NC Environmental Stewardship Initiative

2019 Annual Report

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Executive Summary

The N.C. Department of Environmental Quality's Environmental Stewardship Initiative (ESI) is a voluntary program that assists and encourages facilities to use pollution prevention and innovation to meet and go beyond regulatory requirements. The ESI takes a unique approach to supplement regulation by providing a voluntary, systematic and holistic approach to environmental management.

Reduced impacts and cost savings reported by members demonstrate real results and improvements to the environment, economy and health of the citizens in North Carolina. The ESI program assists members in addressing environmental challenges through partnerships as well as a comprehensive and innovative voluntary approach that benefits the environment and supports continued economic growth.

This approach combines recognition with assistance, training, mentoring and networking opportunities. The three-tiered membership structure of Environmental Partners, Rising Environmental Stewards and Environmental Stewards allows participation from a variety of organizations. The Partner level is the entry level of the program and helps organizations set environmental goals and/or develop an Environmental Management System (EMS) while higher tiers require organizations to be models of stewardship, as well as provide mentoring and educational resources to others in the program. In 2019, the ESI had 187 member sites in 62 North Carolina counties as shown in Figure 1 below.

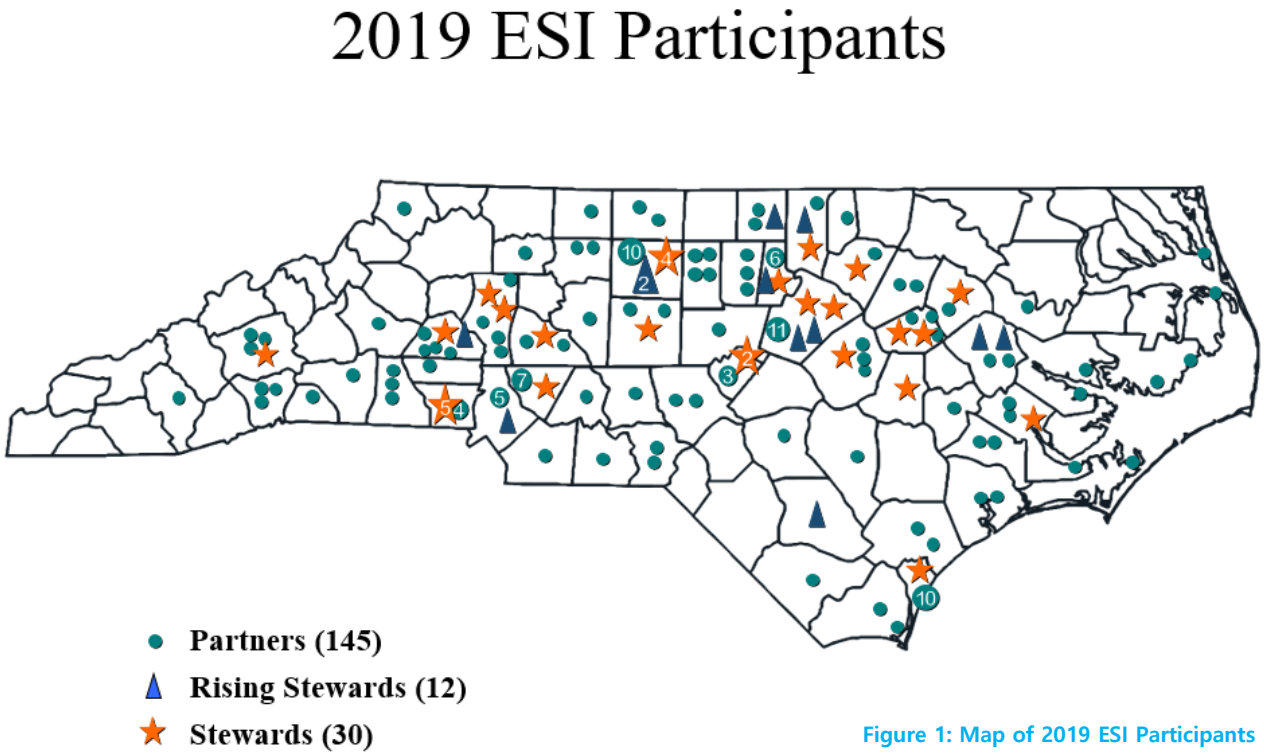


Figure 1: Map of 2019 ESI Participants

The ESI is open to any entity in North Carolina that commits to improving its environmental impact. (See the Membership section on page 19 of this report for more information on eligibility and the three tiers of the program). ESI members commit to developing environmental management systems and/or setting measurable goals that lead to continual improvement and stewardship. In 2019, ESI members set 275 goals covering multi-media, regulated and non-regulated environmental impacts, including energy and water conservation. Eighty-two members reported progress toward these specific goals†. In 2019, ESI members reported the following reductions in environmental impacts as shown in Table 1.

Table 1: 2019 ESI Members' Reported Results

2019 ESI MEMBERS' REPORTED RESULTS			
REDUCTIONS	Air Emissions	247	Tons
	Greenhouse Gas Emissions*	24,190	Metric Tons CO_2e
	Hazardous waste	158	Tons
	Landfilled waste	988	Tons
	Energy	847,583	mmBtu
	Water Use	1,052,916,723	Gallons
	Material Consumption	1,749	Tons
	Wastewater Pollutants	399,871	Tons
	Wastewater Volume	3,632,451,983	Gallons
REUSE	Biomass Recovery**	77,939	Tons
	Total Recycled Volume	189,404	Tons
TOTAL COST SAVINGS $ 11,331,947			

*Indirect not reported in energy reductions

**Category created for compost/mulch related goals

†Partners may apply to the program as a multi-site facility, which allows a collection of sites to submit a single annual report. New members must be in the program for at least one year prior to having their results included in the overall totals. Members are also allowed to request to be put on-hold for one-year (non-consecutive) increments. Therefore, the total number of members reporting may be less than the total membership number.

2019 Progress Report

2019 ESI Annual Conference

With the goal of supporting and encouraging superior environmental performance from North Carolina's companies and organizations, the ESI assists members in implementing environmental management systems and making progress on environmental goals. The ESI helps organizations share ideas and has developed an atmosphere of collaboration while fostering a culture of continual improvement.

The typical command and control regulatory approach to environmental management is necessary and has led to significant improvements. However, it is not practical or fiscally possible for North Carolina to regulate all pollution and consumption of natural resources. The ESI was established to help organizations reduce their environmental impacts beyond measures required by any permit or rule in a way that will improve the environment, conserve natural resources, encourage community involvement and provide long-term economic benefits.

Each organization within the ESI has committed to report annually on its progress toward its environmental goals. This annual report summarizes the self-reported annual data collected by the ESI members in 2019. Starting in 2005, members began to include cost savings from implementing environmental improvements in their reporting. Reporting on greenhouse gas emission reductions was first included in 2008. A new category was created in 2010 for biomass recovery to capture activities related to composting and mulching as a means of beneficial use by diverting waste from landfills. In 2012, the ESI was opened to organizations not regulated through North Carolina Department of Environmental Quality (DEQ) issued permits to increase the program's reach and build a larger network of organizations

working together to make North Carolina a model of environmental stewardship. The annual report form was updated for the 2016 reporting year allowing members to provide additional reduction data that may not have been directly tied to a site's environmental goals. An example of when this could occur would be if a site replaces a piece of equipment with a more efficient version but does not have an energy reduction goal; however, they are tracking their energy usage data for other management reasons and choose to report that data. Facilities were also allowed to report in either fiscal year or calendar year spans to ease the capture of data. It was requested that sites remain consistent from that point forward in the timeframe reported.

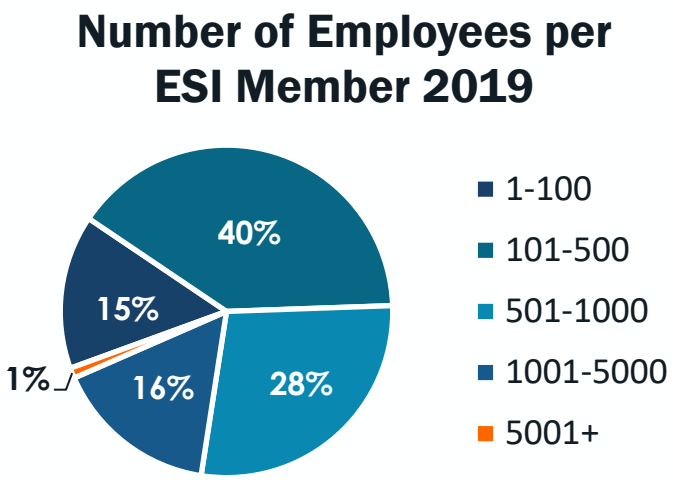
2019 ESI Annual Conference

Program Achievements

Membership Growth

ESI membership has grown almost six-fold from its original membership of 24 member sites in 2002 to 187 member sites in 2019. In 2004, a middle tier – the Rising Steward level – of membership was added (Figure 3).

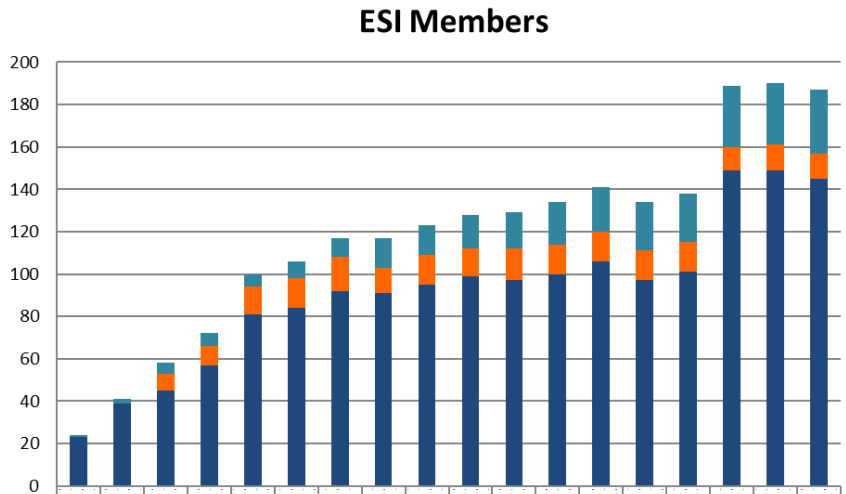
Figure 2: ESI Member Employment



Beginning in 2005, Partner applicants were allowed to submit one application for multiple sites. Facilities of all sizes participate with the smallest having only one employee and the largest employing more than 19,000 (Figure 2). Sixty-five member sites were registered to the ISO 14001:2015 international standard by third-party auditors, and seven have been deemed functionally equivalent to that same standard by ESI staff.

In 2019, one member facility site chose to drop out of the program; five sites merged into two reporting members due to their management structures; and four members sites were terminated for failure to submit the required ESI annual report. Three partner sites asked to be put on hold for a year due to reporting challenges associated with COVID-19 at the sites. In 2019, five new sites joined the ESI (Table 2), one Partner moved to the Rising Steward level and one Partner moved to the Steward level.

Figure 3: ESI Membership Growth, 2002-2019



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Stewards	1	2	5	6	6	8	9	14	14	16	17	20	21	23	23	29	29	30
Rising Stewards	0	0	8	9	13	14	16	12	14	13	15	14	14	14	14	11	12	12
Partner Sites	23	39	45	57	81	84	92	91	95	99	97	100	106	97	101	149	149	145

Table 2: 2019 New ESI Members

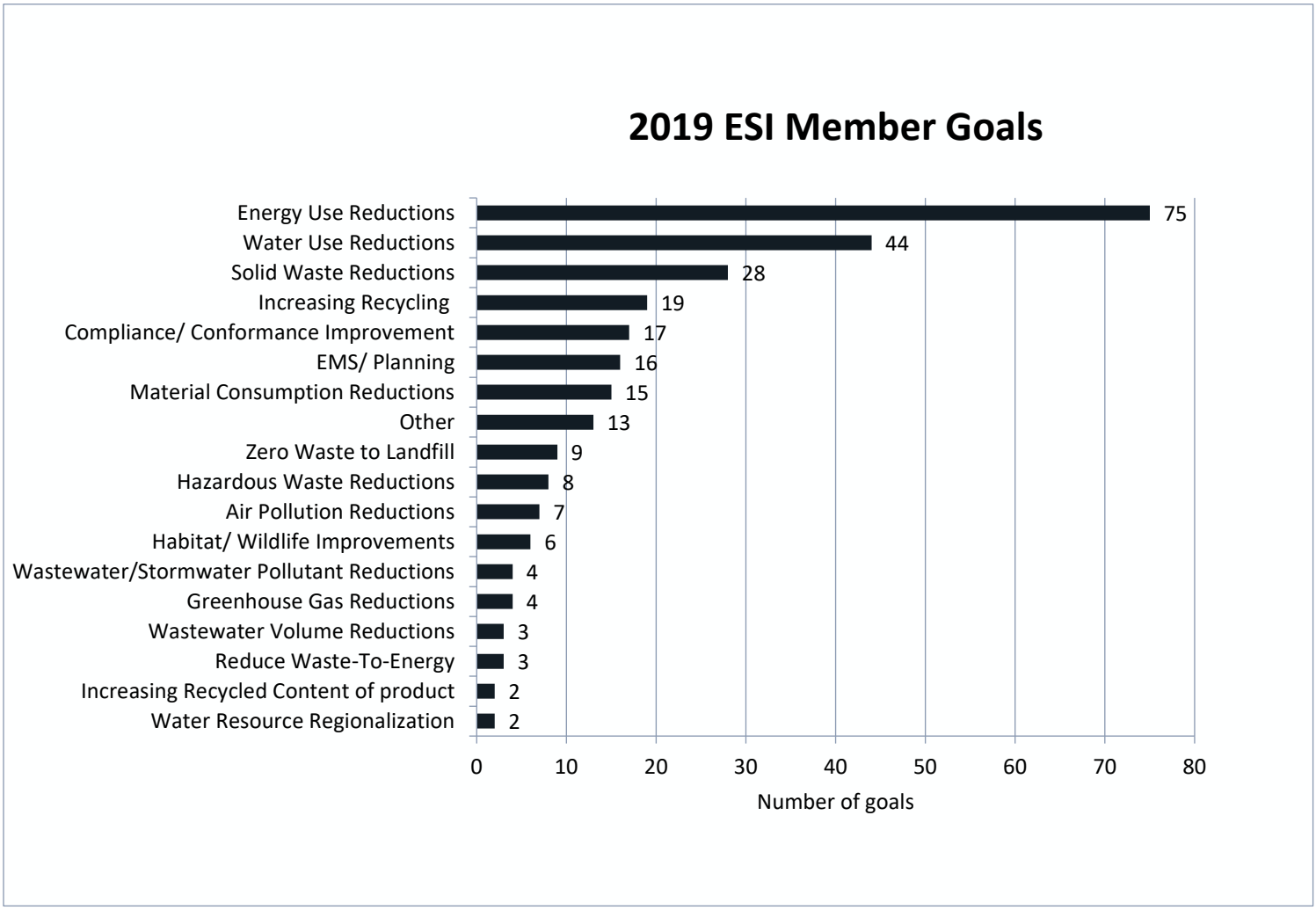
2019 New ESI Members

Facility Name	ESI Level	Year Joined	City	County
CW Wright Construction Company, LLC	P	2019	Currie	Pender
Eaton Asheville	S	2019	Arden	Buncombe
Flowserve, Inc.	P	2019	Raleigh	Wake
MATREX - A Division of Leggett & Platt Components Company, Inc.	P	2019	Greensboro	Guilford
Tarboro Brewing Company	P	2019	Tarboro	Edgecombe

Member Goals

In 2019, ESI members reported on 275 goals that covered multi-media regulated and non-regulated impacts. As shown in Figure 4, the greatest number of goals set in 2019 were related to energy use reductions.

Figure 4: 2019 ESI Member Goals



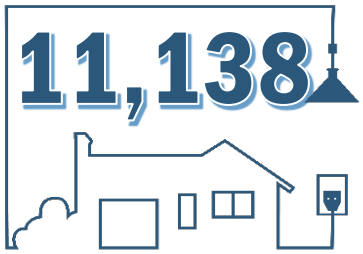
Member Results

ESI members are required to report on performance toward environmental goals and reductions in environmental impacts. While there are 187 sites in the program, there are nine multi-site members at a total of 110 sites reporting. New members must be in the program for at least one year prior to having their results included in the totals. Therefore, 82 members reported progress toward these goals, resulting in the following environmental impact reductions (See Tables 3 through 6). All reduction data are self-reported by member facilities and are not verified by the N.C. Department of Environmental Quality. While reductions are only counted in the first year of their occurrence, most are permanent reductions.

ESI members saved enough money on 2019 environmental projects to pay the salary of 377 people earning $30,000 per year.

Table 3: Total Cost Savings from Member Reported Environmental Projects

Year	Total Cost Savings
2004	NA
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
Totals	**$95,597,784**



Number of North Carolina homes that could be powered for a year by ESI member energy savings in 2019.

Table 4: Energy and Air Emission Reductions 2004-2019

Year	Energy Reductions	GHG Emission Reductions *	Air Emission Reductions**
2004	11,736	NA	297
2005	48,451	NA	208
2006	123,821	NA	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
Total	**78,538,671**	**175,366**	**8,997**
Units	**mmBtu**	**Metric Tons CO_2e**	**Tons**

*Indirect not reported in energy reductions

**Not including Greenhouse Gas (GHG) emission reductions

Table 5: Water and Wastewater Reductions 2004-2019

Year	Water Use Reductions	Wastewater Volume Reductions	Wastewater Pollutant Reductions
2004	369,529,216	NA	379
2005	54,201,286	85,566,162	527
2006	591,356,273	106,092,200	400
2007	83,929,264	881,690	0.02
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
Totals	**14,088,415,585**	**6,451,291,264**	**543,873**
Units	**Gallons**	**Gallons**	**Tons**

ESI members saved enough water in 2019 to fill more than

47,860

average-sized swimming pools!

Table 6: Solid and Hazardous Waste Reductions, Material Consumption Reductions and Beneficial Use Totals 2004-2019

Year	Hazardous Waste Reductions	Landfilled Waste Reductions	Material Consumption Reductions	Total Biosolids Volume	Total Biomass Recovered*	Total Recycled Volume
2004	12	997	509	NA	NA	10,015
2005	119	82,453	37,728	7,208,691	NA	8,047
2006	405	59,441	973	2,720,350	NA	12,594
2007	13	205,169	60	18,410,000	NA	23,986
2008	200	737	2,136	Not Reported	2,783	4,777
2009	10	4,072	639	Not Reported	258,635	34,233
2010	6	10,245	1,792	Not Reported	333,375	36,667
2011	15	3,755	115	Not Reported	346,437	29,901
2012	4	3,071	665	Not Reported	2,959	33,837
2013	37	1,605	24	Not Reported	3,122	46,350
2014	1,538	11,505	23,073	Not Reported	17	32,158
2015	284	42,737	589	Not Reported	54,360	42,150
2016	314	2,535	376	Not Reported	93,888	159,194
2017	105	350,911	356	Not Reported	95,625	97,774
2018	30	3,430,522	515	Not Reported	89,607	329,229
2019	158	988	1,749	Not Reported	77,939	189,404
Totals	**3,252**	**4,210,745**	**71,300**	**28,339,041**	**1,358,747**	**1,090,317**
Units	**Tons**	**Tons**	**Tons**	**Gallons**	**Tons**	**Tons**

*Category created for compost/mulch related goals

Reducing energy usage, water usage and solid waste generation as well as increasing recycling were the most common reduction goals of ESI members in 2019. Goals related to compliance, improvement/implementation in environmental management systems (EMS), material consumption reductions, zero waste to landfill, wildlife habitat improvements, hazardous waste reductions, air pollution reductions, and a variety of other environmental topics were also reported.

- Seventy-five goals related to reducing consumption of energy (natural gas, fuel oil, and electricity) as well as fuel used in vehicle fleets (gasoline and diesel) were reported. In total, members reduced their usage by more than 847,000 mmBtus (million British Thermal Units, or BTUs). The majority of these reductions came from electricity and natural gas usage reductions in 2019. The reductions occurred even with the increased production that came with an improving economy. LED lighting projects, process efficiency improvements including implementation of variable speed/frequency drives as well as boiler, chiller, HVAC, roof replacements, and compressed air projects all contributed to the energy reductions. Replacement of older equipment with more efficient devices and software programming/upgrades was credited with efficiency increases which either reduced the overall energy needed or kept demand steady during production growth. Multiple sites also had employee educational campaigns. In addition, at least three sites completed energy assessments to identify opportunities for improvement.
- Forty-four goals related to water usage were reported with reductions of more than one billion gallons of water. Almost 85 percent of the water saved as reported above came from a paper plant that installed a new cooling tower to eliminate once through non-contact cooling water. Almost 17 million gallons were saved by two members implementing recirculation projects for cooling tower water, and more than three million gallons were saved by one member by replacing an outdoor safety shower that previously had to be set to trickle all winter to avoid freezing with a freeze-proof system. Other reductions were attributed to improvements in maintenance; new chillers and other equipment replacement; reductions in potable water used for landscape irrigation; and employee education campaigns.
- Twenty-eight goals related to solid waste reduction, 19 related to recycling, and 15 related to material consumption goals with a reduction of almost 1,000 tons of waste going to landfill and almost 190,000 tons of material being recycled were accomplished. Eight sites also indicated having active zero waste to landfill (ZWTL) goals with a few others maintaining that achievement despite the current recycling markets.

Facilities also reported reductions in hazardous waste generation, air pollutants including greenhouse gas (GHG) emissions, and wastewater volume and pollutants discharged in 2019.

- Eight goals were reported on hazardous waste reductions that prevented the generation of 158 tons of hazardous waste. Changes in the handling of aerosol cans, sampling of wastes to reclassify some materials as non-hazardous, reductions in quantities of adhesives kept on-hand thus reducing waste generated by expiration/spoilage, and the use of left-over coatings on additional projects rather than disposing after each project all contributed to these reductions.
- Thirty-one facilities reported wastewater discharge volume reductions of more than 4.5 billion gallons. However, only three facilities reported goals to reduce wastewater discharges related to cooling tower condensate capture projects and a pretreatment system upgrade. Therefore, it is assumed the majority

of wastewater reductions are related to the water use reductions.

- Four goals were related to wastewater effluent and stormwater pollutant reductions of almost 400,000 tons. The ESI members that were the largest contributors to these numbers did not report on goals specific to water pollutants. Review and improvement of stormwater best management practices and maintenance performed by public utilities to reduce leaks and improve efficiencies were the goals reported but biological oxygen demand and chemical oxygen demand reductions from publicly owned treatment works and a pork producer were the largest contributors to the reductions.
- Seven goals were reported on air pollutant emission reductions of almost 750 tons. Reduction of almost 68 tons of volatile organic compounds were related to coating and solvent operation efficiency improvements. Additionally, pollutants from combustion were reduced by performing maintenance and upgrades to the equipment. Four facilities reported on reduction goals specific to GHG emissions that were not included in the energy reductions. Additional information on GHG emissions is in the next section.
- Seventeen goals related to environmental compliance, and 16 goals related to EMS development and improvement were reported for 2019.

Members also reported on goals related to wildlife and habitat improvements, water regionalization, reduction of waste-to-energy while maintaining ZWTL, and other environmentally related goals specific to individual sites.

Greenhouse Gas Reductions

Members reported that energy reductions can be converted to GHG reductions, which show a direct positive impact on the environment. Table 7 and Figure 5 below provide a summary of reductions in energy use and the subsequent metric tons of carbon dioxide prevented from entering the atmosphere. They also include the GHG reductions that members reported separately from energy reductions. The Simplified Greenhouse Gas Calculator tool provided by the Environmental Protection Agency's Center for Corporate Climate Leadership program was used to convert the reported electricity and combustion fuel values to metric tons of carbon dioxide equivalent (CO_2e). This tool can be found on the EPA Climate Leaders website.

Table 7: 2019 Reported Greenhouse Gas Emission Reductions

	mmBtus	Metric tons CO_2e
E-85	66	1
CNG	2,401	1
Propane	3,196	198
Residual Oil	2,695	203
Gasoline	8,265	558
Biofuel	14,944	2,297
Diesel	32,286	2,406
Natural Gas	218,325	11,596
Distillate Oil	237,316	17,617
GHG (not reported in energy reductions)	NA	24,190
Electricity	328,090	32,609
Total Energy	**847,583**	**91,677**

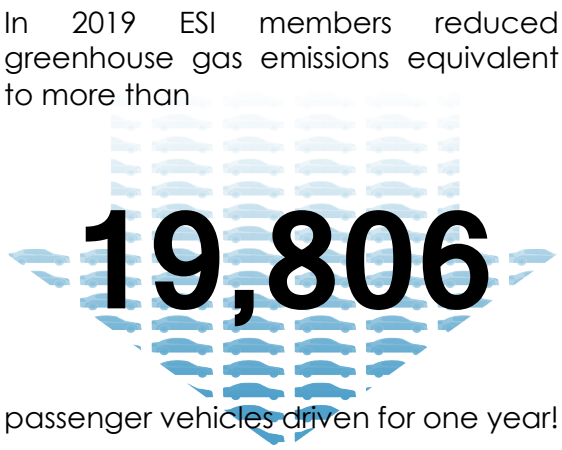
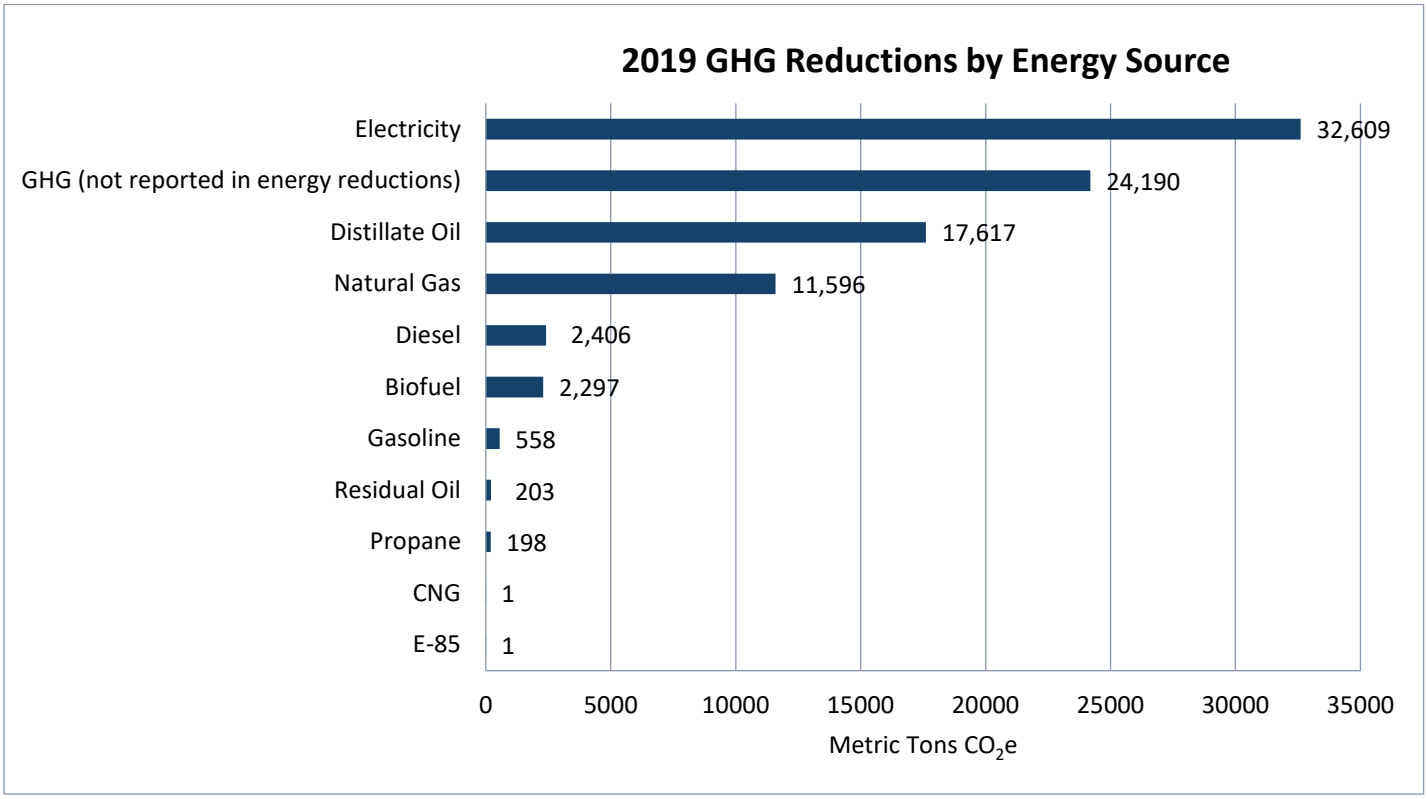


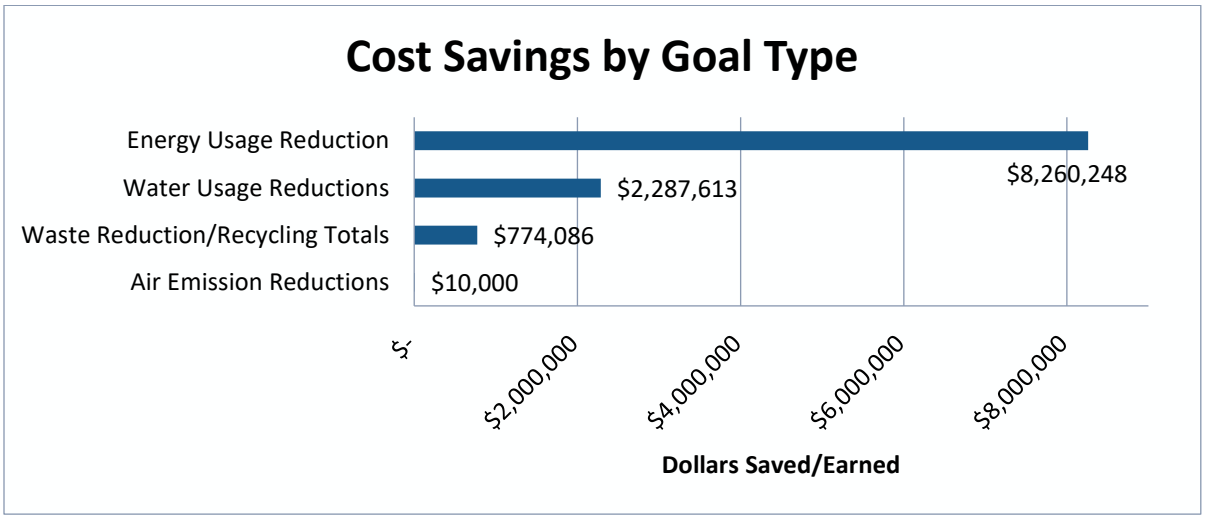
Figure 5: 2019 Greenhouse Gas Emission Reductions by Energy Source in Metric Tons CO_2e



Cost Savings

More than $11.3 million in cost savings were reported by ESI members for environmental projects conducted in 2019. Savings were reported by 26 facilities with most money saved through energy reductions. Savings were also reported from water reduction projects as well as solid waste reductions and recycling rebates. One facility reported cost savings on an air emissions goal. Figure 6 shows the breakdown of cost savings by goal type.

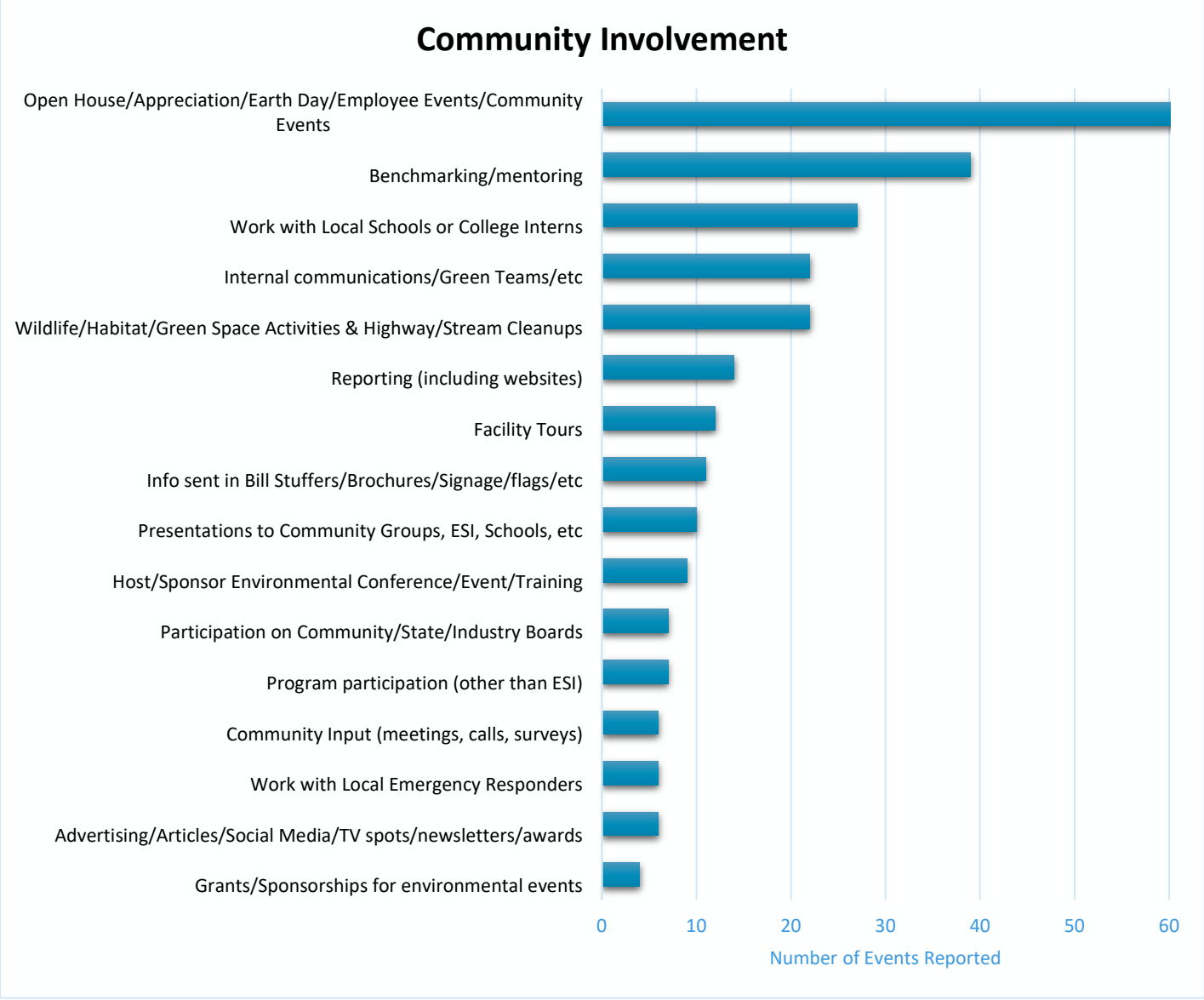
Figure 6: 2019 ESI Member Cost Savings by Goal Type



Community Involvement

In addition to reporting on goals, ESI members also submit information on their environmental involvement in the community. ESI Steward members are required to communicate with their communities regarding their environmental performance. Although only ESI Stewards are required to report these activities, other members may choose to report their activities as well. For 2019, 269 activities were reported by 52 members (30 Stewards and 22 other members). Figure 7 provides a summary of these activities.

Figure 7: 2019 ESI Member Community Involvement by Event Type



2019 Internal Auditor Training Hosted by Thomas Built Buses

New Member Accomplishments

Members who have been in the ESI program for less than one year do not have any results included in the reduction totals in this report and are not required to report since only baseline data is required in their applications. However, some new members chose to submit data to demonstrate their achievements. Four new members chose to submit reports for 2019 with the following results (Table 8).

Table 8: 2019 Reductions Reported by New Members

	2019 NEW MEMBERS RESULTS		
REDUCTIONS	Air Emissions	0.43	Tons
	Greenhouse Gas Emissions*	NA	Metric Tons CO_2e
	Hazardous waste	NA	Tons
	Landfilled waste	2	Tons
	Energy	NA	mmBtu
	Water Use	43,589	Gallons
	Material Consumption	NA	Tons
	Wastewater Pollutants	NA	Tons
	Wastewater Volume	NA	Gallons
REUSE	Biomass Recovery**	1.94	Tons
	Total Recycled Volume	414	Tons
	TOTAL COST SAVINGS $ 4,293		

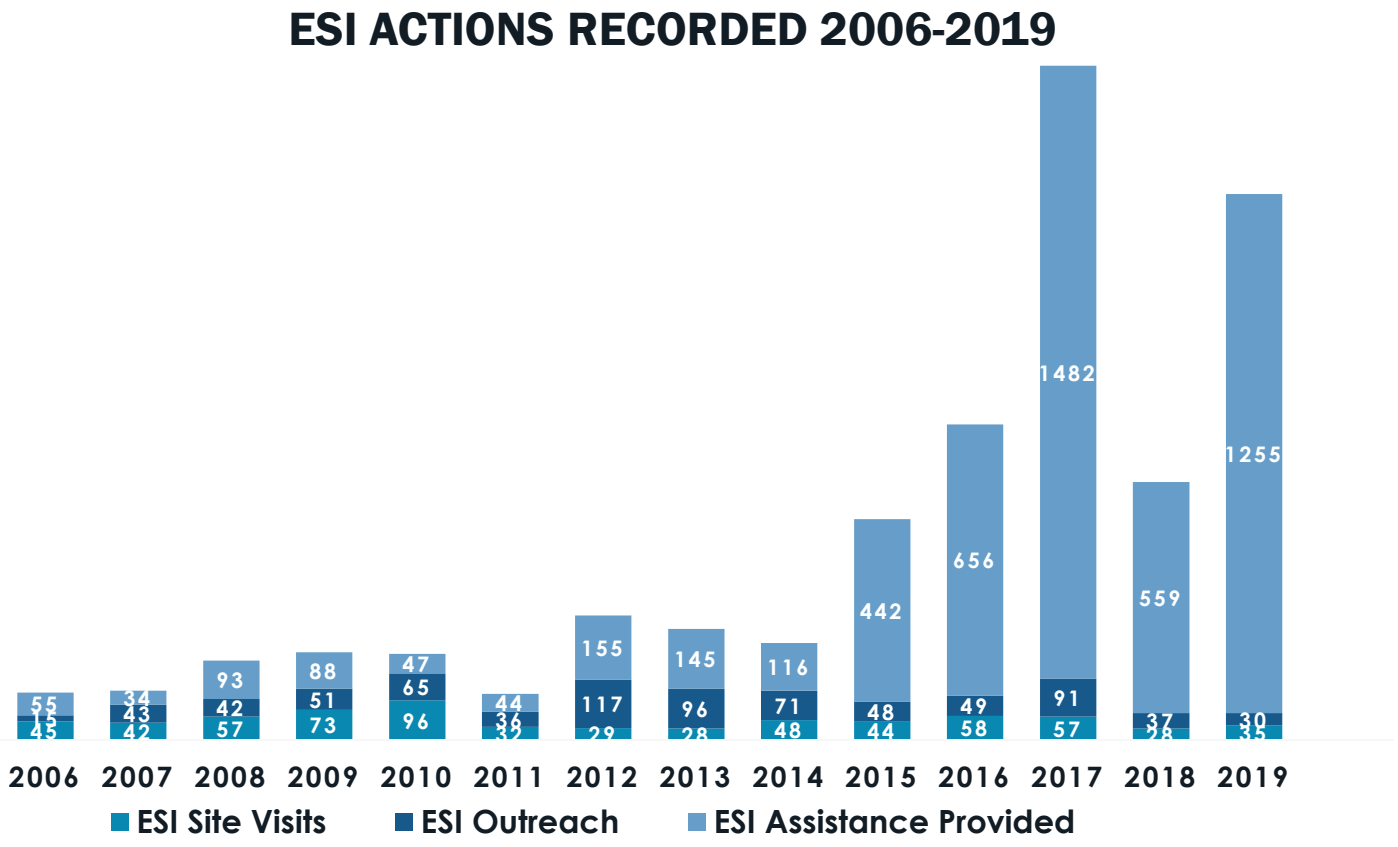
*Indirect not reported in energy reductions

**Category created for compost/mulch related goals

Program Updates

The ESI is administered by the DEQ Division of Environmental Assistance and Customer Service (DEACS). It operates on a limited budget that is funded by a federal grant and appropriations from the N.C. General Assembly. From 2002 through 2005, 560 actions were recorded by employees related to EMS development and assistance. These activities included site visits, presentations, meetings and other technical assistance. See Figure 8 below for a summary of 2006 through 2019 actions. Outreach includes training classes provided by ESI staff, networking events, speaking engagements, booths at various events and other program marketing activities. Site visits are made specifically to ESI or potential ESI member sites. Each new member received a site visit to inform them of program benefits and assistance and to establish a relationship with the facility's coach. Assistance includes information provided through email and phone calls, including an electronic newsletter provided to ESI members. In 2017, the number of email contacts rose dramatically as outreach to members and others related to ESI networking events, annual conference, and newsletters were a focus area. In 2018, the ESI program had fewer staff in place and thus the numbers were lower; however, they began to rise again in 2019 when the open positions were filled.

Figure 8: ESI Actions Recorded 2006-2019



In 2019, ESI staff:

- Arranged and participated in an Environmental Benchmarking event at the N.C. Zoo in Asheboro on composting best practices. This event was open to all ESI members and others interested in the topic. The Zoo presented on their achievements and provided a tour to demonstrate their composting efforts. DEACS staff provided additional information on organics management and DEQ-Division of Waste Management (DWM) staff discussed permitting requirements for composting operations.

- Arranged and participated in an Environmental Benchmarking event at Keihin Carolina Systems Technology (KCST) in Tarboro on energy management and efficiency improvements. This event was open to all ESI members and others interested in the topic. KCST presented on their achievements and provided a tour of their operations to point out areas where these energy projects were implemented.

- Performed verification visits at three Steward applicant facilities. Two went on to achieve Steward recognition, while the third was recognized as a Rising Steward.

- Held the annual ESI Conference at the N.C. Rural Development Center, where members spent two days networking and learning from each other as well as DEACS and other DEQ staff on various environmental topics.

- Participated on the external advisory board for the Raleigh-Durham airport sustainability plan.

- Held the annual Steward Forum where ESI members who have reached the Steward level meet with the DEQ Secretary to discuss any challenges, ideas or upcoming changes that they want to share. This meeting also provides an informal advisory group for DEQ leadership to openly discuss ideas.

- Provided lead auditor training for the ISO 14001:2015 standard for new ESI staff and 18 others from ESI member organizations.

- Provided overview training of the 2015 version of the ISO 14001 EMS standard. This two-day class was open to ESI members as well as others who were interested. Ten people attended.

- Provided on-site ISO 14001:2015 internal auditor training for Thomas Built Buses that was open to other ESI members as well. Sixteen attended, including seven from outside of Thomas Built Buses.

- Arranged and participated in a Hazardous Materials Roundtable event at the N.C. Zoo in Asheboro on performing hazardous waste vendor/transporter due diligence. This event was open to all ESI members and others interested in the topic. Presentations were made by DEQ-DWM Hazardous Waste Section and EPA's Criminal Investigation Division.

- Performed a two-day gap analysis review of Alphagary's environmental management system to assist with conversion from ISO 14001:2004 to ISO 14001:2015.

- Performed five-year renewal verification visits at seven Steward and one Rising Steward facilities.

- Held ceremonies at the newest Environmental Stewards: Pfizer - Sanford and Eaton - Arden

- Presented ESI and DEACS services at Cape Fear Economic Development Council and three DEQ regional offices.

- Participated in the North Carolina recycling summit hosted by ESI member Grifols in Clayton and DEACS Recycling and Materials Management Section. Other ESI Members were also in attendance.

- Held two External Advisory Board meetings to review and make recommendations to the DEQ Secretary on program changes and Steward and Rising Steward applications and renewals.

- Attended and hosted a booth at the N.C. Manufacturers Alliance (NCMA) Energy, Environment, Health, and Safety School; a two-day training event with multiple tracks covering many environmental topics from compliance to sustainability.

- Hosted booths at the Wake County Local Emergency Planning Committee BEST Conference, NCMA Hazardous Waste trainings, and Carolina Star Safety Conference.

- Provided a series of six training modules on environmental management systems specifically based on the ISO 14001:2015 standard. The modules were scheduled one per month beginning in July.

- Presented an ISO 50001 Ready webinar with Advanced Energy and the Waste Reduction Partners (WRP) to encourage organizations to create a cohort for implementing an energy management system. The webinar was open to all ESI members and others interested in the topic. It was also recorded and posted to the ESI and WRP websites.

- Performed six assessments to determine the functional equivalency of member environmental management systems to the ISO 14001:2015 standard for program membership.

- Arranged and participated in a Hazardous Materials Roundtable event at Daimler Trucks North America (DTNA) in Cleveland on the new aerosol can rules and universal waste management. This event was open to all ESI members and others interested in the topic. Presentations were provided by DEQ-DWM Hazardous Waste Section, and DTNA provided tours of their operations.

- Performed two informational visits to potential ESI members and 13 coaching visits to members.

- Attended EPA Pollution Prevention grantee meeting in Denver, CO and toured EPA-RTP campus to learn more about their sustainability efforts.

ESI Staff with 2019 EMS Module Series Attendees

Membership

Using pollution prevention and other innovative approaches, this voluntary program offers benefits and recognition to members for developing and implementing environmental projects to meet and go beyond regulatory requirements.

Any company or organization that operates one or more facilities in North Carolina and whose activities impact the environment is eligible to participate in the ESI. This includes manufacturers, businesses, agribusiness, service providers, government agencies, utilities, schools and nonprofit organizations. Members can enter the program at any of the three tiers: Environmental Partner, Rising Environmental Steward or Environmental Steward. Membership criteria in the ESI varies depending on the tier. In 2012, changes were made to open the Partner level to a wider range of interested organizations while still maintaining the integrity of the program at the Steward and Rising Steward levels.

Criteria

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. In 2012, Partners were given the option to implement measurable goals in lieu of developing an environmental management

system. Additionally, Partners are no longer required to be regulated by a DEQ issued permit to apply. Partner applications may include multiple sites. By the end of 2019, the program had 145 Environmental Partner sites.

To be considered at the Partner level, the following criteria must be met:

- 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 and/or commit to developing, implementing and maintaining an environmental management system based on the ISO 14001 standard or a functionally equivalent model.
- 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, solid and hazardous waste disposal, use of energy and water and any reportable non-compliance events.

The Rising Environmental Steward level is designed for those organizations that have a mature environmental management program. Rising Steward applications must be for a single site. The program had 12 Rising Environ-mental Stewards by Dec. 31, 2019.

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, and must demonstrate improvements to per-formance.
- Demonstrate a mature EMS based on ISO 14001 or a functionally equivalent model. The EMS for the site must be ISO 14001 third-party certified or be reviewed on-site and deemed functionally equivalent by DEQ staff.
- Have current or past regulatory oversight or demonstrate exemplary business and environ-mental practices normally expected of Rising Stewards.
- Demonstrate commitment to meet and go beyond compliance.

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. By year end 2019, the program had 30 Environmental Stewards.

Environmental Steward applicants must meet all Partner and Rising Steward criteria and 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 environmental manage-ment system is integrated into core business functions.
- Agree to be a mentor to Environmental Partner and Rising Environmental Steward participants.

Rising Stewards and Stewards are reassessed after five years 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.

Secretary Regan with 2019 Steward Forum Attendees

Benefits

All levels of ESI members are eligible for the following:

- Technical assistance on developing an environmental management system (EMS), pollution prevention approaches, environmental management and treatment technologies and maintaining compliance with local, state and federal regulations;
- Specialized training;
- Networking opportunities including an annual conference, environmental benchmarking series, and topic-specific roundtables and workshops;
- A listserv open to all ESI members as well as DEQ and Waste Reduction Partner staff to provide answers to questions and examples of best practices;
- Recognition of program participation;
- Use of the program logo for the achieved level;
- A single point of contact within DEQ; and
- Other benefits as deemed appropriate by the DEQ Secretary based on recommendations from the External Advisory Board and the DEQ Internal Workgroup.

Partners and Rising Stewards have the additional benefit of access to Stewards as mentors where appropriate. Environmental Stewards have the following additional benefits:

- Formal public recognition from the Secretary of DEQ that may include an on-site award ceremony, public announcements and press releases.
- Participation in the Steward Forum chaired by the DEQ Secretary.
- Priority membership on the ESI External Advisory Board when appropriate positions are available.

During the annual ESI Conference, facilities accepted into the program at the Environmental Partner level receive a certificate of recognition signed by the DEQ Secretary. Rising Environmental Stewards receive a plaque recognizing their achievement. Renewals at five-year intervals for Rising Stewards and Stewards are also celebrated at the ESI Conference with a variety of recognition items.

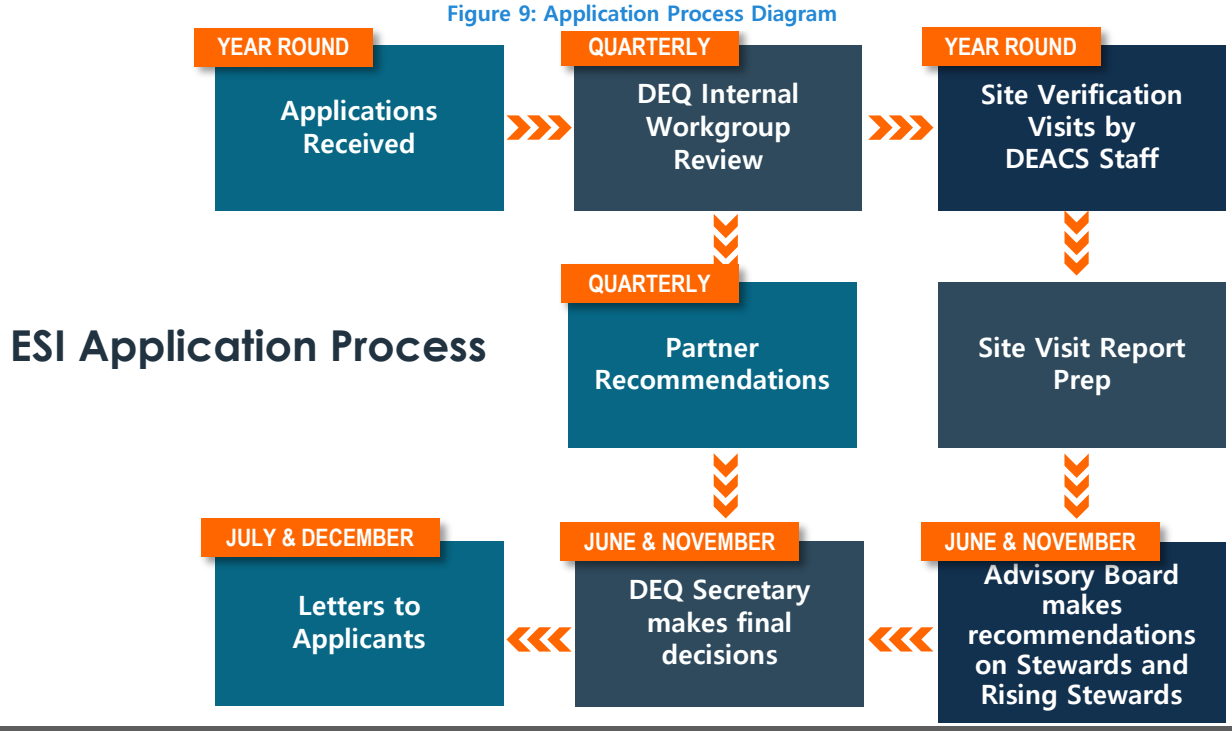
Environmental Stewards accepted into the ESI receive a personal letter signed by the DEQ Secretary. The Secretary also presents Stewards with a large plaque during an on-site ceremony. DEQ highlights members' participation in the ESI program through press releases, the ESI website, newsletters and/or social media posts.

Application Process

Partner applications are accepted year-round and reviewed quarterly by the DEQ Internal Workgroup. In 2012, ESI began accepting Steward and Rising Steward applications year-round as well. The ESI Advisory Board meets twice per year to review applications and site visit reports. While applications at the higher levels are in process, the applicants join the ESI as Partners in order to begin receiving benefits such as newsletters and training notifications.

Following receipt of an application, an environmental compliance check is completed by the ESI Internal Workgroup to determine if the facility has been under environmental criminal indictment or convicted within the last two years, as well as identify any compliance issues (Figure 9).

Figure 9: Application Process Diagram



The DEQ Internal Workgroup reviews all Partner applications and makes a recommendation to the DEQ Secretary regarding acceptance into the program. The DEQ Internal Workgroup reviews Rising Steward and Steward applications to provide regulatory and compliance information to the ESI Advisory Board. The DEQ Internal Workgroup is comprised of representatives (Figure 10) from regulatory and non-regulatory divisions within DEQ.

Figure 10: 2019 DEQ Internal Workgroup Members

Following the compliance review by the Internal Workgroup, the Rising Steward and Steward applications are presented to the ESI Advisory Board.

The DEQ Secretary established a volunteer advisory board to oversee program development and implementation. Membership consists of manufacturers, industries, industry trade groups, environmental and citizen nongovernmental organizations, small businesses, representatives of city and county governments, DEQ representatives and others as deemed appropriate. A DEQ employee, appointed by the Secretary, serves as the board's chairperson.

Whenever possible, Environmental Stewards are given priority for membership for the business, government and at-large seats. Membership on the Advisory Board rotates

Figure 11: 2019 Advisory Board Members

on four-year intervals and is capped at 15 members. The 2019 board is listed in Figure 11.

Rising Steward and Steward applicants 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. Organizations accepted into the program are usually announced in June and December of each year.

Conclusions

The results from the ESI annual report show that an approach that exceeds regulatory requirements can lead to positive impacts for regulated pollutants and non-regulated environmental and economic factors. This DEQ program is unique in its ability to collect environmental data across media, including monetary savings associated with the environmental improvements made. These savings to the financial and environmental bottom line help North Carolina organizations be resilient and promote economic growth. The ESI encourages North Carolina organizations to share their environmental success stories across sectors to provide a better environment for everyone in the state.

2019 Environmental Benchmarking Series Event Hosted by N.C. Zoological Park

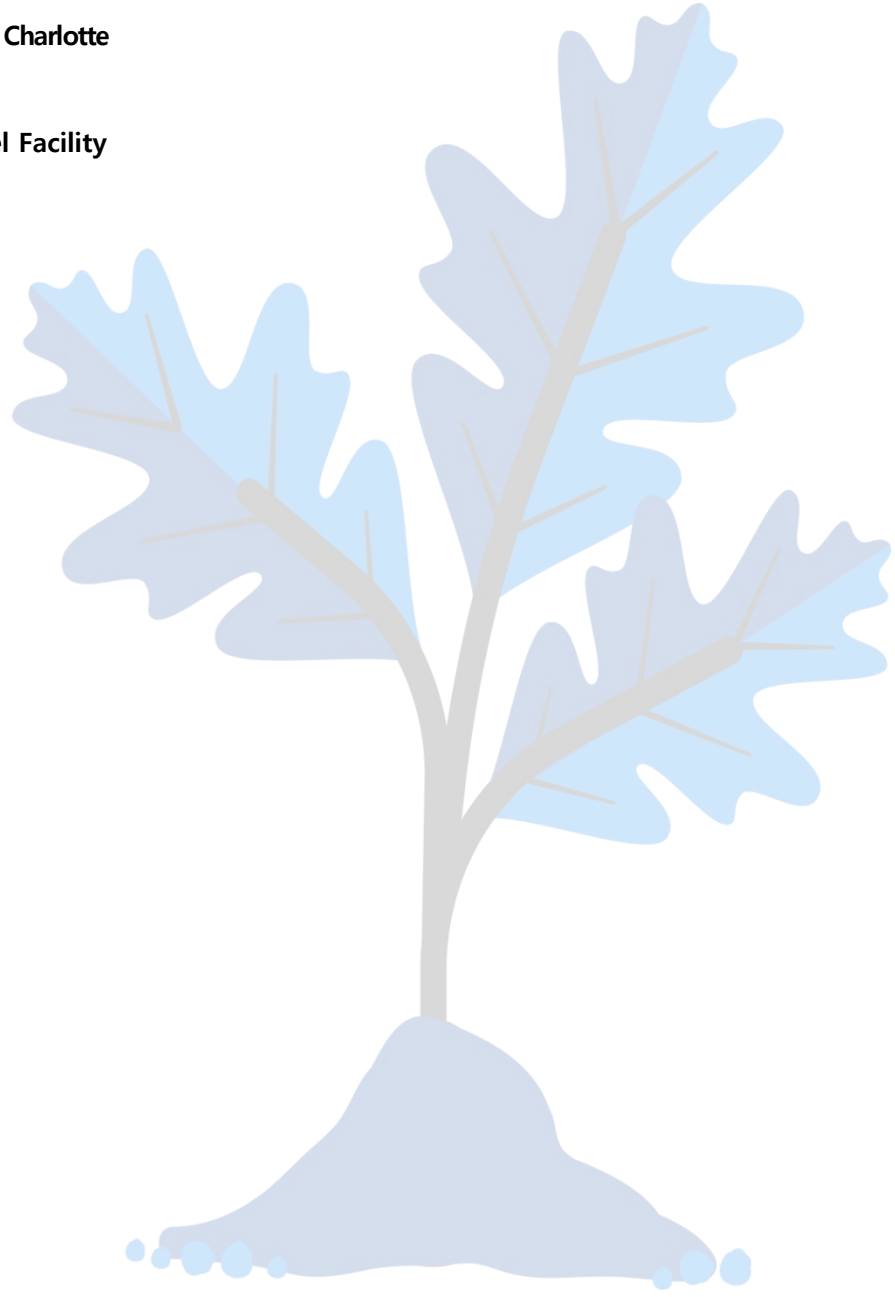
2019 ESI Members

Stewards

- Bridgestone Americas Tire Operations, LLC – Wilson
- Corning Inc. – Wilmington Optical Fiber
- Daimler Trucks North America LLC – Cleveland
- Daimler Trucks North America LLC – Gastonia
- Daimler Trucks North America LLC – Mt. Holly
- Dell Technologies – Apex Manufacturing
- DENSO Manufacturing North Carolina - Statesville Plant
- Eaton Corporation – Arden
- Eaton Corporation – Youngsville Production Operations
- Engineered Sintered Components – Troutman
- Firestone Fibers & Textiles – Kings Mountain & Gastonia
- Fleet Readiness Center East – Cherry Point
- GKN Driveline – Sanford
- Grifols Therapeutics LLC – Clayton
- Hickory Manufacturing and Technology Center, Corning Optical Communications LLC
- John Deere Turf Care – Fuquay-Varina
- Keihin Carolina System Technology – Tarboro
- Leggett & Platt Branch ON64 – High Point Furniture
- N.C. Zoological Park – Asheboro
- Pfizer - Sanford
- Santa Fe Natural Tobacco– Oxford
- Smithfield Packaged Meats Corp – Wilson Facility
- Stanley Black & Decker – Kannapolis DC
- TE Connectivity – Burgess Rd – Greensboro
- TE Connectivity – Pegg Rd – Greensboro
- Thomas Built Buses, Inc. – High Point
- Two Rivers Utilities Wastewater Treatment Division – Gastonia
- Two Rivers Utilities Water Plant - Gastonia
- Uchiyama Manufacturing America LLC – Goldsboro
- U.S. Environmental Protection Agency at RTP

Rising Stewards

- **Ajinomoto Health & Nutrition North America, Inc. – Raleigh**
- **Bridgestone-Bandag, LLC – Oxford**
- **CommScope Greensboro Site**
- **Cree|Wolfspeed – Durham**
- **DENSO Manufacturing North Carolina - Greenville Plant**
- **Eaton Corporation - Raleigh Production Operations**
- **GKN Driveline North America, Inc. – Roxboro Assembly**
- **GKN Sinter Metals – Conover**
- **Hyster-Yale Group – Greenville**
- **Mecklenburg Co. Solid Waste Operations – Charlotte**
- **QORVO, Inc. – Greensboro**
- **Smithfield Fresh Meats Corp. – Tar Heel Facility**



Partners

- Alliance One International Inc. (4)*
- American Emergency Vehicles
- American Snuff Company / Taylor Brothers
- BorgWarner – Asheville
- BorgWarner Thermal Systems – Fletcher
- Burt's Bees Inc. – Morrisville
- Cape Fear Public Utility Authority (8)*
- Cascades Tissue Group – North Carolina Inc. – Rockingham
- Caterpillar – Clayton
- Charlotte-Mecklenburg Schools
- City of Shelby First Broad River Wastewater Treatment and Composting Facility
- City of Shelby Water Treatment Plant
- Continental Automotive - Henderson Plant
- Core Technology - Greensboro
- Corning Newton Cable Plant
- Crown Equipment – Kinston
- CW Wright Construction Company LLC - Currie
- Dominion Energy North Carolina, Inc. (21)*
- Domtar Paper Company, LLC – Plymouth
- Eaton Corporation – Raleigh
- Flowserve, Inc. - Raleigh
- Freudenberg Performance Materials – Durham
- General Electric Aviation – Durham Engine Facility
- Haeco Airframe Services – Greensboro
- Industrial Connections & Solutions LLC – Mebane
- International Paper – Riegelwood Mill
- Kao Specialties Americas, LLC – High Point
- Kewaunee Scientific Corporation
- Leggett & Platt Branch 0548 and 8814*
- Liberty Tire Recycling, LLC (2)*
- Linamar North Carolina - Asheville
- Martin Marietta (58)*
- MATREX – A Division of Leggett & Platt Components Company, Inc. - Greensboro
- Michelin Aircraft Tire Co. – Norwood
- National Institute of Environmental Health Sciences – RTP
- N.C. DOT Ferry Division (9)*
- Piedmont Service Group – Raleigh Office
- Siemens Medical Solutions USA, Inc. – SHS AM NAM SV National Service Headquarters – Cary
- Smithfield Fresh Meats Corp. – Clinton
- Static Control Components – Sanford
- Tarboro Brewing Company
- Two Rivers Utilities Field Operations Division – Gastonia
- Universal Leaf North America U.S., Inc. (2)*
- Water and Sewer Authority of Cabarrus Co. (4)*

*Denotes multi-site Partners

N.C. Department of Environmental Quality

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Cover Photo 1: Employees of Pfizer in Sanford receive Environmental Steward recognition from DEQ Secretary Michael S. Regan