Redefining Public Engagement at the University of Connecticut: Studying the Impact of an Innovative STEM Service Learning Model on the University Community

2023 Community Impacts Study Report

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INTRODUCTION

The *Redefining Public Engagement at the University of Connecticut: Studying the Impact of an Innovative STEM Service Learning Model on the University Community* project, based at the University of Connecticut (UConn), is a collaboration among the Center for Land Use Education and Research (CLEAR), the Neag School of Education, the Center for Environmental Sciences and Engineering (CESE), the Center for Excellence in Teaching and Learning (CETL), and the Connecticut Brownfields Initiative (CBI). Known as the Environment Corps (E-Corps), the primary goals of the project are to (1) enhance, expand, and institutionalize a new model for service learning and public engagement at UConn and (2) study the transformation process and resulting changes in instructional practices, university culture, and community engagement.

The E-Corps project includes three different "corps," each focusing on a different environmental topic: Brownfields Corps (brownfield redevelopment), Climate Corps (climate resilience), and Stormwater Corps (stormwater management). The E-Corps model includes a two-semester sequence of courses primarily for junior and senior undergraduate students. The first semester is a classroom-based, interactive course intended to develop the knowledge and skills students would need to address the environmental issues in their communities. In the second semester, small teams of students work on environmental projects related to the Corps themes in towns across Connecticut.[1,2]

Horizon Research, Inc. (HRI) of Chapel Hill, NC is conducting the external evaluation of E-Corps, which includes both formative and summative aspects. The formative evaluation monitors the quality of project activities, providing feedback on the E-Corps research design in relation to the project's goals. The summative component focuses on examining impacts of E-Corps activities, including the extent to which the project's research findings are supported by evidence.

During the fifth year of the project, HRI conducted a study on the impact of E-Corps on the partner communities, which serves as a companion study to the previously reported student impact study.[3] The study involved administering a survey to the community contacts on record

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[1] Students typically enroll in only one E-Corps course although some have taken multiple courses. The first semester is required to enroll in the second practicum semester, but not all students choose to participate in the practicum semester for various reasons (e.g., because they are graduating seniors).

[2] Students participating in the Brownfields Corps classroom-based course also carry out community projects.

[3] Pasley, J.D. (2022). Redefining Public Engagement at the University of Connecticut Studying the Impact of an Innovative STEM Service Learning Model on the University Community: 2022 Impacts Study Report. Horizon Research, Inc.

for each E-Corps student project between the project's genesis and spring 2022, then conducting follow-up interviews with a subset of survey respondents who agreed to be contacted for an interview. This report describes the study and its findings.

STUDY DESCRIPTION

In order to examine the community impacts of E-Corps, local representatives familiar with the projects students conducted were asked to complete a survey.[4] Specifically, in the spring of 2023, community representatives who worked with E-Corps students from 2018 through spring 2022 were contacted by email to complete a survey about the student project. (A copy of the survey is located in Appendix A.) A subset of survey respondents, who reported their associated project had been used in the community, completed a follow-up interview in order to collect more in-depth information about the impacts of E-Corps.

A total of 32 community representatives, familiar with 32 distinct E-Corps projects, completed the survey.[5,6] Table 1 presents the number of community representatives who completed the survey by Corps and year of participation. A total of six community representatives participated in the interview.[7]

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[4] To ensure the projects had sufficient time since completion to have an impact, only projects from 2018 through spring 2022 were included in the sample.

[5] E-Corps instructors provided descriptions of projects conducted in Connecticut communities along with contact information for representatives from partner towns and organizations who would be most familiar with the projects. Of the 65 contacts provided, 7 were removed from the sample due to undeliverable email addresses. A total of 58 invitations to complete the survey were sent, indicating a 53 percent response rate. Because the overall response rate is low, results may not be representative and should be interpreted with caution.

[6] One community representative worked with E-Corps students on two different projects in different years.

[7] Nine respondents initially agreed to be contacted for a follow-up interview. One of these withdrew for personal reasons, and two others did not response to multiple invitations. Of the 6 interviewees, 4 represented Climate Corps, 1 represented Brownfields Corps, and 1 represented Stormwater Corps.

Table 1
Characteristics of Respondents (N = 32)

	Number of Respondents	Percent of Respondents
Respondents by Corps		
Brownfields	5	16
Climate	18	55
Stormwater	9	28
Respondents by Year of Participation		
2017–18	2	6
2018–19	0	0
2019–20	10	31
2020–21	16	50
2021–22	4	13

FINDINGS

As mentioned previously, the second-semester E-Corps practicum consists of a field-based experience where students engage with community representatives on environmental challenges. Examples of Brownfields Corps projects include assessments of brownfield cleanup alternatives, evaluation of redevelopment options for brownfield sites, and creation of brownfield inventories that towns can use for planning purposes. Climate Corps projects have involved vulnerability assessments for town planning, as well as runoff reduction and resilience plans for local parks and beaches. Finally, Stormwater Corps students develop runoff reduction plans, outlining expected impacts of stormwater management practices.

The community representative survey and follow-up interview examined the extent to which the projects were used since their completion, and if they were used, how they impacted the community. In addition, factors that facilitated and impeded the use of the project were explored. Finally, the interviewed community representatives were asked to reflect on their work with E-Corps, i.e., the benefits, drawbacks, and likelihood they would continue their involvement with E-Corps in the future. The data presented in this section of the report come from survey responses and interviews.

Use of E-Corps Student Projects

Survey respondents were asked whether the student project associated with the town or organization they represented had been used in any way since its completion (e.g., data used to write proposal to address environmental issues, implementation of recommendations made). As can be seen in Table 2, the majority of respondents indicated that projects had been used.

Table 2
E-Corps Projects Used Since Completion

	Percent of Survey Respondents (N = 32)
Yes	63
No	28
Unsure	9

Survey respondents and interviewees who reported the project had been used were asked to provide a description of how. Because the three Corps and the student projects themselves are unique, the usages described vary greatly. Community partners who worked with the Brownfields Corps predominantly reported using data collected through student projects. In the words of two:

> *An EPA [Environmental Protection Agency] Targeted Brownfields Assessment contractor utilized some of the UConn students' information obtained while investigating the property.* (Survey respondent)

> *While the individual [proposal] created through this [project] was not awarded, the data was made available and used to supplement subsequent direct applications to the EPA and [Connecticut Department of Economic Community Development].* (Survey respondent)

Community representatives working with Climate Corps students described projects being used in a variety of ways, including disseminating the final products to the community, using the projects as evidence in grant proposals, and building upon student projects to further work toward climate resilience, as illustrated in the following quotes:

> *A brochure was created [by Climate Corps students] to raise awareness and hopefully spur small business owners to act, by creating a plan. Since then, the pandemic proved the importance of such a plan. A pilot program was undertaken in the [city]. Beginning in 2022, a grant program, funded by Connecticut's Department of Economic and Community Development, grants businesses $500 towards their general business insurance upon completion of the disaster plan. The brochure was used as part of both the pilot program and the basis for the grant.* (Survey respondent)

> *We shared [the student's final project] on our website at the time. We shared it with our beach federation and our beach associations....... We provided a piece of paper, basically a one-page information page with a QR code on it that they could hang in their cottages, and as transient vacationers came in and came out each week, it would be there for them. "Welcome to [town]. In the event of an emergency situation,.......here's important information that you need to know." It was connected to a QR code and a web link, and*

they could just use the QR code on their phone to be able to search the list of what they're looking for. (Interviewee)

(1) Results of project were used to guide follow-up biological surveys at locations identified as potential vernal pools. The surveys took place in the spring of 2022 and collected data used to confirm the presence of vernal pool ecosystems. The surveys were undertaken as a citizen science initiative with a team of volunteers from the town who were trained and supported by a herpetologist. (2) The original maps were then updated with information collected during the surveys, and the final vernal pool map/database has been integrated within a broader Natural Resource Inventory (NRI) that the town's Conservation Commission is undertaking in preparation for a revision to the town's Plan of Conservation and Development (due in 2025). (3) The Conservation Commission has completed the NRI and is currently in the process of analyzing the maps/data (incl. the vernal pool information) to formulate recommendations including updating the geographic scope of existing open space corridors, identifying priority parcels for conservation efforts (e.g., easements, potential purchase, best management/development practices), and potential updates to inland wetlands and planning and zoning regulations. (Survey respondent)

Survey respondents described how the data collected and recommendations made by Stormwater Corps students had been used to implement, plan for, and fund site-specific stormwater reduction projects. In addition, one Stormwater Corps project was used to supplement the students' learning at a local high school. Three community representatives stated:

A rain garden was installed at [a park] as a result of the project, and funds have been secured to install our first pervious asphalt parking lot at [another park]. (Survey respondent)

The [city] used the data and recommendations made by the Stormwater Corps to apply for several grants in an effort to install several of the Green Infrastructure recommendations made. (Survey respondent)

The high school students used the identified area and solutions as a study topic in the science class, and a nearby area was planted where there was previously ponding/concrete as a student project. (Survey respondent)

The nine survey respondents who reported that the project had not been used in any way since completion were asked why. As can be seen in Table 3, about half indicated lack of funds and lack of time were barriers. Only two reported concerns with the project's quality, and one indicated that the project topic was of low priority to the community. Lastly, one who responded "other" further explained that, though the project had not been used yet, they intended to use it in the future.

Table 3
Reasons E-Corps Student Work Has Not Been Used

	Number of Survey Respondents‡ (N = 9)
Lack of funds	5
Lack of time	4
Concern about the quality of the project	2
Project topic is low priority to our community	1
Other	1

‡ Numbers add up to more than nine because respondents could choose more than one category.

To collect additional information on reasons for why E-Corps student projects are used, interviewed community representatives were asked what factors inhibited and facilitated the use of the E-Corps student project. Interviewees cited several factors that enabled the use and subsequent impact of the E-Corps student projects, including supplemental funding or assistance obtained through other programs/organizations, the high quality and positive attitude of the student, high levels of community engagement, and availability of UConn's GIS technology and expertise. The following quotes are illustrative:

[The property] was left blighted and vacant and had been an eyesore and a problem in the neighborhood and for the whole community. The neighbors have been very active trying to get their attention and then the city's attention to try and demand or do something about it or purchase the park ....One of the members in particular was extremely active, and she is the one who took the initiative to call someone from the EPA in the Environmental Justice Division and tell this story about how this field has been blighted and an eyesore and all the houses are so close together, nobody has yards, and all the kids have got to play in the street because there's nowhere to play. Someone there listened and cared enough to contact the Brownfields Remediation Division, and that is how we ended up with a free [EPA] Targeted Brownfields Assessment.

The student was excellent. The fact that the student was exceptionally organized, ambitious, and pretty well in tune with her project definitely enabled project success.

The [E-Corps] students also seemed to be eager to learn. They really took it on themselves to learn a little bit about vernal pools and dive into the mapping process. I wasn't sure how well they'd take to that, because that's a bit of an expertise, analyzing Google Maps and satellite imagery and vernal pool signatures and things like that. But they took right to it, and they were eager to learn it, and they worked well in that process . . . and then the actual workload that they helped us achieve—because we're all volunteers [on this commission]—that really added a lot to us.

Because we're a small town, we don't have—unlike larger towns which often have their own internal GIS capacity and people to maintain those systems—we don't have that. So we were relying on the [E-Corps] program and the students and faculty to be able to provide the higher-level calculations and access to computer technology versions that we can't maintain the infrastructure for . . . and then obviously the assistance with the expertise on helping to map and incorporate that within our data layer.

Perhaps unsurprisingly, because interviews were conducted only with community partners who had used the E-Corps projects in some way, interviewees described relatively few barriers. Two mentioned that connecting with the E-Corps student(s) was more difficult than they would like; one who supervised a Stormwater Corps student in 2021 said, "It was during COVID, so it was a little hard to interact as much as I think I wanted to." Another stated that due to geographic distance between the Climate Corps student and the town, "We didn't get to meet with her in person very often, and it was hard for her to take the time to come down." However, both reported overcoming this challenge by communicating over email and video conferencing. Another interviewee reported that their Climate Corps student's project was inhibited by the company hired to implement it fully. Specifically, the company resisted one proposed step, which was rooted in best practices and would yield the best results but was difficult and costly. The interviewee described how the community used the Climate Corps project's recommendations to continue to push against this resistance:

That first step [in the student's proposed plan] of putting bare rocks out into the water, we've kind of gone back and forth with, . . . but the engineers are saying, "Let's try it without it. We don't think you need it. It's not that big an area." Whatever. So there was a bit of, "Wait a minute, we thought that was what was recommended........We know that might be the best. Why are you saying we shouldn't do that?" And it was because [the student] put the bug in our ear that we should put rocks out there, and that made a lot of sense.

Impacts of E-Corps Student Projects on Communities

On the survey, community partner representatives who reported that projects had been used were presented with a list of possible impacts or contributions that E-Corps projects could potentially have on their communities and were asked whether that project had each type of impact, or any additional impacts not listed. Results can be seen in Table 4. The most common impacts reported by the vast majority of respondents were that the projects had supported/contributed to the town's/organization's (1) plans or policies (95 percent) and (2) projects such as research and mapping (90 percent). In addition, about three-quarters or more indicated that the project improved or expanded public outreach and awareness and addressed a previously unaddressed environmental problem or need. About two-thirds of respondents reported the project had

supported grant applications, and somewhat more than a third indicated it had helped the town/organization comply with federal or state regulations and had improved town infrastructure in some way.

Table 4
Survey Respondents Reporting Various
Types of Impacts/Contributions of E-Corps Projects

	Percent of Survey Respondents[‡] (N = 20)
Support/contribute to town/organization plans or policies	95
Support/contribute to town/organization projects (with data, research, mapping, etc.)	90
Improve/expand public outreach and awareness	80
Address a previously unaddressed environmental problem or need	74
Support town/organization grant applications	61
Help town/organization to comply with federal or state regulations	39
Improve town infrastructure (e.g., new construction, conservation practices, new signage, green stormwater infrastructure installations, etc.)	37
Other	33

[‡] Percentages add to more than 100 because respondents could choose more than one category.

For each impact/contribution identified, survey respondents and interviewees were asked to provide more detail. Responses illustrate the breadth and depth of the impacts of the E-Corps projects on partner communities. For example, nearly all survey respondents reported that the E-Corps project had supported or contributed to town/organization plans or policies, but the types of plans and policies varied, covering such topics as conservation, economic development, emergency preparedness, and natural resource management. Said three:

> *The region's Comprehensive Economic Development Strategy was informed by the results of the [student's] outreach.* (Climate Corps survey respondent)

> *Reduced mowing along the tidal wetland edge has been incorporated into the beach management practices.* (Climate Corps survey respondent)

> *[The project is directly] associated with our planned revisions to the 2025 Plan of Conservation Development, which is a big thing because that document is the guiding document for the next 10 years for the town. It guides on where we might look at open space purchases. It guides how we might structure regulations and zoning and things like that. So it's an important piece, and an important thing to remember in that to think about is typically, towns will hire consultants to do a lot of that work. And that's what we did back in 2015....... Now you have, actually, the town is doing the lion's share of that. We are working through the Conservation Commission through projects like [the E-Corps student project] to collect our own information, to have better detail and have maps that we understand better that aren't being done by a consultant. We will interface*

with a consultant that's been hired, the town planner, which is now on board with our information. But we'll now be prepared to use the consultant in a more strategic way and direct the consultant because we've been focused on gathering this information. (Climate Corps interviewee)

Similarly, the vast majority of survey respondents reported that the E-Corps projects supported town projects with research, data collection, and mapping. However, representatives' descriptions revealed numerous unique projects and means of support, ranging from collecting field data on environmental conditions at project sites, to updating existing datasets, to sharing specialized knowledge necessary for the town to meet its goals. As four explained:

> *The mapping and data collection about soils, exposure, and local environment helped determine how, what, and where to replant or introduce other plantings.* (Climate Corps survey respondent)

> *[The project] created more emphasis on our location of seasonal cottages in relation to the new FEMA floodplains. FEMA changed their floodplain maps at the same time [as the E-Corps was working with the town], so we were able to help delineate exactly which cottages were now in the new floodplains.* (Climate Corps interviewee)

> *They [E-Corps students and professors] have been really supportive and helpful, especially in the environmental justice arena where they had knowledge and they had the tools, the various data tools that are available that are pretty complicated. They were able to navigate that, because they knew it, and I didn't have to spend as much time.* (Brownfields Corps interviewee)

> *The assessment was used as part of a larger effort by the Town to obtain a silver certification for the [Town] through the Sustainable CT initiative and was helpful to focus in on the top hazards and issues areas that the Town should have on its radar for future resiliency projects.* (Climate corps survey respondent)

Description of impacts on outreach and awareness of the community's environmental issues fell more neatly into subcategories. First, several E-Corps produced products specifically designed for the public's use, including brochures, websites, and workshops. For example:

> *Though [E-Corps students] did not, unfortunately, get a lot of people to engage in the survey [conducted as part of the E-Corps project], people definitely noticed them and have asked—we've done other activities related to vulnerability and resilience, and they have asked, "Is this related to that kid that we saw on the corner?" So I thought that was actually really positive, that someone kind of connected the dots. Half of outreach is just getting the idea out there initially. Even if you don't get responses, it gets people starting to think about it. I think that was probably the biggest contribution is that the student*

went to areas that don't necessarily feel like they get that attention a lot. (Climate Corps interviewee)

We did a safety program for shoreline occupants, and I wanted to focus on my transient populations. [Town name] is a beachfront community on Long Island Sound and Connecticut River, and we have over 700 cottages down there. So during the summer, those 700 cottages times approximately four people per cottage on an average changes that 2800 people changes out every seven days. So being able to give those transient populations the opportunity to, in the event of a coastal or an all-hazard condition, being able to know where to go, what to do, where to go for additional information, where to evacuate to, and we expanded it out to where's the closest medical center, where's the closest veterinary center? Provide broad information for somebody who just came into the community for a short time. (Climate Corps interviewee)

It enabled us to actually talk about a project that we have in the town. And I don't want to undersell that, because again, in small towns, it's not often where you have commissions take on large projects like that. And so it enabled us to come out and say, "Hey, we are gearing up for this 2025 plan of conservation development. We have an active project," and also have the cachet of having a project that was a joint project between two commissions plus working with a respected institution, the University of Connecticut. So it gave us good talking points to talk to the public and start to build awareness about the plan of conservation development, about the importance of vernal pools, about the process of town committees. And in fact, it actually helped us to recruit members for our commission, . . . so it enabled us to get out to the public about the role of volunteers and commissions and the importance of that and how you can contribute to active projects. (Climate Corps interviewee)

In addition to engaging the public, projects increased awareness and knowledge within the town government or organization itself, particularly for projects in which a committee member or other non-professional community member was the student's main contact for the project, or projects that lay at the intersection of multiple departments or governing bodies. As four explained:

As part of this assessment [project], our student interacted with several municipal departments, staff, and commission members as part of the background work for the preparation of the final work product. This work raised the profile of the issue of climate change and the potential future impacts to facilities and resources in the community. Additionally, the work has been posted on the Sustainable CT website as part of the Town's Certification Report and is therefore available for ongoing review and discussion. (Climate Corps survey respondent)

[The project] increased awareness of some town leaders on issues and potential approaches. It helped "set the table" for larger discussions. (Climate Corps survey respondent)

I did outreach to the other departments in town to have them involved with the projects and the [E-Corps] students. As I said, the Board of Education has their own properties, so that facilities manager was introduced to what the students were doing and their outcome report as well as our own facilities manager. And I think they had outreach to our public parks and rec department and things like that. So it definitely helped remind people like, "Hey, we've got to do some of these things," and what they're for. (Stormwater Corps interviewee)

In discussing how E-Corps projects addressed a previously unaddressed environmental need in the community, some representatives indicated that the projects gave time and effort to initiatives they would not have resources to do themselves, or to do as thoroughly as the students could. Said three:

It would've been a work effort for us to kind of do the same program that [the E-Corps students] did, in terms of spending the time coming up with designs and calculations for what kind of stormwater benefit you were getting out of these projects. So unless we made a concerted effort here in the engineering department, we wouldn't have had that. (Stormwater Corps interviewee)

Small businesses in the region seemed, on average, not to think about the repercussions of a natural disaster or how they could mitigate losses by getting back to businesses efficiently. The brochure and map [developed by E-Corps students] helped [organization] staff and local economic development staff in the towns (starting with the pilot in the [City]) engage small businesses. (Climate Corps survey respondent)

I was spending a lot of time going through Connecticut ECO [Environmental Conditions Online, a publicly accessible GIS platform] and seeing what I could pull, . . . and I kept wrestling with the vernal pool one........ I had put it on the back burner because it was a large undertaking, and absent the GIS horsepower, I did not think we could do.......the conservation zones. I just can't do that. So my gut is that—probably not—I don't know whether I would've attempted to map just potential pools and not do conservation zones and just had that as a layer and left it at that. That's possible, but we certainly wouldn't have had it at the level it's at, and we might not have had it at all. (Climate Corps interviewee)

Many more said that the student projects revealed environmental needs the town or organization had not yet identified, which gave them directions for future work. In the words of three:

Some of the projects presented were not on our radar. This project brought more "low-hanging fruit" to our attention. (Stormwater Corps interviewee)

The project identified issues such as the heat index and the future impacts that are anticipated to the town's agricultural producers, which had not been previously discussed. (Climate Corps survey respondent)

No one had studied our site before this student did. It paved the way to share her research and showed to our community that there is a problem worth addressing. (Climate Corps survey respondent)

Related to the contribution of E-Corps projects to grant applications, community representatives described (1) using recommendations generated by E-Corps students to identify fundable projects, (2) applying for grants to fund implementation and/or continuation of student projects, and (3) using student projects (both content from reports and the credibility of UConn's connection to the project) to support grant applications. For example:

[The E-Corps project] gives a basis for applying for grants, as [the funding agencies] often require conceptual plans and technical information prior—makes it more competitive. (Stormwater Corps interviewee)

Subsequent applications were applied for that reviewed the data and efforts of this project. (Brownfields Corps survey respondent)

I was applying for EPA and [Connecticut Department of Economic Community Development] brownfields grants and was not successful, but I tried a few times for that particular project. Then all of a sudden, the stars aligned, and everything came together, and we had that [donation to purchase the property], the UConn students and the E-Corps, Connecticut Brownfield Initiative support, the EPA's Targeted Brownfield Assessments. ...... With the professors at UConn and the students' help, we were able to tell that story in the application well enough to get accepted for the cleanup funds. And it was a total of $615,000. (Brownfields Corps interviewee)

We were able to cite the [E-Corps] student's research and include an aerial map she made in our successful National Fish and Wildlife Foundation Coastal Emergency Resilience grant application. (Climate Corps survey respondent)

While we have not applied for any grant funding for these projects, the projects and supporting data will help with any future grant applications. (Stormwater Corps interviewee)

Survey respondents and interviews described a number of ways E-Corps projects helped their town or organization meet regulatory requirements. Multiple community representatives who

worked with Stormwater Corps students described how the projects helped reduce runoff to comply with municipal permits. Others described regulatory incentives and recommendations met by the E-Corps projects. As four explained:

> *It allowed us to reduce [directly connected impervious areas] in compliance with our [Municipal Separate Storm Sewer System] permit and is providing water quality improvement to stormwater from a parking lot that discharges to the nearby [river]. The project also gave us several other projects to implement in the future for [the same] compliance.* (Stormwater Corps interviewee)

> *Our [Municipal Separate Storm Sewer System] disconnection requirements were met in the last reporting year, which includes the contribution by the Stormwater Corps project* (Stormwater Corps interviewee)

> *State and federal regulators are encouraging the use of nature-based solutions to mitigate coastal erosion. Our Climate Corps students' recommendations were for that exact same thing: a living shoreline design project.* (Climate Corps survey respondent)

> *[The project] helped check a box on our Community Rating System (CRS). FEMA has the CRS system for municipalities that . . . would allow FEMA to reduce a percentage [of the] cost of coastal flood insurance. So if . . . you're paying flood insurance and that flood insurance is at X-teen thousand a year, with the Community Rating System program, if the town completes it and we meet certain criteria of FEMA's evaluation of the CRS system, now that percentage that the property owner is paying for his flood insurance would be reduced by five, seven, eight percent. So this [E-Corps project] was another tool that was put in place to help improve our Community Rating System. It checked the box for community notifications and alerting.* (Climate Corps interviewee)

Similarly, impacts on town infrastructure (e.g., new construction, conservation practices implemented, new signage, green stormwater infrastructure installations) were identified by community representatives across the three Corps. It was not surprising that this impact was cited by multiple community representatives associated with Stormwater Corps projects, as these projects tended to focus on stormwater infrastructure. In the words of three:

> *New green infrastructure was constructed in a frequently used Town park, helping to capture and treat [stormwater runoff from] multiple tennis courts.* (Stormwater Corps survey respondent)

> *We now have a beautiful functioning rain garden adjacent to a parking lot in one of our highly used parks in town.* (Stormwater Corps survey respondent)

Since completion of the [E-Corps report], the Town has constructed new bathroom facilities served by sewer which are mobile and can be removed to higher ground. The access path to the beach has been realigned to allow for marsh migration. Addressing the pre-existing on-site septic fields and relocating the path away from tidal wetlands were some of the recommendations supported in the report. (Climate Corps survey respondent)

Finally, respondents were asked whether there were any additional impacts or contributions made by the E-Corps project and had the opportunity to expand upon these in open-ended survey questions and (when applicable) interviews. A few of the "other" responses indicated that the project increased their community's excitement and energy for the work, while another described the outcome of the community developing a greater professional network as a result of the project. Finally, one representative noted the impact of the project on the students themselves. As four explained:

The project—and the Climate Corps participant—brought passion and excitement to all partners working on climate planning in the City. (Climate Corps survey respondent)

It gave our community hope that a solution might exist—that we can take action, not just wait and watch our beautiful shoreline wash away. The idea from our student's project coming from a young engineer raised awareness that there is another type of engineer: one working with and for nature. (Climate Corps survey respondent)

The participation [in E-Corps] led to more and greater connections and relationships [between the town and] the brownfields industry. (Brownfields Corps survey respondent)

Overall, I think this initiative gives a positive and real-world experience to students who are interested in government work. This [E-Corps] student was ultimately hired by [the organization] in our technical services division and has been a great addition to our team. The Climate Corps initiative is a win-win for the student and society as a whole. (Climate Corps survey respondent)

Interviewees' Overall Perceptions of Working With E-Corps

Although the survey focused exclusively on E-Corps student projects, interviews included additional questions about the community partners' perceptions of the overall quality and impacts of working with the E-Corps program. Interviewees shared about the benefits and drawbacks of working with the E-Corps and ways in which it impacted the town or organization's capacity for environmental problem solving. They also discussed their likelihood of working with the E-Corps again or recommending that others do so.

Overall, interviewees had a very positive view of partnering with E-Corps to address environmental issues. None could think of any drawbacks; all described multiple benefits. Nearly all reported that working with E-Corps raised awareness (for the representatives and/or their communities at large) of how partnerships can make progress solving community problems and that it increased their professional network. Additionally, representatives reported becoming more aware of, and thus likely to seek out, the type of assistance provided by E-Corps. In the words of three:

> *Just the feel-good thing, knowing that there were so many different partners—one, of course, being UConn. I've used that and expressed this so many times to the mayor, to the city council when I've had to go before city council; I've written reports; it was in the applications; we did the presentation at an EPA conference ....It's been helpful to show that nobody's an island of itself, that it takes the village. It's a perfect example. The kids in the [E-Corps] program were definitely part of the big picture.* (Brownfields Corps interviewee)

> *[E-Corps is] part of that eyeopener of what small towns and commissions can do. And realizing that—just look around! There's a world of resources out there, and it doesn't necessarily take a lot of funding to do it. I mean, we did this with basically no funding. . . It didn't cost us anything. We didn't have to buy any software. We didn't have to do anything.* (Climate Corps interviewee)

> *I think we realize we can tap a resource with our local or regional colleges and try and see if there's some opportunities to do similar type projects. Actually, my assistant engineer just reached out to his alma mater for another stormwater project that he thinks he can get some student help on. So I think it's a great avenue for some help, and the students gain some experience and we gain some usually free extra hands or minds to help us with some compliance or projects too.* (Stormwater Corps interviewee)

Interviewees also described the mutual benefits received by both the students and the communities learning and working together. The concept of mentoring and preparing the next generation of environmental professionals came up frequently, as did the benefit of having the students' fresh perspectives. Said three:

> *[E-Corps is] certainly going to be a benefit to the students and to the community at large for that. Getting college students involved in real-world situations and getting them the experience is key to having better students and better citizens and future colleagues. There is no drawback.* (Brownfields Corps interviewee)

> *I think it's great to have an E-Corps that gives students the opportunity to work in the real world, so to speak, and to have some real-life projects to work on and also to work with other agencies in the state, particularly whether it's local or state, and understand*

the public impact of some projects........Definitely, we [the town] have a benefit because we get to interact with [the E-Corps students] and hear about what they're doing. I was in engineering school a long time ago, so—! And then we got a great report and some great ideas out of them with specific projects developed. So I think it's a symbiotic relationship for both them and us. (Stormwater Corps interviewee)

I think giving students a real-life experience in environmental or climate planning and implementation [is good] because they're going to be the next generation that tries to fix it. So having that real-life experience I think is fantastic for them and us........Just having a fresh view, an outsider's view that's still being guided by their academic advisors, so it's a focused project, but they have at the same time a lot of fresh and new ideas, so it's kind of a nice combo in that they're not completely pie-in-the-sky, but they're definitely more creative with their potential solutions than we can sometimes be. (Climate Corps interviewee)

When asked if they would work with the E-Corps on another environmental problem in their community, representatives unanimously said they would. As one Climate Corps project representative said, "It was a good project, and if the opportunity comes up again for me and the town to be able to participate in it again, I'd be all over it." Interviewees also unanimously reported that they would recommend working with the E-Corps to others. Two summed up their reasoning like so:

I would. I mean, they're easy to work with ...... and when this opportunity became available using the UConn students, it worked out well all the way around. We had a good interface. We had good participation on their end. We were able to do a lot in a short period of time of that grant window or that project window. (Climate Corps interviewee)

As a town engineer in a small town—in most engineering departments in any of the towns—you're tasked with so many different things and have so many projects underway or things you know need to get done that you don't have the time for that [kind of project done by the student]. This was an easy way to make you focus and get some other brains focused on an issue you have to deal with and get some real results out of it. And we're usually budget constrained, so we didn't have to pay anybody to get some good ideas and good projects. (Stormwater Corps interviewee)

One interviewee described plans to go beyond recommending working with E-Corps to putting forth E-Corps as a model for community action toward environmental goals. In their words:

There are many towns like us in [town name] that are small towns that lack that capacity that we lack as well, that aren't aware of, "You can do this, and your commissions can take this on, and there are roles to do this, and there are partners that can be had." So

hopefully I'll put something together for that [Connecticut Association of Conservation and the Wetland Commissions] meeting and promote some of the opportunities that are out there. Because in Connecticut, if we're going to make environmental change, it happens town by town. That's really where it occurs. We have 169 municipalities and they all, through their own commissions, that's where a lot of the work sort happens, the decisions are made on land use. So it's important to get the word out to towns. (Climate Corps interviewee)

SUMMARY

Findings from the study examining the impact of E-Corps on communities participating between the fall of 2018 and the spring of 2022 indicate that the program had impacted communities in a variety of areas. The majority of survey respondents reported that E-Corps projects had been used since their completion, including the use of the final products to (1) secure additional funding, (2) drive the implementation of community projects, and (3) to catalyze the environmental work in the community. Almost all community representatives, who reported the project in their community had been used, indicated that it had contributed to or supported community plans, policies, and projects. In addition, most indicated that the E-Corps projects improved or expanded public outreach and awareness and that they addressed a previously unaddressed environmental problem or need.

In interviews, community representatives expressed an overall positive view of partnering with E-Corps to address environmental issues. Nearly all reported that working with E-Corps raised awareness (for the representatives and/or their communities at large) of how partnerships can make progress solving community problems and that it increased their professional network. They also reported becoming more aware of, and thus likely to seek out, the type of assistance provided by E-Corps. Additionally, interviewees described the benefits of E-Corps for both the students and the communities learning and working together. Finally, all interviewees indicated that they would work with E-Corps in the future if they had the opportunity.

APPENDIX

E-CORPS COMMUNITY IMPACT STUDY

(Note: Community representatives who worked with multiple E-Corps projects responded to the following survey items for each project with which they worked.)

This survey is for individuals familiar with E-Corps projects conducted in local communities.

Purpose
The purpose of this survey is to learn about the impacts of E-Corps projects on communities.

Procedures
If you decide to participate, you will be asked to complete a short survey. The survey should take about 10 minutes to complete. Your responses will never be reported with your name or any other identifying information attached.

Potential Risks
We anticipate no more than minimal risk associated with completing this survey.

Potential Benefits
Participants who complete the survey may not directly benefit from participation, but the data may lead to improved experiences for future E-Corps participants.

Confidentiality
The following procedures will be followed to keep your personal information confidential in this study. The data (i.e., survey responses) provided by you will be kept under a code number rather than by name. All data collected in this study will be stored in the cloud. Data will be encrypted in transit and at rest, and access will be protected via multi-factor authentication. The data from the surveys will be used for the external evaluation. Only the external evaluators from Horizon Research, Inc. (HRI) will have access to identifiable survey data. Your name and any other facts that might point to you will not appear when results of this survey are presented or published.

Costs to You
Beyond the time you spend participating in the study, there will be no additional costs to you.

Subject Rights
Your participation is voluntary. You do not have to complete this survey if you do not want to. You have the right to change your mind and stop the survey at any time without giving any reason.

Questions about the Survey or Your Rights as a Research Subject
If you have any questions about the survey, you may contact Sarah Safley, the study manager

(s.safley@horizon-research.com), or Joan Pasley, the evaluation lead (jpasley@horizon-research.com). If you have any questions about your rights as a research subject, you may contact Gretchen Newman, the Institutional Review Board Secretary by calling (877) 297-6829 or by emailing g.newman@horizon-research.com.

- *Would you like to participate? If you click "Yes" and type your name below, it means that you have read the information in this consent form and you would like to complete the survey.**

( ) Yes

( ) No

- *Please enter your full name below. A copy of this form will be emailed to you for your records. **

First Name:: _____

Last Name:: _____

- *According to our records, the [name of town/organization] worked with UCONN's [name of corps] Corps students in [year]. Students [description of student project]. Are you familiar with this E-Corps project?**

( ) Yes, very familiar.

( ) Yes, somewhat familiar.

( ) No.

( ) I'm not sure

- *If you know of someone in your town/organization who would be more familiar with the project, please share their contact information.*

Name:: _____

Role:: _____

Email address:: _____

Any notes on how/why this person connects to this project::

_____

- *Has the work of the [name of corps] Corps students been used in any way since its completion?**

( ) Yes

( ) No

( ) Not sure

- *Why has the work of the [name of corps] Corps students not been used? Check all that apply.**

[ ] Concern about the quality of the project

[ ] Lack of time

[ ] Lack of funds

[ ] Project topic is of low priority to our community.

[ ] Other:: _____

Please provide a brief description of how the project was or is being used.

_____

_____

_____

_____

- *E-Corps projects may impact/contribute to a town/organization/community in various ways. Did the [year] [name of corps] Corps project:*

	No	Yes
improve/expand public outreach and awareness?	( )	( )
support/contribute to town/organization plans or policies?	( )	( )
support/contribute to town/organization projects (with data, research, mapping, etc.)?	( )	( )
support town/organization grant applications?	( )	( )

improve town infrastructure (new construction, conservation practices implemented, new signage, green stormwater infrastructure installations, etc.)?	( )	( )
address a previously unaddressed environmental problem or need?	( )	( )
help town/organization to comply with federal or state regulations?	( )	( )

How did the [year] [name of corps] Corps project improve/expand public outreach and awareness?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project support/contribute to town/organization plans or policies?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project support/contribute to town/organization projects (with data, research, mapping, etc.)?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project support town/organization grant applications?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project improve town infrastructure (new construction, conservation practices implemented, new signage, green stormwater infrastructure installations, etc.)?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project address a previously unaddressed environmental problem or need?

_____

_____

_____

_____

How did the [year] [name of corps] Corps project help the town/organization to comply with federal or state regulations?

_____

_____

_____

_____

- *Did the [year] [name of corps] Corps project have any other impacts/contributions?*

( ) Yes

( ) No

Please describe the other impacts/contributions the project had.

_____

_____

_____

_____

In your opinion, why has the project not had any impact?

_____

_____

_____

_____

- *If selected, would you be willing to participate in an online interview sometime in the next few weeks so we can learn more about the implementation and impact of the [name of corps] Corps? We anticipate the interview will last about 45 minutes.*

( ) Yes

( ) No

Thank You!