member Goals

ESI members reported an impressive 243 goals in 2024. As shown in Figure 5, waste reduction goals have emerged as this year's top priority for ESI members, surpassing energy-related goals for the first time since 2008. This shift reflects a growing momentum around solid waste minimization and the recovery of materials back into economic use across the state. Within these categories, members highlighted ambitious projects such as zero waste to landfill (ZWTL) initiatives, expanded composting and recycling programs, and material use reduction. Members also pursued a wide range of additional environmental goals, including improvements in wastewater and stormwater management, EMS development, employee education, wildlife habitat enhancement, and community engagement. Together, these efforts showcase a dynamic and increasingly innovative commitment to environmental stewardship across the ESI membership.

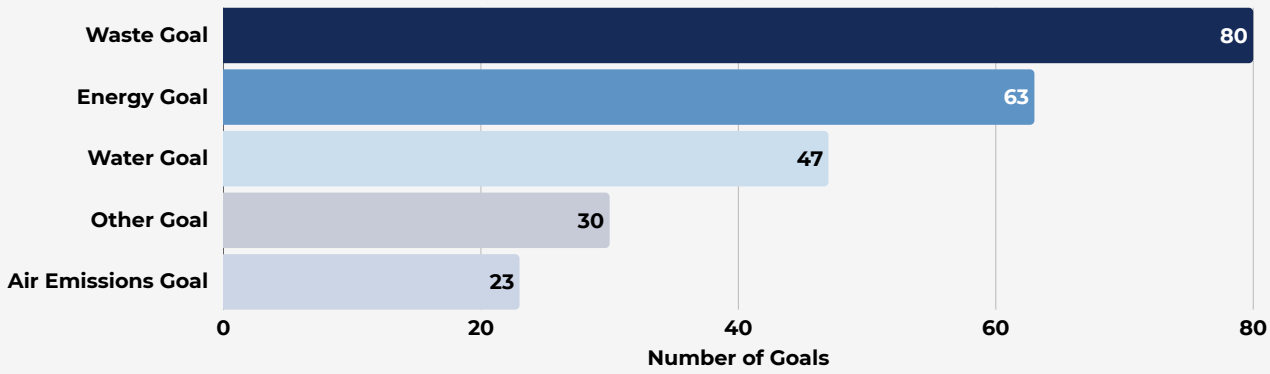

Figure 5. 2024 ESI Member Goals Summary

Cost Savings

More than $6.6 million in cost savings were reported by ESI members from their 2024 environmental projects. ESI does not require cost savings to be reported for each goal and as a result, the amount reported is presumed to be a conservative estimate for overall cost savings by members. Figure 6 shows the breakdown by goal type from the members who reported.

Table 3. Total Cost Savings from Member Reported Environmental Projects

Year	Total Cost Savings
2005	$12,721,772
2006	$10,393,930
2007	$2,961,039
2008	$4,523,391
2009	$3,070,439
2010	$3,270,504
2011	$13,292,968
2012	$5,262,972
2013	$836,537
2014	$2,188,478
2015	$2,626,307
2016	$8,221,015
2017	$8,178,746
2018	$6,717,739
2019	$11,331,947
2020	$7,193,816
2021	$2,500,986
2022	$5,396,288
2023	$7,678,869
2024	$6,680,127
Total	**$125,047,870**

Member Spotlight

Figure 6. Pfizer Cost Savings Project

Pfizer Stanford, a Steward since 2019, streamlined waste management operations by transitioning to bulk shipments and an alternative vendor to eliminate single use plastics. This project generated an estimated $162,000 in cost savings and 97,000 pounds of waste avoidance.

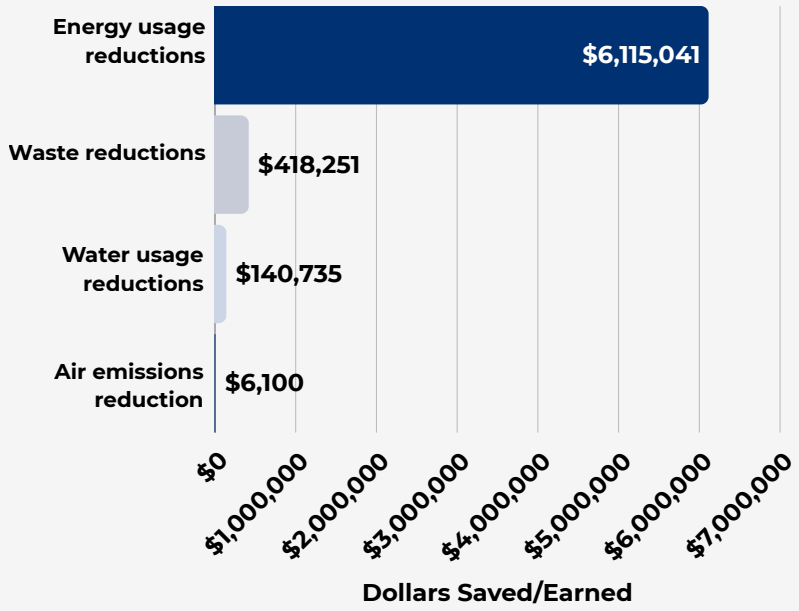

Figure 7. Cost Savings by Media Type

Air Quality Data

Members implemented 23 goals related to air pollutant emissions that resulted in reductions of 42,882 tons of various air pollutants. This is significantly higher than last year, with members implementing projects that increase the efficiency of equipment, reducing or replacing paint used in operations, and improved compacting and packing to reduce the total number of truck trips on the roads.

Table 4. ESI Member 2024 Air Emission Reductions

Air Emissions Reductions	Value	Units
CO Reduction	50.3	Tons
CO_2 Reduction (GHG)	42,015.3	Tons
NOx Reduction	182.6	Tons
PM10 Reduction	7.6	Tons
SOx Reduction	31.5	Tons
Total HAPs Reduction	39.7	Tons
VOCs Reduction	170.8	Tons

Materials Management Data

In 2024, members reported 80 goals related to solid waste reduction, the category with most goals reported. Members reported a total reduction of 21,203 tons of waste going to landfill and 208,989 tons of material being recycled. Process improvements, including material consumption reductions, waste-to-energy, beneficial reuse, packaging changes, and finding new markets within a circular economy were reported for many of the solid waste reductions. Increased material recycling and expanded educational campaigns were reported as efforts to reduce solid waste generation and disposal. Additionally, aggressive recycling efforts and ZWTL targets were reported. Organic material recovery significantly increased this year due to several facilities increasing composting and land application amounts. Some facilities also set goals to reduce waste-to-energy processing as part of efforts to reduce waste generation.

Eighteen goals reported on hazardous waste reductions totaling 2,586 tons of hazardous waste reduced. Reclassification of some materials as non-hazardous by finding recycling options, efficiency improvements, material substitutions, and increased analysis of waste streams/disposal information all contributed to these reductions.

Twelve of the 80 goals reported were related to increased recycling efforts. Some of these efforts included training new staff members on recycling protocols, finding new vendors to take previously unrecycled materials, and improving equipment to recover more recyclables from processes.

Table 5. ESI Member Waste Reductions and Beneficial Reuse Totals 2004-2024

Year	Hazardous Waste Reductions (tons)	Landfilled Waste Reductions (tons)	Material Consumption Reductions (tons)	Total Biomass Recovered* (tons)	Total Recycled Volume (tons)
2004	12	997	509		10,015
2005	119	82,453	37,728		8,047
2006	405	59,441	973		12,594
2007	13	205,169	60		23,986
2008	200	737	2,136	2,783	4,777
2009	10	4,072	639	258,635	34,233
2010	6	10,245	1,792	333,375	36,667
2011	15	3,755	115	246,437	29,901
2012	4	3,071	666	2,959	33,837
2013	37	1,605	24	3,122	46,350
2014	1,538	11,505	23,073	17	32,158
2015	284	42,737	589	54,360	42,150
2016	314	2,535	376	93,888	159,194
2017	105	350,911	356	95,625	97,774
2018	30	3,430,522	515	89,607	329,229
2019	158	988	1,749	77,939	189,404
2020	723	32,3268	600	86,620	341,881
2021	710	64,015	374	71,665	113,477
2022	191	3,577	185,661	61,128	176,125
2023	2,050	63,906	54	22,171	239,323
2024	2,586	21,203	664	134,012	208,989
Total	**9,512**	**4,395,714**	**258,652**	**1,734,343**	**2,170,111**

*Category created for compost/mulch related goals

Energy Data

Sixty-three goals related to reducing energy consumption (natural gas, fuel oil and electricity) and reducing fuel use in vehicle fleets (gasoline and diesel) were reported, which is an increase of 20 energy goals from the previous year. In total, members reduced their energy usage by more than 8 million MMBtus (million British Thermal Units, or BTUs). Upgrades to higher efficiency technologies, such as replacing HVAC units and product line technologies, as well as significant reductions in production contributed to these results. The largest reported GHG reduction this year was due to one facility decreasing their overall production. LED lighting projects, and compressed air projects aided these reductions. Replacement of older equipment with more efficient devices and software programming or upgrades was credited with improving efficiency which either reduced the overall energy needed or kept demand steady during production increases. Execution of energy-use audits and increased monitoring as well as replacement of gas- or diesel-fueled vehicles with hybrid and fully electric vehicles were also reported to reduce associated CO2e emissions.

Table 6. ESI Member Energy and Air Emissions Reductions 2004-2024

Year	Energy Reductions (MMBtu)	Greenhouse Gas Emissions Reductions* (Metric Tons CO2e)	Air Emissions Reductions** (tons)
2004	11,737	Not Reported	297
2005	48,451	Not Reported	208
2006	123,821	Not Reported	232
2007	28,527,501	9,370	243
2008	9,196,666	5,466	29
2009	1,549,175	64,224	155
2010	598,591	1,444	46
2011	1,626,534	18,677	4
2012	547,878	1,277	13
2013	8,643,348	2,041	73
2014	79,175	11,136	112
2015	22,289,629	818	76
2016	295,075	3,562	2,973
2017	1,093,033	2,546	1,694
2018	3,065,511	30,616	2,595
2019	847,583	24,190	247
2020	8,203,092	22,321	498
2021	666,966	10,377	663
2022	1,264,662	73,802	142
2023	1,068,305	842,766	750
2024	8,457,784	1,002,867	42,882
Total	**98,204,517**	**2,127,499**	**53,934**

* Indirect not reported in energy reductions

** Not including Greenhouse Gas (GHG) emission reductions

ESI continues the Energy Toolkit Project (Figure 8), which allows members free access to energy monitoring equipment and was used by three members to identify air leaks to improve equipment maintenance in 2024. The toolkit includes an ultrasonic leak detector, an infrared camera, an AC current probe, a LED light meter, power data loggers and electricity usage monitors. Members interested in checking out the Energy Toolkit can contact ESI for additional information.

Figure 8. ESI Energy Toolkit

Number of North Carolina homes that could be powered for a year by ESI member energy savings in 2024.

Greenhouse Gas Reductions

ESI member energy reductions can be converted to GHG reductions to show a direct positive effect on the environment from their efforts to reduce their impacts. Members noted 14 goals specific to GHG emission reductions not associated with energy reductions and a decrease of 42,015 metric tons of CO2 and CO2e emissions. Total GHG reductions that members reported including from energy reductions was more than one million metric tons.

In 2024 ESI members reduced greenhouse gas emissions equivalent to more than

234,713

passenger vehicles driven for one year!

Water Data

Forty-seven goals related to water usage were reported with reductions of 2,342,617,062 gallons of water as noted in Table 7. This reduction is over 2.1 billion gallons more than previously reported in 2023. This impressive increase in water savings is mostly attributed to one member reporting 2 billion gallons of water use reduction through process line changes and another facility reporting water use reductions of several million gallons. Additionally, reductions were credited to improved leak detection, maintenance, equipment replacements, implementation of closed-loop systems, and other water reuse projects.

ESI members saved enough water in 2024 to fill almost

106,482

average-sized swimming pools!

Wastewater Data

Over 1.9 billion gallons of wastewater volume was reduced in 2024 (Table 7). The highest wastewater volume reductions reported were from the same two facilities who drastically reduced overall water usage. Additional facilities reported reductions through process optimization and water recycling. In 2024, members reported 12,395 tons of wastewater pollutant reductions. Projects to support these efforts included upgrading wastewater treatment equipment, staff trainings, process improvements, water recycling, and installing and commissioning of a pre-treatment system at one facility. Nine facilities reported goals related to stormwater management improvement projects. The projects associated with these goals included updating stormwater management plans, constructing new retention ponds, improved mapping around stormwater runoff flows, and acquiring no exposure permits.

Figure 9. Member Facility Two Rivers Utilities

Table 7. ESI Member Water and Wastewater Reductions 2004-2024

Year	Water Use Reductions (Gallons)	Wastewater Volume Reductions (Gallons)	Wastewater Pollutants Reductions (tons)
2004	369,529,216		379
2005	54,201,286	85,566,162	527
2006	591,356,273	106,092,200	400
2007	83,929,264	881,690	0
2008	183,587,248	202,701	105
2009	1,444,617,822	18,304,480	138
2010	41,895,325	20,449,660	4
2011	347,399,898	5,904,175	7,210
2012	455,656,908	10,862,255	230
2013	547,725,143	16,252	3,616
2014	2,105,928,788	7,381,860	11,139
2015	2,439,754,313	1,690,643	3,530
2016	1,239,254,545	230,263,919	806
2017	1,038,806,743	490,620,971	6,783
2018	2,091,856,088	1,840,602,313	109,134
2019	1,052,916,723	3,632,451,983	399,871
2020	1,290,141,538	1,032,748,100	6,777
2021	512,073,937	747,744,377	74,803
2022	151,764,223	98,641,150	8,965
2023	235,238,400	527,240,672	25,300
2024	2,342,617,062	1,976,569,701	12,395
Total	**18,620,250,745**	**10,834,235,264**	**672,113**

Other Goals

Members reported five goals related to environmental compliance and four goals related to EMS development or improvement. EMS goals included implementing a new EMS, increased staff training, and maintaining ISO 14001 certification. Members also reported on goals related to wildlife and habitat improvements, including native tree plantings (three goals), increased community involvement and education campaigns (four goals), and other environmentally related goals specific to individual sites.

Community Involvement

In addition to reporting on environmental goals, ESI members also submit information on their involvement with their surrounding community. ESI Stewards are the only membership level required to engage with their local communities on their environmental performance. However, many members have broader community involvement programs. Other members are encouraged to connect with their local communities and may choose to report on their activities as well. For 2024, 67 events and activities were reported by 59 members (27 Stewards, 8 Rising Stewards, 24 Partners). The ESI program encourages community involvement activities that are meaningful and environmentally focused. Some examples of community outreach reported include:

- Organizing stream or highway litter clean ups and habitat restoration;
- Coordinating with local first responders for improved emergency preparedness;
- Hiring college students for internship projects;
- Hosting tours for students and community organizations;
- Providing educational materials, often about recycling, geared towards facility workers and their families through Earth Day events.

These events and efforts described by members have been categorized into 9 groups. Figure 10 shows a summary of the number of each type of activity completed by members.

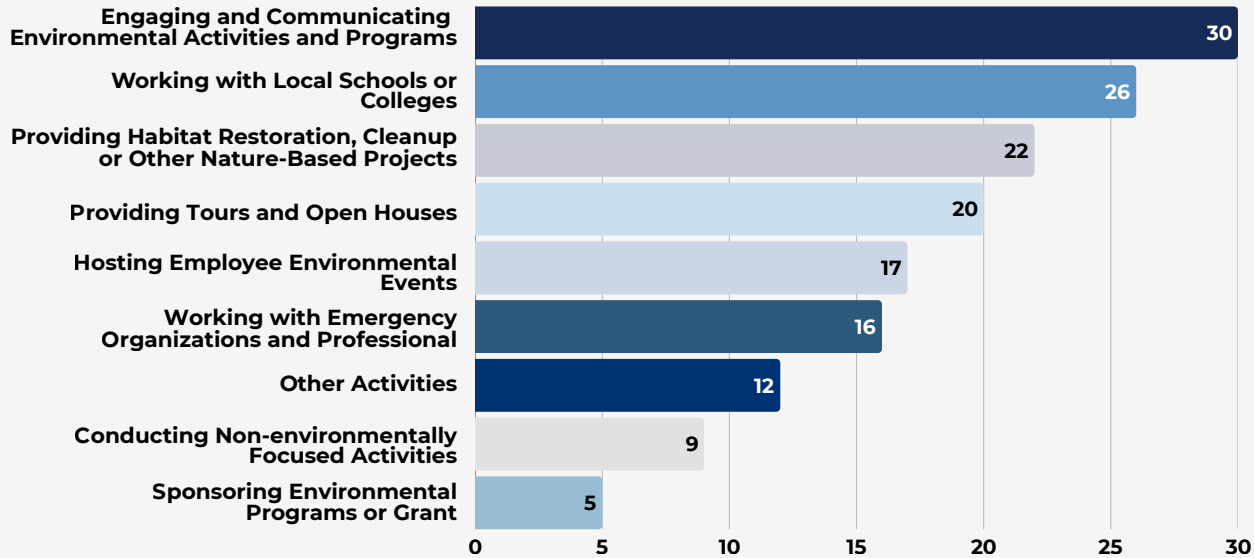

Figure 10. 2024 ESI Member Community Involvement by Event Type

Table 6. ESI Member Waste Reductions and Beneficial Reuse Totals 2004-2023

Program Updates

The ESI program is powered by a dedicated team of staff within DEACS working on behalf of the DEQ Secretary. Despite operating on a modest budget supported by an EPA pollution prevention grant and appropriations from the N.C. General Assembly, the team delivers a wide range of high value services to members across the state.

DEACS staff manage the program's daily operations and provide hands-on support through one-on-one coaching, helping members advance their pollution prevention and sustainability goals. ESI staff focus on an array of activities supporting members, including delivering trainings and webinars; planning and hosting the annual ESI Conference; facilitating networking events; promoting and recruiting for the program at various conferences; managing the member only Listserv; publishing an electronic newsletter; organizing Advisory Board meetings and the Steward Forum; analyzing member data; developing program resources; and recognizing member achievements.

Staff conduct site visits covering a broad spectrum of purposes, such as general coaching, technical assistance, EMS functional equivalent reviews, and site verifications for new members and renewals. Additionally, ESI coaches meet with prospective members to share the benefits of joining ESI as the program continues to grow and evolve. One standout offering is the Environmental Benchmarking Series, where member facilities host an on-site event sharing their experiences and stories on a variety of environmental projects. A tour of the facility and an open discussion about the successes and lessons learned of the project are included. DEACS is also exploring new networking and engagement opportunities to further strengthen the ESI community in future years.

Figure 11. ESI Stream Cleanup in Raleigh

Figure 12. ESI Booth at Carolina Star Conference

In 2024 the ESI Program:

Trainings

- Conducted EMS training and guidance for NC State University students within the Department of Forestry and Natural Resources during their Environmental Technical 460 senior class project from January to May.
- Hosted webinar on and distributed a new community involvement guidance document in March.
- Provided an ISO 14001 Internal Auditor Training led by NC State's Industrial Expansion Solutions at the USEPA in Research Triangle Park in March.
- Taught a six session EMS Module Training from June through November.

Technical Assistance

- Performed two functional equivalent EMS audits for ESI members.
- Conducted a total of 29 site visits, resulting in a variety of technical and permitting assistance.
- Distributed five issues of the ESI eNews.
- Updated and released the annual reporting tool.

Events

- Presented to the State Utilities Saving Commission in January and February.
- Facilitated a PFAS listening session for ESI Rising Stewards and Stewards in March to discuss member technical assistance and guidance needs.
- Provided an overview on the program and our pollution prevention assistance to other state agencies through the state's Utility Savings Initiative in April.
- Organized an Environmental Benchmarking Series in April at USEPA in Research Triangle Park focused on waste management and energy use reduction.
- Attended and hosted a booth at the Carolinas Air Pollution Control Association Spring meeting in April.
- Held the annual Steward Forum in July with 29 attendees representing 14 Steward facilities.
- Organized an Environmental Benchmarking Series focused on compost and foam densification at Mecklenburg County Solid Waste Operations in December.
- Provided an ESI Program Overview at four NCMA Hazardous Waste Compliance workshops in May.

- Attended and hosted a booth at the Wilmington Safety School in July.
- Hosted a booth at the NCMA Energy, Environment, Health, and Safety School in August.
- Attended and hosted a booth at the NC Department of Labor's Carolina Star Conference in September.
- Facilitated three Environmental Symbiosis meetings in collaboration with Grifols and Novo Nordisk.
- Held the first Chemical Manufacturing Network Meeting in April at USEPA in Research Triangle Park.

2024 ESI Conference Spotlight

Figure 13. 2024 ESI Conference

The ESI Annual Conference was held on October 28-29, 2024, at the N.C. McKimmon Conference and Training Center in Raleigh and drew a record-breaking 118 attendees over the two days. Participants explored a wide range of impactful topics including energy goal management systems, environmental data management, the changing climate and resiliency adaptation, food waste initiatives, recycling updates, emerging contaminants, and economic development support.

Each year awards are presented to the Members of the Year at each level. The 2024 award winners were:

- **Partner of the Year:** Jowat Corporation
- **Rising Steward of the Year:** Mecklenburg County Solid Waste Operations
- **Steward of the Year:** Grifols Therapeutics, LLC

Membership

Figure 14. Steward Renewal Award to Dell

Through forward-thinking pollution prevention strategies and innovative environmental practices, the ESI program empowers members to elevate their sustainability performance and gain recognition for going above and beyond regulatory requirements. Membership opens the door to individualized coaching, valuable resources, and a statewide network of organizations committed to environmental excellence. ESI is open to any entity in North Carolina that meets program criteria and commits to improving and reporting on its environmental impacts at one of three member levels: Partner, Rising Steward, or Steward. These tiers provide a pathway for growth, visibility, and continuous improvement as members advance their environmental leadership.

Criteria

Partner

The Environmental Partner level is designed for adoption by a broad range of organizations that are interested in beginning the process of developing a systematic approach to improving their environmental performance. Partners have the option of implementing at least two measurable goals or developing an EMS. Partner members may include multiple sites. By the end of 2024, the program had 63 Environmental Partners at 166 Partner sites.

To be considered at the Partner level, the applicant must meet the following:

- Demonstrate a commitment to compliance.
- Set environmental performance goals that include pollution prevention and are appropriate to the nature, scale, and environmental impact of the organization.
- Not be under any environmental criminal indictment or conviction.
- Agree to report annually on progress toward the organization's environmental performance goals, reductions in environmental emissions and/or discharges, and any reportable noncompliance events.

Rising Steward

The Rising Environmental Steward level is designed for those organizations that have a mature environmental management system. Rising Steward applications must be for a single site, or multiple sites managed under one EMS. The program had 10 Rising Environmental Stewards as of December 31, 2024.

Rising Environmental Steward applicants must meet all Partner criteria and the following:

- Set measurable environmental performance goals that are adopted into the framework of the EMS, include pollution prevention and/or process efficiency improvement activities.
- Demonstrate a mature EMS based on the ISO 14001 or a functionally equivalent model. The EMS for the site must be ISO 14001 third-party certified or be reviewed and deemed functionally equivalent by DEQ staff.
- Demonstrate commitment to meet and go beyond compliance.

Steward

The Environmental Steward level is for those organizations that display a commitment to exemplary environmental performance beyond what is required by law. Steward applications must be for a single site, or multiple sites managed under one EMS.* By the end of 2024, the program had 30 Environmental Stewards.

Environmental Steward applicants must meet all Partner and Rising Steward criteria plus the following:

- Set aggressive environmental performance goals.
- Have a process for communication with the local community on program activities and progress toward performance goals.
- Demonstrate how their EMS is integrated into core business functions.
- Agree to mentor other ESI members.

Rising Stewards and Stewards are reassessed after each five-year period of membership for renewal at their current level. Partner members are reviewed annually, through their annual report submissions, to assess progress made toward environmental performance and overall program goals.

Benefits

All ESI members are eligible for the following:

- Technical assistance on developing an environmental management system (EMS), internal auditing, and pollution prevention approaches;
- Customized training and technical assistance;
- Use of the ESI Energy Toolkit;
- Networking platforms including an annual conference, environmental benchmarking events, and topic-specific roundtables, trainings, workshops, and webinars;
- Listserv open to members as well as DEQ and Waste Reduction Partners staff to provide a forum for sharing ideas and examples of best practices and finding solutions to member concerns/issues/questions;
- Recognition of program participation through press releases, the ESI website, newsletters, social media posts or inclusion in other DEQ materials;
- Use of the program logo for the achieved level;
- Access to Stewards and other members as mentors where appropriate;
- Assigned coach as single point-of-contact within DEACS;
- Member awards and ceremony at the Annual ESI conference;
- Letter signed by the DEQ Secretary when joining or advancing in the program; and
- Other benefits as deemed appropriate by the DEQ Secretary based on recommendations from the Advisory Board and the DEQ Internal Workgroup.

Environmental Stewards have the following additional benefits:

- Formal public recognition from the DEQ Secretary that may include an on-site award ceremony including the presentation of a formal plaque, public announcements, and press releases;
- Participation in the Steward Forum chaired by the DEQ Secretary;
- Specialized topic meeting discussions (ex. PFAS) with DEQ regulatory staff;
- Priority membership on the ESI Advisory Board when appropriate positions are available.

Table 6: ESI Member Waste Reductions and Beneficial Reuse Totals 2004-2023

Application Process

Partner, Rising Steward, and Steward applications are accepted year-round. The ESI Advisory Board meets twice per year to review applications and renewal site visits with associated reports at the higher two membership levels; discuss program changes; and review potential program improvements, changes, or other updates. All applicants join ESI as Partners to begin receiving benefits such as newsletters, listserv postings, an assigned coach, and training and networking event notifications while their higher-level application may still be under review by the Advisory Board. Figure 15 depicts the application and review process for facilities. Partner level applications do not get reviewed by the Advisory Board.

Figure 15. Application Process Diagram for Rising Stewards and Stewards

Internal Workgroup

Following receipt of an application, an environmental compliance check is completed by the DEQ Internal Workgroup, comprised of representatives from regulatory and non-regulatory divisions within DEQ (Figure 16), to determine their compliance status over the preceding five years, as well as identify any pending compliance issues. This information is considered by the DEQ Secretary regarding acceptance of new organizations as Partners in the program. The Workgroup also reviews the compliance history of Rising Steward and Steward members during each five-year renewal period and when members request to advance to a higher level to ensure the member is meeting regulatory requirements and maintaining permit compliance. This information is shared with the ESI Advisory Board as part of their review.

Table 8. DEQ Internal Workgroup Members

DEQ Internal Workgroup
Division of Air Quality
Division of Energy, Mineral and Land Resources
Division of Environmental Assistance and Customer Service
Division of Waste Management
Division of Water Resources

Advisory Board

The DEQ Secretary established a volunteer Advisory Board to oversee program development and implementation. Board membership consists of manufacturers, industries, industry trade groups, environmental and citizen nongovernmental organizations (NGOs), small businesses, representatives of city and county governments, DEQ representatives and others as deemed appropriate. A DEQ designee, appointed by the Secretary, serves as the Board's chairperson. Membership on the Advisory Board rotates at four-year intervals and is capped at 15 members. Whenever possible, Environmental Stewards are given priority for membership for the business, government, and at-large seats. The 2024 Board Members are listed in Figure 17.

Rising Steward and Steward applicants and five-year renewals receive an on-site verification visit by DEQ staff to ensure the implemented EMS is functioning and gather observations supporting the organization's application. All information obtained through the application and the on-site verification visit is documented and summarized in a report presented to the Advisory Board for review. The Advisory Board then makes recommendations to the DEQ Secretary regarding acceptance of the Rising Steward and Steward applicants. The DEQ Secretary reviews the recommendations made by the Advisory Board and makes final decisions regarding the recommendations.

2024 Advisory Board Members and Representation

NCDEQ - Chair
Andy Miller- Deputy Secretary

Steward - Large Business
David Auge - Grifols Therapeutics LLC
Bill Covert - Leggett & Platt ON64
Garrett Christy - Daimler Truck North America Cleveland

Steward - Agribusiness
Brandon Farley - Smithfield Packaged Meats Wilson

Steward - Local Government
Darren Steinhilber - Mecklenburg County Solid Waste

Steward - Small Business
Teddy Chrisman - Uchiyama
Jarrad Botts - Eaton Youngsville

Steward - State/Federal Facility
Kaitlin Hartman - US EPA

Steward - At Large
Michelle Kareis - TE Connectivity
Dan Budreau - John Deere Turf Care
Rosie Huffman - Firestone Fibers and Textiles

Academia
Dr. William Page - NC State University

Industrial Trade Group
Jimmy Carter - NC Manufacturers Alliance

Environmental Non-profit
Vacant

Figure 16. ESI Advisory Board

Figure 17. 2024 Spring Advisory Board Meeting

Conclusions

The 2024 ESI annual report demonstrates how proactive environmental leadership can be. When organizations go beyond regulatory requirements, they not only reduce environmental impacts and conserve natural resources, they can also create significant economic and operational benefits. These improvements extend beyond the fence line, often benefitting communities at large.

What makes the DEQ ESI program stand out is its ability to foster a culture of shared success. Members are encouraged to showcase their achievements across industries, inspiring and teaching others while contributing to a healthier environment for all North Carolinians. For more than 20 years, ESI members and DEQ have worked side-by-side to protect and enhance the state's natural resources. This longstanding partnership between the regulated community and the regulatory agency is a model of collaboration that other states and organizations can look to as an example of what's possible.

The ESI program also captures environmental performance data across multiple media and sectors, including the real monetary savings generated by members' pollution prevention and sustainability efforts. These savings, both financial and environmental, help North Carolina organizations build resilience, drive economic growth, and lead with responsible environmental stewardship.

Glossary of Terms

DAQ – Division of Air Quality – regulatory division within DEQ that is responsible for protecting and improving outdoor, or ambient, air quality in North Carolina.

DEACS – Division of Environmental Assistance and Customer Service – non-regulatory division within DEQ that helps expand the use of sustainable practices regarding waste reduction, energy efficiency, water conservation and emissions reductions including pollution prevention. DEACS also helps promote recycling and material management programs and helps expand recycling infrastructure thereby creating economic growth. DEACS also manages two recognition programs: NC GreenTravel and ESI.

DEQ – Department of Environmental Quality – North Carolina Cabinet level state agency that is the lead stewardship agency for the protection of North Carolina's environmental resources; formerly known as NCDENR.

DEQ Divisions – DEQ is organized into multiple units including regulatory (based on media – air, water, waste, etc.) and nonregulatory (public affairs, state energy office, etc.) functions.

DEQ Internal Workgroup – Group of representatives comprised from regulatory and non-regulatory divisions within DEQ (DAQ, DEACS, DEMLR, DWM, and DWR) that perform compliance checks and provide a point of contact for questions by ESI staff pertinent to their media.

DEQ Secretary – Appointed by the Governor and confirmed by the North Carolina General Assembly as a cabinet officer responsible for the overall management of the DEQ.

DEMLR – Division of Energy, Mineral, and Land Resources – regulatory division within DEQ that is responsible for protecting North Carolina's land and geologic resources. The division regulates and provides technical assistance related to mining, dams, sediment and erosion control and stormwater management.

DOE – (United States) Department of Energy – federal agency with a mission to ensure America’s security and prosperity by addressing its energy, environmental and nuclear challenges through transformative science and technology solutions.

DWM – Division of Waste Management – regulatory division within DEQ that is responsible for assuring that solid and hazardous wastes and underground storage

tanks are managed properly, and that existing contamination is cleaned up. This is accomplished through the Hazardous Waste, Solid Waste, Superfund, and Brownfields Sections.

DWR – Division of Water Resources – regulatory division within DEQ that is responsible for ensuring safe drinking water in accordance with federal requirements, issuing pollution control permits, monitoring permit compliance, evaluating environmental water quantity and quality, and carrying out enforcement actions for violations of environmental regulations.

EMS – Environmental Management System - part of an organization's business management system used to develop and implement an environmental policy and manage its environmental impacts. ISO 14001:2015 is the most commonly used international standard to provide auditable guidelines for an EMS.

Environmental Partner or Partner – Introductory level within the ESI. Members at this level must not be under any criminal indictment for environmental issues and must set either two measurable goals or commit to implementing an EMS.

Environmental Rising Steward or Rising Steward – Middle level of the ESI. Members at this level must meet the requirements of the Partner level and then must have both a mature EMS as well as measurable environmental goals.

Environmental Steward or Steward – Highest level of the ESI. Members at this level must meet the requirements of the two lower levels and must have aggressive environmental goals, have their mature EMS integrated into their core business functions, demonstrate going beyond compliance, and have community involvement related to the environment. Stewards also agree to mentor others on environmental topics.

EPA – (United States) Environmental Protection Agency – federal agency with a mission to protect human health and the environment.

ESI – Environmental Stewardship Initiative – no-cost assistance and recognition leadership program administered by NC DEQ.

ESI Advisory Board – Appointed group created to oversee ESI program development and implementation. Membership is representatives from manufacturers, industries, industry trade groups, environmental and citizen nongovernmental organizations

(NGOs), small businesses, representatives of city/county governments, state/federal government agencies, and others as deemed appropriate. A DEQ employee, appointed by the Secretary, serves as the board's chairperson. Stewards in the ESI are given priority membership on this board, which reviews and makes recommendations to the DEQ Secretary on applications to the two higher levels of the program.

GHG – Greenhouse Gases - gases that trap heat in the atmosphere, often used interchangeably with the term carbon emissions, however GHG includes more than carbon dioxide and methane. Carbon dioxide (CO2) is the primary greenhouse gas emitted through human activities and is used to calculate equivalent emissions from energy production.

ISO 14001 - An internationally recognized standard for environmental management systems (EMS). It provides a framework for organizations to design and implement an EMS and continually improve their environmental performance.

LED – Light Emitting Diode – a semiconductor diode which glows when power is applied frequently used in energy efficient lighting.

NCMA – North Carolina Manufactures' Alliance – non-profit association representing the interests of North Carolina manufacturing industries

NCSU – North Carolina State University

NGO – Non-governmental organization

PFAS – Per- and Polyfluoroalkyl Substances, a group of synthetic chemicals that are persistent in the environment; PFAS are widely used in commercial and consumer products, and in many industrial and manufacturing processes.

P2 – Pollution prevention – also known as source reduction, is any practice that reduces, eliminates, or prevents pollution at its source prior to recycling, treatment, or disposal.

WTE – Waste-to-Energy – process of generating energy in the form of electricity and/or heat from the combustion of solid waste.

ZWTL – Zero-Waste-to-Landfill – Indicates that a facility or organization has diverted at least 90% of waste from landfill disposal using methods other than waste to energy. ZWTL claims can only be made after third-party validation to the UL 2799A standard.

2024 ESI Members

Environmental Stewards

- Ajinomoto Health & Nutrition North America, Inc. (Raleigh)
- Bridgestone Americas Tire Operations, LLC Wilson
- Corning Incorporated Wilmington Optical Fiber
- Corning Optical Communications Hickory Manufacturing and Technology Center
- Daimler Truck North America Cleveland Truck Manufacturing Plant
- Daimler Truck North America Gastonia
- Daimler Truck North America Mount Holly Truck Manufacturing Plant
- Dell Technologies Apex Manufacturing
- DENSO Manufacturing North Carolina Inc. Statesville Plant
- Eaton Corporation Asheville
- Eaton Corporation Raleigh Production Operations
- Eaton Corporation Youngsville Plant Operations
- Fleet Readiness Center East (Cherry Point)
- GKN Driveline Sanford
- Grifols Therapeutics LLC (Clayton)
- Hitachi Astemo Indiana, Inc. Tarboro Plant
- John Deere Turf Care (Fuquay-Varina)
- Keystone Powdered Metal Company (Troutman)
- Leggett & Platt Branch 0N64 High Point Furniture
- Mecklenburg County Solid Waste Operations (Charlotte)
- Pfizer (Sanford)
- Smithfield Packaged Meats Corp Wilson Facility
- Stanley Black & and Decker Kannapolis DC
- TE Connectivity Pegg Rd (Greensboro)
- The North Carolina Zoo (Asheboro)
- Thomas Built Buses, Inc. (High Point)
- Two Rivers Utilities Wastewater Treatment Division (Gastonia)
- Two Rivers Utilities Water Supply & Treatment (Gastonia)
- Uchiyama MFG America LLC (Goldsboro)
- U.S. Environmental Protection Agency at Research Triangle Park

Environmental Rising Stewards

- Bridgestone-Bandag, LLC Oxford Plant
- CommScope Inc. Catawba
- CommScope Inc. Claremont
- Eaton Aeroquip, LLC (Middlesex)
- Filtrona Filters (Greensboro)
- GKN Sinter Metals (Conover)
- Hyster-Yale Group (Greenville)
- QORVO, Inc. (Greensboro)
- Smithfield Fresh Meats Corp Tar Heel Facility
- Wolfspeed, Inc. Durham and RTP

Environmental Partners

- Advance Pierre Foods (Claremont)
- Alliance One International Inc. (4) *
- Alphagary (Pineville)
- American Emergency Vehicles (2) *
- Aptar Group Lincolnton Facility
- Arauco North America, Inc. (Moncure)
- Asana Partners (Charlotte)
- Best Western Hendersonville Inn
- Burt's Bees Manufacturing Plant (Morrisville)
- Cape Fear Public Utility Authority (8) *
- Carolina Utility Customers Association, Inc. (Raleigh)
- Cascades Tissue Group North Carolina Inc., a Division of Cascades Holding US Inc. (Rockingham)
- Charlotte-Mecklenburg Schools
- City of Gastonia Field Operations Division
- City of Shelby First Broad River Wastewater Treatment Plant
- City of Shelby Water Treatment Plant
- Corning Newton Cable Plant
- Corning Optical Communications Trivium Cable Plant (Newton)
- Cree LED (Durham)
- Crown Equipment Corporation (Kinston)
- Culp Home Fashions (Stokesdale)
- Direct Pack, Inc. (Rockingham)
- Dominion Energy North Carolina, Inc. (21) *
- Domtar Paper Company, LLC (Plymouth)
- Eaton Corporation Capital Production Operations (Raleigh)

- FCR, LLC (Charlotte)
- Fresenius Kabi Wilson Facility
- Freudenberg Performance Materials (Durham)
- General Electric Aerospace Durham Engine Facility
- Gerresheimer Glass (Morganton)
- HAECO Airframe Services (Greensboro)
- Industrial Connections & Solutions LLC (Mebane)
- International Paper Riegelwood Mill
- Jowat Corporation (Archdale)
- Kao Specialties Americas LLC (High Point)
- Kewaunee Scientific Corporation (Statesville)
- Liberty Tire Recycling, LLC (2) *
- Linamar North Carolina (Asheville)
- Martin Marietta (58) *
- MATREX A Division of Leggett & Platt Components Company, Inc. – Northridge (Greensboro)
- Mattamy Homes Raleigh Division (Cary)
- Michelin Aircraft Tire Company (Norwood)
- National Institute of Environmental Health Sciences (Research Triangle Park)
- N.C. Dept. of Transportation Ferry Division (9) *
- N.C. Museum of Natural Science (2) *
- Novartis Gene Therapies (Durham)
- Piedmont Service Group (3) *
- Pratt and Whitney (Asheville)
- Reich LLC (Arden)
- Revlon (Oxford)
- Riverbend Malt House (Asheville)
- RTI International (Durham)
- Siemens Healthineers Cary Campus
- Sierra Nevada Brewing Company (Mills River)
- Smithfield Fresh Meats Corp (Clinton)
- Sofidel (Cleveland)
- Sterling Pharma (Cary)
- Tarboro Brewing Company
- Unilever (Raeford)
- Universal Leaf North America U.S., Inc. (2) *
- Water and Sewer Authority of Cabarrus County (3) *
- Wicked Weed Brewing, LLC (2) *
- ZIEHL-ABEGG (Greensboro)

* Denotes multi-site Partners

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