

## Fishing Creek Farm Homeowner's Association

### Southbreeze Shoreline Restoration/Stabilization Narrative Response

**1. Selected track.** Fishing Creek Farm HOA (FCF HOA) is submitting the Southbreeze Shoreline Restoration and Stabilization project for the WILD implementation track .

**2. Project description.** The Southbreeze Shoreline Restoration and Stabilization project will ultimately provide water quality improvements at the mouth of the South River by stabilizing approximately 540 linear feet of tidal shoreline that is eroding laterally at an average rate of 2.0 ft/yr. This grant would help fund the project execution phase while a prior grant from Chesapeake Bay Trust has funded the production of 100% plans and specifications in addition to obtaining required permits and approvals for the project. Project plans are within two weeks of finalization which will result in applications for permits being filed. The "0401 Funding Package NFWF Final" doc uploaded in "other docs" provides background on the project, aerial photos illustrating erosion over time, current solution design, and complete listings of wildlife affected including "at- risk" or "in need of conservation".

**Objectives:** Design and permit an ecologically and fiscally responsible solution to the ongoing shoreline erosion on FCF HOA property. The designed and permitted solution will provide long-term, self-maintaining stability that will not only protect the shoreline but also protect a still water pond that is a habitat for numerous at-risk species, including the American black duck, bald eagle, pine siskin, peregrine falcon, and snowy egret. Plantings will both help stabilize the existing dune while providing some mitigation to runoff pollutants into the South River. Dramatically decreasing the sediment flow into the South River/Chesapeake Bay is the greatest pollutant mitigant. We will collaborate with other similarly situated communities to showcase the benefits of the restoration as well as work with local public and private schools to illustrate project benefits for the community and health of the Bay. Finally, it will improve access to the beach for the community. We believe these objectives align well with pillars 1, 2, 3, 4, and 5 of the WILD program.

#### Project Tasks:

**1) Site Investigation** – Our design contractor, Wetland Studies and Solutions, Inc. (WSSI) has performed a geomorphic site assessment, topographic and bathymetric survey of shoreline, wetland delineation, critical area analysis, and engineering desktop assessment. WSSI has also gathered information on the site history from community members.

**2. Engineering Analyses & 30% Design** –WSSI has will completed engineering analyses and developed a 30% design plan set, which includes a grading plan, typical details and sections, preliminary planting plan, preliminary vegetation schedule, and conceptual design narrative. WSSI has also produced a planning-level construction cost estimate. The community has reviewed the design and the Board of directors has also reviewed and approved. It can be seen in the 0401 Funding Package NFWF Final doc.

**3) Permitting & Approvals** –the Shoreline Tiger Team and WSSI have held a pre application site visit with MDE, USACE, DNR and Critical Areas reviewers. This will serve as the start of the Permitting & Approvals Task. WSSI is obtaining the required permits and approvals, which may include: Maryland Wetlands License (MDE), Clean Water Act Section 404/401 Permit (USACE), Water Quality Certification (if required), Critical Areas Approval, County Building Permit (if required), County Grading Permit, Soil Conservation District (SCD) Approval, County Floodplain Approval (if required), and NPDES Notice of

Intent (NOI). The 90% final design and specifications is expected to be complete in the by mid-April at which time permits will be sought.

**4) 90% & Final Designs & Specifications** – WSSI has advanced the initial design taking community, agency, and county reviewer comments into account. WSSI is now preparing a 90% design plan set to include revised grading plan; construction details, sections, and notes; planting plan and vegetation schedule; erosion and sediment control plan, notes, and details; construction specifications; and final design narrative.

**3. Local plan identification or other justification for the selection of the project.** The Southbreeze Shoreline Stabilization project can provide nutrient and sediment reductions towards TMDL goals for Anne Arundel County as identified in their current Watershed Implementation Plan and South River Watershed Study. Alternatively, reductions could be provided to another locality (e.g., City of Annapolis, a portion of which also drains to the South River) or entity (e.g., MDOT SHA, which has been developing a South River Sediment TMDL Implementation Plan and has nutrient TMDLs listed in the South River Watershed section of their Implementation Plan for Various TMDLs in Maryland). While this project is not specifically included in a watershed plan, it will provide nutrient and sediment reductions at the source by preventing shoreline erosion, an effort consistent with the goals of these plans. In addition, the project will stabilize and protect a still water pond habitat for numerous at-risk or in “need of conservation” species. Recent storm surges have breached the dune barrier separating the brackish South River from the still water pond, adding a sense of urgency to the project.

**4.a. Community demographics.** There are 120 lots in the FCF Community, all but two of which are developed or awaiting development permit approval. Block Group 1 of Census Tract 7026.02, where the FCF Community is located, is reported to be 79% white and 21% people of color; the median household income is \$151,579. This Census-based data was summarized from the 2016-2020 5-year American Community Survey by Census Reporter (censusreporter.org).

**4.b. Audience.** The community in which the project will take place has not been identified as historically under-engaged or under-served.

**4.c. Meaningful community involvement.** Members of the FCF HOA reviewed suggestions for stabilizing the Southbreeze shoreline in February 2022. These members suggested more focused involvement from community members, which resulted in the creation of a “Tiger Team” consisting of 13 members of the HOA. The Tiger Team met weekly on matters of project planning and development; all meeting notes and documentation are posted to a dedicated Forum on the community's website for all community members to review. The team also provides status reports every month at the HOA Board meetings.

**4.d. Ownership transference to community.** Ownership will not need to be transferred as the applicant is the community's HOA and owns the property where the project will take place.

**4.e. Organization's experience working within the community.** The Fishing Creek Farm Homeowner's Association has been an active organization since the community's inception in 1988. The HOA Board and Shoreline Tiger Team are comprised of community members, and they report to and communicate with the larger community on a regular basis.

**5.a.i. Metrics for Design Project requests.** The table below outlines the various metrics for the Southbreeze Shoreline Stabilization. Impervious Acre Equivalent and reductions were calculated in

accordance with Accounting for Stormwater Wasteload Allocations and Impervious Acres Treated: Guidance for National Pollutant Discharge Elimination System Stormwater Permits (June 2020) and The Recommendations of the Expert Panel to Define Rates for Shorelines Management Practices (amended November 2019). Calculation details are included as Attachment B.2; credit estimates will be updated as required during the design phase to reflect field conditions and ultimate design approach.

	Project Length	Drainage Area	Impervious acres treated	Nitrogen Reduction	Phosphorous reduction	Sediment reduction
Southbreeze Shoreline Project	540'	10.5 Acres	21.6 IA eq	142.24 lbs/yr	80.19 lbs/yr	215,131 lbs/yr
Cost Effectiveness	\$1487/lf	N/A	\$37,037 IAeq	\$5624 lb/yr	\$9976 lb/yr	\$3.72 lb/yr
Living Shoreline cost effectiveness range	<\$50/sf		<\$4000	<\$1400	<\$450	<\$300

**5.a.ii. If the cost of a metric is higher than the range listed, please justify why the project costs more and should still be funded.** As shown in the table above, the cost per pound of sediment reduced is within, and substantially below, the RFP's listed cost effectiveness ranges. The project's cost per linear foot, cost per impervious acre treated, and cost per pound of phosphorous and nitrogen reduced were outside the cost effectiveness ranges. One reason for the higher cost is that the proposed design does not plan for an extensive marsh compared to the length, so the marsh area does not contribute as significant a quantity of nutrient reductions as might be seen on other living shoreline projects. The Southbreeze site has historically been a naturally occurring depositional area with a sandy beach and even as recently as the 1980s was described as more than 20 feet wide (Wang et al., 1982; ). Given that so much of the shoreline along this portion of the South River has been hardened, maintaining this area as beach will provide an important diversity of habitat for species such as horseshoe crabs, wading birds, and aquatic organisms. Another reason for the higher cost is the site is situated on the South River such that the fetch to the south extends more than 30 miles down the Chesapeake Bay. Given this constraint, the engineering analyses need to be thorough to ensure the design will remain stable and function as intended, ie reducing significant sediment erosion, even in the face of waves developing from strong winds over this long distance. Finally, the beach and dune provide a critical barrier protecting the fresh water pond habitat. This is a unique and diminishing habitat for numerous at- risk and in need of conservation species.

**5.a.iii. Describe co-benefits.** The Southbreeze site is one of few properties along the Thomas Point Road corridor on the South River where there is still a natural connection between water and upland rather than a hard divide of bulkheads or continuous stone armoring. This shoreline is retreating at a rapid rate due to active erosion and lack of sediment supply (discussed in Section 5.a.iv). The Southbreeze Shoreline Stabilization project will protect the natural connection between water and upland that is so important in this area, both as natural habitat and as a highly valued community amenity. Our residents observe numerous at-risk and "in need of conservation" species using the Southbreeze shoreline

throughout the year – American black ducks, pine siskins, black crowned night herons, Dark Eyed Junco, Hooded Merganser, Black Throated Blue Warbler, Bald Eagle, Snowy Egret, and Eastern Whip-or-Will, osprey, other waterfowl, horseshoe crabs, and even the occasional terrapin. In addition to the water-land connection it provides, the shoreline and its low dune maintain a nontidal pond on the property. Due to the ongoing erosion, the beach and dune separating the pond from the South River have become less able to provide adequate protection in the face of more severe storm events (discussed more in Section 5.a.iv); the Southbreeze Shoreline Stabilization project will help protect the pond long-term. This pond provides sheltered habitat to species such as wood ducks and mergansers, and the land around it hosts a variety of native plants, the diversity of which we want to preserve and enhance through this project.

**5.a.iv. Describe current site conditions.** The proposed Southbreeze Shoreline Stabilization project is located on a parcel owned by the FCF HOA. While a 1986 plat indicates the property area at 4.6 acres, active shoreline erosion has shrunk the parcel to approximately 3.9 acres, including a 2-acre pond. The property is designated as Open Space and its use is limited to passive recreation as defined in the original FCF development plan and covenants. It has approximately 540 linear feet of tidal shoreline along the South River, which is comprised of a beach leading into a low, vegetated natural dune. The beach and dune serve as a divider, preserving the pond as sheltered non-tidal habitat. A small portion of the shoreline at the southern end of the property is forested, as is most of the property behind the pond. The shoreline is eroding laterally at an average rate of 2.0 ft/yr. With each passing year, the beach and dune offer less protection to the pond and more of the trees along the southern shoreline are washed away. In 2016 and again in 2023 and 2024, erosive forces generated by severe weather breached the dune, leading to regular tidal exchange between the pond and the South River. With increasing storm severity due to climate change, the likelihood of another pond breach also rises. Based on mapped shoreline and littoral drift conditions documented by Wang et al. (1982, Attachment B.4), sediment supply for the Southbreeze site should travel upstream along the South River shoreline from the direction of the Chesapeake Bay. Nearly the entire shoreline in that updrift direction has been hardened, which has severely limited the site's littoral sediment supply, interfering with the natural balance of sand at Southbreeze beach.

Preliminary site investigations indicate that the project will not impact SAV or sensitive species. Wetlands will be delineated as part of the project design; our designer, WSSI, will work to minimize wetland impacts, and permanent impacts are expected to be mitigated on site. While the project will require some trees to be removed, the project's net impact to the Chesapeake Bay Critical Area will be positive as it will stabilize the shoreline, protecting existing shore, nearshore, forest, and pond habitat.

**5.a.v. Describe how the project and site were selected.** The shoreline at the proposed project site was historically a depositional area but given the development of hardened shorelines updrift of the site, the natural movement of sand has been interrupted and the shoreline has retreated more than 25 feet since 2009. This, coupled with the breach of the South River into the existing pond, led us to select this site for a shoreline stabilization project to prevent continued erosion and protect the pond habitat.

**5.a.vi. Upstream land uses, restoration, and impact on project.** The necessity or success of a tidal shoreline stabilization project like the Southbreeze Shoreline project is impacted far less by upstream restoration activities and changes in land use than a non-tidal stream restoration or BMP project would be. Especially given this project's location near the mouth of the South River, restoration activities or

land use changes upstream will have minimal, if any, impact on the function of the proposed shoreline stabilization project. In the case of Southbreeze, the main off-site human-influenced factor that could impact the project would be a change in offshore sediment supply. As discussed in Section 5.a.iv, nearly the entire shoreline updrift of the Southbreeze site has been hardened, which has severely limited the littoral sediment migration. Additional hardening updrift of the site would not result in a meaningful change in the site's condition, nor would it affect the function of the proposed project. Additionally, it is highly unlikely that enough of the updrift coastline will be restored in a manner that would reestablish the sediment migration patterns in a timeframe that will allow the site condition to improve naturally. As far as impacts from the immediate upland area, the shoreline stabilization design may need to incorporate a protected overflow section to allow for controlled inflow or outflow from the pond for situations where water levels on the river and pond are significantly different. This would help prevent scour from uncontrolled overtopping of the natural dune. The site investigation and subsequent engineering analysis will evaluate the need for this and determine the best design if one is required.

**5.a.vii. Alternatives analysis. Location:** The location of the Southbreeze Shoreline Stabilization project was selected because the site is experiencing active erosion. The proposed project will address nutrient and sediment inputs at the source. **Technique:** Prior to applying for this grant, we solicited design ideas from qualified shoreline restoration design firms. The preferred technique and several design alternatives are discussed below. The uploaded power point deck includes a preliminary concept plan and section views for the preferred technique. Preferred Technique – Tombolos with beach, planted dune, and marsh stabilization area • Tombolos (stone breakwaters with sand connection to land) provide protection from both the common storm direction (northwest) and longest fetch (south). • Sand beach feature will be restored (see Section 5.a.ii for more information on the beach). • Vegetated dune will provide an additional line of protection for the existing pond. • Wider dune plantings and marsh stabilization area at the southern end to protect the most vulnerable area, where the pond was previously breached. • Planted areas will provide beneficial habitat. • Open connection between the land and water will provide access for animals and recreating humans. • Approach would be categorized as a living shoreline project and could be designed to qualify for faster and simpler permitting under MDSPGP-6.

**Alternative designs considered and primary reason eliminated:** • Stone sill with planted marsh – Due to the 30+ mile southern fetch and considering the previous pond breach, our technical partner, WSSI, does not believe this approach will provide the necessary protection for the shoreline and pond during events that may overtop the sill. • Breakwaters with natural sand recruitment – Due to the updrift hardening discussed in Section 5.a.iv, natural recruitment of sand is unlikely to occur. • Sand supplementation only – Due to updrift hardening, there would be no supply of sand coming into the site as the natural littoral processes carry sand away, and supplementation would need to be done on a regular basis. If selected for funding, we are willing to consider alternative design techniques should it be found that they will minimize adverse impacts.

**5.a.viii. Narrative Attachments.** The uploaded power point deck (Funding Package NFWF final) includes the following : aerial photos showing degradation over past 6 decades, photos of recent breaches of still water pond, design plans, list of at-risk/in need of conservation species utilizing the fresh water pond habitat, and a full list of species utilizing the habitat.

**5.a.ix. Property ownership and long-term commitment.** We, the FCF HOA, own the property on which the project will be constructed. Our dedication to the project's long-term maintenance is discussed further in Section 6.c.

**6.a Project long-term value.** Changes in community interest and changes in land use are not considered threats to the longevity or long-term value of this project. The community highly values this site as a natural amenity for the residents and habitat for local and migrating wildlife. The property is designated as Open Space and its use is limited to passive recreation as defined in the original FCF development plan and covenants. The community is committed to the long-term maintenance of the project, as discussed in Sections 6.c. The Southbreeze Shoreline Stabilization would also provide long-term value as a demonstration and educational site. In addition to educating community members about the project over the course of its design and construction, we will host tours of the project either conducted by our community members or in partnership with local organizations like the Arundel Rivers Federation and Hillsmere Elementary School. Tours can exhibit the erosion protection and habitat benefits provided by the project, highlighting the way the project supports the natural ecosystem while also providing a community amenity.

**6.b. Accounting for climate change.** The outcomes of climate change could have the biggest effect on the longevity of the Southbreeze Shoreline Stabilization project, particularly sea level rise and the potential for more frequent storm surges (from an increased number of severe storms). During project design, WSSI will help the community weigh the long-term costs and benefits of the ultimate height of the proposed offshore breakwaters. Multiple factors will feed into this decision, including engineering considerations for stability, permitting considerations, the ability to effectively reduce erosion, the potential for sea level rise of varying amounts over the next 30 to 80 years (2050 and 2100 projections), constructability, and aesthetics. Consideration will also be given to whether it makes sense to construct a wider breakwater now to facilitate retrofitting the breakwater to a higher elevation several decades down the road based on the progression of sea level rise.

**6.c. Future financial resources to maintain value.** FCF will build maintenance expenses into our operating budget and capital expenses budget supplemented by a core of committed community volunteers. Submitted audited financial reports show resource availability and financial discipline.

**7. Describe your organization's experience in completing similar projects.** Over the past 12 years, the FCF Community has been involved with the implementation of two other shoreline stabilization projects (one along Cherry tree Cove and another along the South River on Smiths Island) and one large invasive species removal and revegetation project. These projects demonstrate our ability to successfully carry a community-wide project from a concept through planning, design, and finally, implementation. Both projects received financial support through grant funding, so we understand the reporting and management requirements associated with grant assistance.

**8. Ultimate project funding.** We plan to apply for grant(s) to fund construction of the Southbreeze Shoreline Stabilization project, and Arundel Rivers Federation has committed to helping us when the time comes (see their Letter of Commitment in Attachment A). Potential grant options include CBT's Anne Arundel County Watershed Restoration and Protection Grant Program, CBT's Outreach and Restoration Grant Program, NFWF's Small Watershed and WILD Grants, and the DNR Shoreline Restoration Loan Facility. The latter could also augment or replace community reserves for match funding requirements.