Erica Yelensky **June 5, 2017**

Re: Justification for Coastal Research Institute Interns

The Bay Foundation has had an MOU in place with the Fred Seaver College of Science and Engineering since 2005. The MOU was established in order to collaborate as a regional organizing body connecting research across disciplines, as well as a forum for the dissemination and discussion of results focused on the Santa Monica Bay and associated watersheds.

To date over 10,000 hours have been spent by LMU students as either volunteers or interns to further the Comprehensive Monitoring and Management Plan for the Santa Monica Bay National Estuary Program, identified as The Bay Restoration Plan.

For the summer of 2017, with the encouragement of US EPA, US EPA Region Nine and the Technical Advisory Committee and Management Committee of the SMBNEP, TBF developed in collaboration with the Fred Seaver College of Science and Engineering the first CRI Summer Intern Program. The CRI Summer Intern Program is a paid intern program where LMU students are supported by the SMBNEP for a six week internship directed at research, restoration, monitoring and communications related to The Bay Restoration Plan and on projects identified in the 2017 Annual Work Plan of the SMBNEP. EPA 320 funds are used to financially support these students via a stipend, housing, and supplies. The interns work 20 plus hours per week for six weeks and are provided on campus housing if requested. The cost per intern is 6,000 for the six week term.

Six interns were selected this year to support research, restoration and monitoring involving the following five projects for a total cost of $36,000; 1) Wetlands Restoration and Research, Restoration, 2) Research and Outreach of the LAX Dunes, 3) Microplastics, 4) Healthy Beaches Research and Monitoring Project, and 5) Tidepool Research. These projects are supported by grants and other funds developed by The Bay Foundation and partners in addition to 320 funds being assigned to accomplish the goals of the SMBNEP.

Wetlands Restoration and Research
Description: Wetlands and riparian areas such as streams and rivers provide vital functions and services in the Santa Monica Bay watershed. These water-dependent habitats provide habitat for rare species, filter water and improve air quality, provide flood and erosion protection, act as a refuge for migrating birds, and have educational and cultural values. There are several ongoing wetland and stream restoration projects in the Bay that need ongoing monitoring, maintenance, and targeted research. This project may include fieldwork, labwork, and research at the Malibu Lagoon, the Ballona Wetlands, or other sites. The LMU intern for this project Samantha Geier is an Environmental Science major and

LAX Dunes Restoration, Research, and Outreach
Description: The LAX Dunes, which lie between the west end of Los Angeles International Airport and the Pacific Ocean, are the largest remaining representation of coastal dune community within Southern California. The 302-acre Dune site is owned and managed by Los Angeles World Airports. The site provides habitat for over 900 species, some of which cannot be found anywhere else on Earth. It is home to the beautiful and delicate federally endangered El Segundo Blue Butterfly, and other rare plant, animal, and insect species. This project will include helping to coordinate and participate in community restoration events and conduct research and ongoing restoration monitoring. Two LMU interns will be working on this project over the summer. Jordan Robinson (Biology) and Valeria Ceja (Environmental Engineering).

Microplastics
Description: Microplastics are small pieces of plastic that can be found in the environment and are harmful to wildlife. We are working with Dr. Landry analyzing beach sediment near Ballona creek for microplastics. This study will finalize protocol development for collection and analysis of microplastics found in sands and sediments in Santa Monica Bay. Analyses will involve the use of infrared microscopy to identify microplastics found and may include a targeted pilot research question. LMU intern Michael Dea (Biology: pre-med) will be working closely with Dr. Landry and TBF.

Healthy Beaches Research and Monitoring Project
Description: Oriana Strieleman, a biochemistry major at LMU and a summer intern for TBF, is working to document bird nesting activities and habitat conditions for the Federally-threatened western snowy plover and identify how beach restoration components affect nesting. This project will build on LMU student work from 2016 and 2017 conducting research on healthy beaches in the Santa Monica Bay. Although sandy beaches traditionally have been, and continue to be managed primarily as recreation areas, they are also important natural ecosystems that link marine and terrestrial environments and are considered one of the seven major natural habitats in the Bay. Beaches in the Bay have been highly impacted from mechanized grooming (racking) and the goal of this project is to bring back a diverse, endemic-rich, coastal plant and wildlife community which has been almost completely extirpated from the LA region. The project will involve fieldwork and beach monitoring, research, and restoration.

Tidepool Research
Description: This project will assist with research related to the preservation and restoration of tide pools in the Los Angeles area. Tidepools are unique to the rocky intertidal environment where pools of water persist even after the tide has ebbed. Elsewhere, at similar elevations, the rocky intertidal is directly exposed to the atmosphere. This position will support research led by TBF and LMU faculty in understanding how physical and chemical factors impact the health and condition of organisms that inhabit tide pools. Intern Candice Cross (Biology) will take on tasks involving the collection and entry of data from the field, laboratory, and from existing research. The applied focus of this work will inform programmatic approaches to further research related to tide pools and climate change.

The CRI Summer Interns are expected to complete their internship and write up the results of their efforts for the SMBNEP to use to guide/inform; ongoing or future monitoring efforts, adaptive management of natural resources, improved communications, and advancement of goals identified in the SMBNEP Annual Work Plan. The final reports may be used in whole or in part and may be incorporated or stand

alone as components of the SMBNEP's semi-annual reports to the US EPA and to the SMBNEP's State of the Bay Report. In addition, the interns will present their research at a symposium to occur in the fall disseminating and discussing their research with their classmates, peers, faculty, families, as well as the staff of The Bay Foundation, the Santa Monica Bay Restoration Commission and the SMBNEP management conference.

The Fred Seaver College of Science and Engineering at LMU is contributing to the CRI Summer Interns via administrative, communications and faculty support, use of scientific analytical equipment, laboratory space, and other facilities. These services are in-kind contributions to be quantified as part of the match for the SMBNEP 320 funds. The value of this match is expected to be at least a one to one level.

We are very encouraged by this program and by the support we've received in the development of this concept through implementation. TBF sees this as a working model to increase the impact, effectiveness of the capacity of the SMBNEP to conduct restoration and monitoring that protects the benefits and values of Santa Monica Bay and its watersheds.