

RIVERESM: Economic Benefits to the Region

In 2016, the City of Fredericksburg's Economic Development Authority consulted with Atlanta-based Garner Economics to produce a strategic economic development plan. The document, titled "Embracing History and Progress", identified four core industry targets to enable Fredericksburg to meet its objective of becoming an employment epicenter. The RIVERESM Ecological Center will align with these four goals as summarized below:

1. **Tourism, hospitality, and specialty retail:** RIVERESM aims to build a world-class ecological center designed in form and function to attract and engage eco-tourists with cutting-edge science, technology, environmental education, and ecoculture. The RIVERESM Center will be located on one acre at the historic Embrey Power Plant site as part of a revitalization of Fredericksburg's Creative Maker District. RIVERESM will obtain design guidance from prestigious SmithGroup architects and Commonwealth Architecture to integrate sustainable, futuristic design features into the facility while honoring Fredericksburg's commitment to preserving its authentic historic character and connecting the community to the Rappahannock River. The RIVERESM Center will feature unique educational opportunities for the public related to the Rappahannock River that will highlight research being supported by RIVERESM. Meeting and auditorium space will be available for events. Virtual and augmented reality experiences will be featured to bring the public into underwater ecosystems in the Rappahannock River and envision future impacts of projected land use on river health and associated recreation experience. It is projected that revenue related to tourism, conferences and meeting events will result in significant revenue to the area, particularly if the site can be marketed as an ecotourism site.
2. **Professional and corporate office users:** The RIVERESM Ecological Center will offer flexible coworking memberships to provide a dynamic, collaborative environment that generates synergistic opportunities among academic institutions, non-profit organizations, governmental agencies, and start-up technology companies with an environmental focus. RIVERESM is particularly interested in serving as a regional hub to foster continued collaborative conservation efforts among members of the Rappahannock River Roundtable, the primary network of regional conservation organizations. It is projected that the 25,000 square foot RIVERESM Ecological Center will be able to support up to 165 seated memberships within the coworking facility. It is also likely that most memberships will be professional-level workers with advanced degrees, many of which may move to the Fredericksburg area. Assuming a modest \$60,000 average for all salaries within the building, an estimated \$9,900,000 in salaries can be projected.

3. **Science and technology, R&D, contracting/consulting:** RIVERESM is coordinating the Rappahannock SmartRiver Initiative to serve as a focal point for making Greater Fredericksburg the “go-to” region for academic researchers and high-tech companies interested in developing, manufacturing, and deploying emerging sensor technologies to enhance water quality monitoring. RIVERESM has established a Research Advisory Board comprised of local and regional experts to guide this initiative. RIVERESM is also partnering with Virginia Innovation Partnership Corporation (VIPC) to facilitate research on the Rappahannock in the areas of wireless water quality sensor acquisition and deployment, data integration, and cloud-based computing by engaging the Virginia Smart Community Testbed (a partnership between VIPC and Stafford County EDA). RIVERESM will complement the Testbed’s integrated water management initiative while benefiting from three ecosystems that confluence at the Testbed: 1) Verizon Innovation Hub ecosystem, 2) RIoT ecosystem, and 3) VIPC Living Laboratories ecosystem to identify technology and entrepreneurs. As a magnet for high-tech research related to the Rappahannock River, the RIVERESM Ecological Center will attract a significant number of visiting researchers for conferencing, meeting with members within the facility, and conducting research on the Rappahannock. Visiting researchers will stay in local hotels, eat meals at local restaurants, and enjoy the many social settings in downtown Fredericksburg.
4. **Education and health services:** Friends of the Rappahannock (FOR) will oversee environmental education at the RIVERESM Ecological Center, and RIVERESM will donate profits from the coworking facility revenue to support FOR’s mission. FOR’s administrative staff can locate at the RIVERESM Ecological Center at no cost once the facility becomes profitable, enabling FOR to expand educational capacity at their existing site. RIVERESM is also engaging high-tech companies and researchers to develop virtual and augmented reality immersive learning experiences to support, enhance and expand the capacity of education and public outreach efforts related to the Rappahannock River. Having FOR utilize the RIVERESM Ecological Center to educate students and the public about research on the Rappahannock provides a significant benefit to researchers who must fulfill the strict “broader impacts” outreach requirements for nearly every federal and state grant opportunity available today. Researchers will see RIVERESM as a significant strategic advantage for using the Rappahannock River to conduct research.