
I. Project Summary

- a. Project Title: “Transforming Our Communities to Address Climate Change”
- b. Summary Statement: Stakeholders will collaborate to produce a two-year research study, pilot project and implementation plan designed to do two things:
 1. Year 1: Assess market barriers in our community specific to energy efficiency (“EE”) and solar market development and produce solutions that enable these technologies to flourish in Charleston communities as one critical strategy to combat climate change;
 2. Year 2: Assess options, costs and benefits for adapting existing homes to cope with the effects of climate change via a project in (a) targeted low-income community(s).
- c. Lead Applicant: The Sustainability Institute, Bryan Cordell, Executive Director, Director@sustainabilityinstitutesc.org, (843) 529-3421
- d. Funding Requests: \$75,000 Year 1/ \$75,000 Year 2
- e. Partner(s):
 - City of Charleston, Katie McKain, Senior Planner, Department of Planning, Preservation and Sustainability, MCKAINK@charleston-sc.gov, (843) 724-3789
 - Charleston Promise Neighborhood, Radia Heyward, Community Engagement Program Manager, radia.heyward@charlestonpromise.org, (843) 647-6209
 - Charleston Resiliency Network, Dan Burger, Chair, Coastal Services Division Director, DHEC Ocean & Coastal Resource Management, burgerdj@dhec.sc.gov, (843) 953-0251
 - Insurance Institute for Business and Home Safety, Fred Malik, Vice President, FORTIFIED Programs, (813) 286-3400
 - South Carolina Electric and Gas Company, Danny Kassis, Vice President of Customer Service, SCANA Corporation, dkassis@scana.com
 - Solarize Charleston, Matt Reynolds, owner of Raywell Solar, matt@raywellsolar.com, (804) 318-0833
 - College of Charleston, Dr. Todd LeVasseur, Director, Quality Enhancement Plan "Sustainability Literacy as a Bridge to Addressing 21st Century Problems", levasseurtj@cofc.edu, (843) 953-3911
 - Heritage Trust Federal Credit Union, Tricia Haggerty, Member Relationship Manager, HaggertyT@htfcu.org, (843) 832-7570

II. Our Case

As a city with most elevations near sea level, Charleston has been identified as a coastal community under significant threat by climate change, especially sea level rise, increased storm surges, tidal flooding, and extreme heat. Per the City of Charleston’s 2015 Sea Level Rise Strategy, sea levels are expected to rise between 1.5 and 2.5 feet over the next 50 years in Charleston. Tidal flooding in the 1970s averaged 2 times a year while in the early 2010s it was up to 11 times per year, and by 2045 the City is projected to face 180 tidal floods per year. Additionally, our warm and humid climate zone poses

significant threats as temperatures continue to increase and heat waves become more prevalent, and is especially dangerous for the area's vulnerable populations who may not have access to home air conditioning. While the City of Charleston has a network of volunteer-based organizations (Charleston Resiliency Network) in place that are committed to increasing the resilience of communities, as well as a formal Sea Level Strategy, very little activity has occurred around identifying options, best practices, costs and benefits to mitigate the effects of climate change on homes in our vulnerable communities.

At the same time, access to the tools and technologies needed for adapting and upgrading our homes -- and ultimately for protecting our communities and reducing citywide carbon emissions -- have been especially limited for the low-income families and at-risk populations that need them the most and are already facing effects of climate change. This is due to lack of engagement, awareness, and training for these families, as well as due to lack of access to traditional financial lending mechanisms. While low-income families in our vulnerable communities are at most risk and will benefit the most from housing adaptation strategies, there has been no comprehensive strategy for engaging these families in the necessary planning that must take place. For any climate adaptation strategy to succeed an inclusive and equitable planning process must be implemented and high level engagement must occur.

Under direction from The Sustainability Institute ("SI"), stakeholder partners will convene and collaborate to:

- 1) Facilitate and advance an inclusive community engagement and planning process with at-risk populations in vulnerable communities in order to produce broad scale, localized strategies and a programmatic framework for mitigating the effects of climate change on housing in our communities;
- 2) Create a neighborhood pilot/ demonstration project that builds awareness and educates and trains families, and implement strategies that result from planning activities (leveraging existing resources and programs already in place);
- 3) Assess opportunities to strengthen local policy to support implementation strategies;
- 4) Design and pilot a financial safety net mechanism for lending to low-income families;
- 5) Produce a community implementation plan with residents for best practice adoption that is replicable for other coastal cities and communities under threat.

Outputs will include: (1) An equitable process and toolkit for outreach; (2) localized strategies and a programmatic framework; (3) a neighborhood pilot/ demonstration; (4) policy recommendations; (5) a mechanism for producing a financial safety net for families; and (6) a replicable implementation plan. *Outcomes* will include families becoming more engaged, aware, trained and better-positioned to adopt strategies; as well as homes becoming upgraded with adaptation strategies. Other communities in our region face the exact same climate risks and market barriers related to housing and will benefit from an outreach toolkit, a programmatic framework and implementation plan, study results and policy recommendations.

Success will be determined by:

- (a) The quality of the community engagement process and the level of participation – our goal is to engage and train at least 20 families in the targeted community(s);
- (b) The robustness and applicability of the localized strategies and programmatic framework that will be developed and piloted through collaborative stakeholder engagement;
- (c) The deployment of meaningful upgrades and solutions in 15 homes as part of our pilot to inform future decision-making and programmatic choices;
- (d) The ability to advance policy wins that will support climate mitigation/ adaptation strategies in our communities;
- (e) The ability to make the project replicable for use in other coastal communities.

III. Project Design

In Year 1, SI will facilitate and implement a comprehensive community planning process that will engage both partners and the targeted community(s) and will tee-up a Year 2 pilot study. The outputs of the planning process will include localized strategies and a programmatic framework for mitigating the effects of climate change on housing in our communities. The strategies and framework will then be tested and piloted in Year 2 of the project.

Year 1 (Funding Request: \$75,000):

- Engage an advisory group representing community residents, advocates and stakeholders;
- Engage Don Edwards of Justice and Sustainability Associates to help design and coach the initial community engagement process. Mr. Edwards is considered to be one of the most deft mediators and process designers working today in the field of land use and development and is from Charleston;
- Facilitate community engagement in the targeted community(s) using an approach that includes (but is not limited to) facilitating community meetings and charrettes, as well as utilizing at-risk youth as “dialogue facilitators” learning white-collar skills as they are trained in community engagement;
- Design localized strategies, a programmatic framework and an implementation plan.

SI is well positioned to manage this work as a trusted, nonprofit organization that has a long history of implementing community outreach, housing initiatives, and workforce development activities in low-income communities in Charleston. We will engage Justice and Sustainability Associates under the belief that facilitation should be guided by an independent entity when vulnerable communities are involved and that facilitation should include a strong focus on the socio-economic impacts of decisions, strategies, and actions. Community engagement will incorporate the following elements:

Amount: \$175,000

Grant End Date: December 31, 2019

The at-risk youth serving on this project will come from SI's Energy Conservation Corps ("ECC") program, an award-winning, workforce training program affiliated with national AmeriCorps that has been in operation for 7 years. The youth are recruited directly from low-income neighborhoods in the targeted area. As part of the service-learning program, these individuals receive a special combination of national industry training in home retrofitting, on-the-job training and "soft-skills" training, as well as apprenticeship training and job placement services. This project will enhance those skills by training the youth in using tools, techniques and best practices for community engagement. Additionally, we will collaborate with the College of Charleston through a university partnership to design and conduct participatory, action-oriented research to guide the process.

SI will utilize a small portion of the grant funding to cover the costs associated with child care to enable families to better attend and participate in planning activities as essential stakeholders. Understanding that a community group gets its capacity from drawing on the commitment, resources and skills from those within and around it, SI will also create wealth building for residents by using a small portion of funds to pay for their time and expertise. This will allow residents to take time off of work as needed to attend events and to provide valuable feedback. The result of these outreach activities will include at-risk youth being trained as dialogue facilitators and families trained to conduct outreach within their communities. An output from this work will include the production of a community outreach toolkit that can be used as a model for other communities.

Year 2 (Funding Request \$75,000):

Year 2 will be focused on implementation of the pilot project, which will include testing the proposed climate adaptation strategies that become part of the programmatic framework and implementation plan that are outputs of the community engagement process. Energy efficiency and solar upgrades and other climate adaptation strategies (such as flood proofing) will be deployed on homes in the targeted community(s).

SI will install selected energy efficiency upgrades on 15 homes using its Energy Conservation Corps program, which retrofits low-income homes in the Charleston area. Solarize Charleston will work with local solar companies to install rooftop solar on 5 homes that qualify with appropriate orientation and structure. For homes that are not well suited for solar, SI will work with South Carolina Electric and Gas Company ("SCE&G") to give these homes access to their new community solar program. The Insurance Institute for Business and Home Safety, which runs the Fortified for Safer Living Program, will advise the project on additional climate adaptation strategies and upgrades that should be tested/ piloted on 5 of these homes.

Partners will pilot a financial safety net for financial lending, understanding that one of the biggest market barriers is the upfront cost for home upgrades (of any kind), which is often compounded by the uncertainty of their return on investment. Heritage Trust Federal Credit Union will be a lead advisor. The



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exact mechanism will be chosen during Year 1, but will likely be a loan loss reserve, revolving loan fund, or mechanism for issuing microloans.

SI, SCE&G, and student researchers from the College of Charleston will partner to measure, analyze, and document successful implementation of upgrades, carbon emission reductions, financial savings, and other outcomes. The City of Charleston, SI and other partners will make policy recommendations that will be designed to encourage and/ or incentivize widespread adoption of climate adaption strategies. The Sustainability Institute, Solarize Charleston and the Insurance Institute for Business and Home Safety will partner to launch and deploy a public relations and marketing campaign to encourage widespread adoption.

SI will receive grant funds and will be responsible for managing and coordinating the project.

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Major Milestones	Success Metrics	Responsible Party	Timeline
<i>What are the major project milestones?</i>	<i>Why is each milestone important to the project goals, & how will success be measured?</i>	<i>Who is responsible for producing each deliverable? (consultant, city, team, nonprofit partner, etc.)</i>	<i>When will milestones be completed? (calendar)</i>
1 Stakeholders, an advisory group, and residents will be convened and a community engagement process will be designed and initiated. Outputs will include a community outreach toolkit.	An inclusive and equitable process for outreach will result in better outcomes and a toolkit will enable replication in other communities. Success will be measured through quality of process and rates of participation.	Sustainability Institute, City of Charleston, Justice & Sustainability Associates, and College of Charleston	Jan 2019 Jun 2019
2 Community engagement in selected community(s) will be executed. Outputs will include localized strategies, a programmatic framework, and an implementation plan. Strategies and programmatic framework will focus on climate mitigation/adaptation strategies for housing, including but not limited to energy efficiency, solar, floodproofing/prevention, etc.	Community outreach will be key to project success. Strategies, programmatic framework and implementation plan will guide the project. Success will be measured through quality and success of plan.	Sustainability Institute and all outreach partners	May 2019 Dec 2019
3 ST's at-risk youth will be trained to become "dialogue facilitators" and will engage in training of residents to conduct outreach (employing wealth building opportunities).	This activity builds skills and wealth in the community.	Sustainability Institute	May 2019 Dec 2019
4 Performance contractors, service providers, product manufacturers & others will be recruited to participate in a neighborhood pilot study.	These partners will be critical to the successful implementation of the pilot study and project. Success will be measured through level of participation.	Sustainability Institute	Apr 2019 Jun 2019
5 At least 15 privately-owned homes in a targeted low-income community will be retrofitted with energy upgrades to develop and test community-based best practices & approaches. 5 of these homes will also be assessed and upgraded with additional climate adaptation upgrades & further retrofitted.	Retrofits will demonstrate the efficacy of pilot study strategies. Success will be measured through successful implementation and rate of savings.	Sustainability Institute and Insurance Institute for Business and Home Safety	Nov 2018 May 2019
6 5 homes will receive either rooftop solar OR access to SCE&G's community solar program.	Rooftop and community solar are important strategies for climate mitigation and CO2 emission reductions.	Solarize Charleston, SCE&G, Sustainability Institute, US Department of Energy	Nov 2018 May 2019
7 A financial "safety net" mechanism or lending option(s) (ex: loan loss reserve, revolving loan fund, microgrants, etc.) will be piloted.	Access to low interest rate financing is a market barrier for low income families. Success will be measured by the number of families that participate in lending/ number of loans provided.	Heritage Trust Federal Credit Union	Nov 2018 May 2019
8 Improved efficiency of homes, solar output, and savings will be measured, analyzed, and documented.	Measuring improved efficiency, solar output and savings will demonstrate the efficacy of approaches.	College of Charleston and Sustainability Institute	May 2019 Dec 2019
9 Stakeholders will assess outcomes and make programmatic and policy recommendations.	Advancing policy will broaden impact.	City of Charleston and other partners	Apr 2019 Sep 2019
10 Stakeholders will launch a public relations/ marketing campaign to encourage wide spread adoption.	A PR/ marketing campaign will be critical to broadening awareness and educating residents. Success will be measured through successful implementation and rate of adoption.	Solarize Charleston, Sustainability Institute and Insurance Institute for Business and Home Safety	Oct 2018 Dec 2019

IV. Project Impact

The project will create community sustainability by assessing and piloting climate mitigation and adaptation strategies for housing in vulnerable communities and by informing policy as well as programmatic solutions. Outputs will include a community outreach toolkit, localized strategies, a programmatic framework and an implementation plan. A pilot project that includes the retrofitting of homes with climate adaptation strategies including but not limited to energy efficiency, solar and flood proofing will demonstrate the efficacy of strategies and approaches and demonstrate savings potential.

Low income families and communities under threat are the priority stakeholders, particularly families living in inefficient homes, in low laying areas, and in homes with no air conditioning. SI and Charleston Promise Neighborhood regularly engage these communities as trusted community partners and will ensure families will be engaged in project design, planning and implementation and will benefit directly from the pilot study. An independent consultant and facilitator (Justice & Sustainability Associates) will help design an inclusive and equitable process for community engagement. Community engagement strategies including training dialogue facilitators and deploying wealth building techniques will expand educational and economic opportunities and produce better rates of participation.

SI will leverage technical assistance it has received through a grant from the U.S. Department of Energy (valued at \$25,000 in in-kind services) as part of the Solar in Your Community Challenge to advise implementation of community solar and will provide a total match of \$131,117.

This project advances the City of Charleston's overall sustainability efforts and policies, but particularly:

City Council Resolution on Distributed Renewable Energy (Jan 2014): City Council adopted a resolution supporting distributed renewable energy and South Carolina House Bill 3425 and Senate Bill 536, known as the Energy System Freedom of Ownership Act, recognizing that reliable and affordable technology has developed to enable consumers to produce electrical power from renewable sources on their own properties. This project will advance the resolution by increasing the use, awareness and knowledge of renewable energy.

Upper Peninsula EcoDistrict effort (2013- 2017): This project will directly advance the goals of the EcoDistrict, a collaborative community planning effort aimed at promoting responsible and sustainable growth of the City's Upper Peninsula area. An equity objective is to "ensure diverse neighborhood and stakeholder involvement in all activities and decision making." This project will involve a tremendous amount of community input and wealth building to advance this goal. Another goal is to "conserve energy use by minimizing demand and maximizing conservation." This project will increase efficiency of the homes in the pilot study. Another goal is to "use and promote renewable energy." The project will install solar systems and grow awareness of the benefits of renewable energy.



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Sea Level Rise Plan (Dec 2015): City Council adopted a Sea Level Rise Strategy recognizing Charleston's need to be more resilient for future generations and be prepared for rising tides. This project will advance the Plan by bringing greater awareness to the correlation between rising sea level and greenhouse gas emissions, and by facilitating proactive (rather than reactive) strategies.