



Agenda Item: Discuss and Consider Proposed Collaboration with Project Vesta (Kimberly Danesi, 15 minutes)

Background:

Project Vesta (PV) is a research-based organization. They are working to reverse climate change and ocean acidification by greatly accelerating the Earth's natural long-term process of rock weathering through Coastal Carbon Capture. Carbon-removing sand made of the mineral olivine is added to the ocean. There, the sand dissolves, countering ocean acidification and permanently removing carbon dioxide from the atmosphere.

www.vesta.earth

The project aims to deploy around 4,000cy of carbon-removing sand, made of the mineral olivine, in the initial placement to establish regulatory approval and set up the site-specific monitoring program. They would then deploy anywhere between 40,000 to 80,000cy as nearshore placement in the second phase. Regulatory approvals and scientific investigations will be the initial and largest effort for the project, which will be a lengthy process. They are anticipating the physical deployment of a project in 2023-2024.

At the May 2022 BMAC meeting this topic was introduced and sparked much discussion and lots of questions. Staff was asked to follow up with PV and bring the conversation back to BMAC. The following is a listing of such and an effort to provide responses:

Where in the Northern Caribbean is PV trial location?

Answer: We are currently developing projects in the Dominican Republic; Duck, North Carolina; and Hamptons Long Island, New York.

PV mentioned Norway being your primary source for the material. If you are hoping for a site in the US, why would you bring material from so far away when it is found in many US states?

Answer: Olivine is widely distributed world-wide. During this R&D project stage, we are likely to use the material from Norway to provide a consistent character of the projects we are testing. The olivine sand source for a Galveston project will not be determined until the project design is advanced.

PV initially mentioned that the following would be next steps. Are there any other milestones that you would include?

- a. Work will begin to identify sites in Galveston where the project might be feasible
- b. Set up the Memorandum of Understanding (MOU) to jointly pursue the project
- c. Project Vesta would then engage with an engineering firm (with input from the Park Board); refine the project scope; draft a statement of work; develop a fee estimate; develop a schedule to design and permit a phased project.

ANSWER: Internally, our Project Development Team begins with identifying possible deployment opportunities, specifically a general location, quantity, and grain size. We gather information about the site, sediment transport rates, water depths, sensitive habitat and other site factors. If the site looks promising -- and the PV Managers accept the project -- we then move on to refine the project idea and contract with a coastal engineering firm to develop, design and permit the project. At this stage, we

would also work to develop the MOU with the Park Board. As you can see, this is a step-by-step process. I would expect it to take about 60-90 days to identify and screen candidate placement opportunities and develop an MOU. Once we have identified the best engineer to work with, the PV contract development process requires, based on current experience, about 60 days.

Is there anywhere that it has been approved for a carbon credit?

Answer: In this R&D stage, PV is developing the science and technology to quantify and verify carbon offsets from the nearshore deployment of olivine sand.

Have you engaged in any way with the Texas General Land Office CEPRA department?

Answer: Ryan Hostak, formerly with the GLO CEPRA team, is now working with PV. Ryan has had intro discussions with some GLO senior staff regarding PV's initiatives. We hope to engage the GLO once we have identified a suitable Texas project opportunity. We hope our project partners will play a positive and supporting role in the permitting process.

Do you already have any project partners like TAMUG or are you relying on the Park Board for an entrée into these types of relationships?

Answer: We would take the lead on working with TAMUG. If we are able to identify a project placement opportunity with you, PV will be developing a comprehensive pre- and post-deployment monitoring program for the project. PV's science team seeks to collaborate with local experts and universities. The exact roles and relationship with TAMUG will depend on their availability, expertise and willingness. TAMUG is definitely a positive factor in setting up a project in Galveston.

If Galveston became a pilot site would Project Vesta provide ongoing free sand for the island?

Answer: If we can successfully develop, permit and deploy an olivine placement project in Galveston, PV is interested in repeat olivine deployments that are integrated into the County's shoreline management program. The sand for PV deployments is provided at our cost.

Would there be any monetary investment in Galveston from Project Vesta for ongoing beach nourishment?

Answer: Long-term, PV is exploring how it might work with coastal community partners in the future and would be interested in discussing this topic.

As mentioned at the May meeting, no funding support for engineering, permitting or to deploy a project is being requested of the Park Board by Project Vesta.

Staff Recommendation:

Staff is soliciting a recommended direction to take with Project Vesta to bring before the Trustees at an upcoming meeting.

Funding Source (if applicable):

N/A