



ATTN: Marlene Alvarado  
California Coastal Commission  
South Coast Area Office  
200 Oceangate, Suite 1000  
Long Beach, CA 90802-4302

August 17, 2016

**Re: Response to NOTICE OF INCOMPLETE APPLICATION**  
Coastal Development Permit Application No. 5-16-0632  
City of Santa Monica; Applicant

Dear Ms. Alvarado and Honorable Commissioners:

The Bay Foundation (TBF) would like to provide the following additional information about the Santa Monica Beach Restoration Pilot Project (CDP Application No. 5-16-0632) in response to the Commission's request letter dated 17 August, 2016. We are responding as the agent on the application materials. Thank you for the opportunity to provide supplemental information for this beach restoration project. The questions posed by the Commission staff are in **bold** print, followed by TBF's responses.

Additionally, a project overview is publically available online on the project's webpage through TBF <http://www.santamonicabay.org/santa-monica-beach-restoration-pilot/>, as are all public documents and application materials, artistic renderings, maps, photographs, project proposal, and summary project information. At the request of the public, TBF also created a page with easily-accessible drop-down Frequently Asked Questions: <http://www.santamonicabay.org/santa-monica-beach-restoration-pilot/samo-faq/>. Many of the answers to the questions below can also be found on the FAQ page of the website in summary form. Please do not hesitate to contact us with any additional questions or needs.

**1. Why was the proposed project site selected for the restoration area? Were alternative locations considered along the beach?**

During the initial planning phases of this project, several sites along beaches throughout the Santa Monica Bay were considered. TBF staff met with beach managers throughout the Los Angeles region during 2014 and 2015 to conduct initial outreach about the project and to gauge interest and implementation potential. The City of Santa Monica (City) and the California Department of Parks and Recreation (State Parks) both expressed interest in partnering to conduct the proposed pilot project on beaches that they own or manage, and both agencies were very supportive throughout the planning process. They both recognized the need for a pilot project of this scale to inform beach management practices, and the potential for this project to transform a small area into a sustainable coastal strand and foredune habitat complex resilient to sea level rise and erosion. Thus, the project location was targeted within the beaches that the City managed and maintained for State Parks.

The specific site selection for the project was based on a variety of criteria conducive towards restoration success, including: potential habitat value, current beach use and management practices, sea-level rise climate change model predictions, proximity to local businesses and residents, project exposure and



access for the community, and input from the City and other stakeholders. A series of meetings and conference calls were held in 2015 and 2016 to narrow down the potential location, and the final choice was selected based on a combination of beach management, public stakeholder, and scientific input. Specific alternative locations adjacent to or in the same footprint as the existing Western Snowy Plover habitat (approximate GPS coordinates: 34.020364, -118.511156) were also considered, but rejected, due to more frequent alternative beach recreation activities occurring in those locations and the desire by the City and local residents to try the pilot project in an area with lower numbers of existing recreational beach users. Lastly, the project area was further refined after subsequent individual meetings with local residents, property owners, and the City.

Returning broad ecosystem functions will create increased protection for coastal infrastructure and residences from sea level rise and erosion while providing a vital refuge for invertebrates, birds, and rare coastal vegetation species. This pilot project will also serve as a model for the region, showing that heavy recreational use of beaches and meaningful habitat restoration are not incompatible goals.

**2. On the submitted site plan there is a white dashed line that is perpendicular to the beach. Why is this line labeled the county line?**

This line is labeled the county line because it is the delineated line between the beach property that the City manages as an easement for State Parks (please see their letter of support as an attachment to the CDP application) and the LA County beach jurisdictional area. It is the official, geospatially-rectified jurisdictional County line for beach management. It helps illustrate (especially to beach managers) that the project falls within a City-managed beach area and also gives context for the specific site location.

**3. What is the complete proposed native plant palette for seed applications in the restoration area? You've mentioned sand verbena, beach evening primrose, sea scale, and beach bur? By sea scale, do you mean Salt Heliotrope? Please provide the Latin names of the vegetative species proposed to be seeded.**

The complete proposed native plant palette for seed application in the restoration area is outlined in the table below. These native California species were chosen based on characteristics including a high salt tolerance, the ability to stabilize surrounding sand and form small plant hummocks and dunes, low-to-no water requirement, low-lying mature plant height, and aesthetic value (including flowering). The species were chosen by scientists who are advising ongoing project planning efforts, and were vetted to the public in documents, on the website, and at a public meeting.

To further clarify the question, the species 'sea scale' refers to *Atriplex leucophylla* and not salt heliotrope (*Heliotropium curassavicum*, alternately 'seaside heliotrope').

Native Plant Species	
Common Name	Scientific Name
Beach evening primrose	<i>Camissoniopsis cheiranthifolia</i>
Sand verbena	<i>Abronia maritima</i>
Beach bur sage	<i>Ambrosia chamissonis</i>
Sea scale	<i>Atriplex leucophylla</i>



**4. Will the vegetation be seeded, or will mature plants be installed? What is the source of vegetation? If seeds, how will the seeds be dispersed (e.g. sprayed, hand dispersal)?**

All proposed vegetation will be hand-seeded. No mature plants will be installed. Numerous studies and on-the-ground dune restoration practices have evaluated dune vegetation establishment in Southern California beaches (see literature list in Attachment A at the end of this letter). Coastal strand vegetation propagation through seeding allows for more successful long-term establishment of the plants, as roots naturally form and anchor in the unstable sand. Consultation with scientists who have successfully implemented similar projects in Southern California have identified hand-seeding as having a higher overall success rate than planting individual container-stock plants in coastal strand habitats, which often suffered mortality. It will also allow for the evaluation of success of the lowest-effort and most passive form of restoration. This seeding method will allow for even less disturbance and effort than the current practice of 'grooming', or raking the sand flat using mechanized heavy equipment.

The source of seed will be from [S&S Seeds](#), who specialize in native California plant seed and have extensive experience regarding the seed requirements of habitat restoration projects. They specialize in drought-tolerant native vegetation. During preliminary surveys of beaches throughout the Santa Monica Bay, the appropriate vegetated habitat type from which to collect seeds was almost non-existent, and the project team determined that no impacts should be incurred by the remaining small, struggling populations of native plants due to this project. The seeds will be dispersed through hand-held seed spreaders followed by gently raking in to minimize seed loss through wind-driven transport or by opportunistic birds.

**5. What site preparation work is needed?**

No site preparation work is needed for this project. The only work that will be conducted prior to the implementation of the project will be pre-restoration monitoring. The City has graciously offered to help install the small sand fence, bringing it out on a cart, and it will be placed in one day along the perimeter of the site (see maps). No irrigation lines, electricity, pavement materials, or other preparation materials are required.

**6. Is the need for irrigation anticipated to help initiate vegetation growth? If so, please submit two (2) hardcopies of the proposed landscape and irrigation plan.**

No. Seeding will be optimally timed with the fall/winter season to allow for natural germination and establishment during the winter rains. This will allow for the scientific evaluation of the success of a predominantly passive restoration effort. Additionally, it will not impact water resources for the City or any local residents, and will show that low-impact restoration efforts in this habitat type are possible without significant maintenance or watering activities, which is especially important during our current drought.

**7. Will beach area beyond the project site be temporarily displaced for public use? Where is the staging area? Please provide a staging plan.**

No. The beach area beyond the project site will not be temporarily displaced from public use. There will be no staging area needed for this project, as it is primarily a passive, small-scale restoration effort.



**8. The project renderings show two types of fencing.**

**a. Which type of fencing is currently being proposed: picket or post and rope?**

As shown in the project renderings and on the project website, two types of fencing are proposed. Three sides of the perimeter of the project will have t-posts with sand fencing installed, and the ocean-facing perimeter will be fully open to allow access to beach recreational users. The sand fencing is necessary for the implementation of the project (see answer “c”, below), but it is not intended to keep the public out.

Additionally, at the request of the public, a pathway through the middle of the project site is proposed, and it will have a symbolic post and rope fence. This will allow for maximum public recreational opportunities, viewing, and interactions while walking through the restoration area (e.g. bird watching).

**b. What is the proposed fence height?**

As stated on page 7 of the CDP application, and at the request of local residents and stakeholders, the maximum height of all fencing will be 3 feet.

**c. Is the fencing necessary for stabilization of the site to help the dunes form? How long will the fences stay in place?**

The fencing is necessary to delineate the site for multiple reasons. The first is so beach managers and maintenance workers can easily identify the site perimeter to avoid sand grooming maintenance within the project area. Fencing will not be installed on the shoreline perimeter of the project, primarily to allow birds, the public, and other wildlife to enter the site. The public is not prohibited from using the area, only urged to walk through the site using the pathway lined with symbolic fencing or to walk around. This project uses semi-passive dune restoration techniques, and is combined with restricting beach grooming maintenance within the project area. Fencing is absolutely necessary to delineate the site, and to allow dunes and plants to establish.

As an alternative to traditional hardscaping options, this project will evaluate a living, restored shoreline with a diverse wildlife community as an alternate approach to address climate change. Seeded and planted specialized coastal strand and foredune vegetation will grow, develop, and begin trapping sand transported by wind. Wind-driven sand will bump into vegetation, fall, and accrete, naturally increasing the elevation of plant hummocks over time to an estimated height of between 2-3 feet. Additional trapping of sand will occur through the deployment of the sand fence. Because beach dunes accrete sediment transported from the ocean, they will continue to grow concurrently with rising sea levels and will be resilient to erosion. This dynamic process can continue as long as the vegetation community is robust and healthy. This process has repeatedly been demonstrated in the scientific literature as well as in pilot projects in other counties, such as the Surfer’s Point restoration project in Ventura County.

**d. Will the fencing be removed once the dunes have established? Or will the public be prohibited from the area once the dunes have established?**

Long term monitoring is an important component of this pilot project. The fencing will be evaluated periodically, and may be considered for removal once the dunes have established. We anticipate, based on other similar projects, that dune establishment will take a minimum of 1-3 years; however, TBF is committed to a 10-year monitoring plan as stated in the MOU with the City of Santa Monica. The project



may be periodically re-evaluated at the request of the City or local residents and stakeholders. The current design of the project does not prohibit the public from using the area, as the shoreline side of the project is not fenced. The fencing serves to delineate the area for beach managers and also serves as preferential guidance for the public to use the pathway through the site or walk around.

**9. What if the vegetation escapes from the restoration site and spreads to other beach areas? Is this a concern? How often is the beach surrounding the project site groomed?**

All current beach management activities will be continued outside the project area by the City of Santa Monica with the same frequency as current maintenance activities. The City is still responsible for maintenance activities outside the project area, as part of their partnership with State Parks. Thus, the current, existing grooming and maintenance activities will all resume outside the project area and the project will not impact or have any bearing on those activities. Maintenance and grooming is scheduled by the City and is variable based on need and season.

No, there are no concerns by any of the beach managers, the property owner (State Parks), nor any interested stakeholders. This project is an excellent example of a well-noticed public process that has engaged many different stakeholders over the last year, and we have heard no opposition despite many public meetings, announcements, a public website, and a thorough noticing process that included over 200 mailers to local residents.

**10. What is the proximity of the project site to the western snowy plover habitat area in Santa Monica? Are the plovers anticipated to use the dune site in the future?**

The proposed project site is approximately 500 meters north of the temporary western snowy plover (*Charadrius alexandrinus nivosus*) enclosure. Currently, plovers spend time during the winter in that location, but no nesting activity takes place. The fence for the plover enclosure is deployed based on plover surveys conducted by the Audubon Society and is removed for a portion of every year. The best local ornithologists and bird experts consulted for this project agree that plovers may potentially use the pilot project habitat area, once it becomes established, but also emphasized that a high level of site fidelity is common for plovers. They are looking at it experimentally as an unknown.

This project will not impact or alter in any way the existing plover enclosure in Santa Monica. The temporary deployment of that sand fence will continue, according to the same processes already established by the City of Santa Monica.

**11. Are signs being proposed?**

Educational and interpretive signage may be installed on the fence posts around the perimeter of the site, but no stand-alone signage is currently planned as a component of this project. The public is very interested in the possibility of interpretive signage, but there is currently no funding for any extensive formalized signage separate from signs along fence posts.

**12. Is grant funding involved?**

Yes. We are grateful to have support for this project from multiple small grants, including the US Environmental Protection Agency and the Annenberg Metabolic Studio.



**13. (supplemental question sent via email on 8/17/2016 at 10:59am):**

**Do you have the beach usage data for this particular site? How heavily is this area used compared to the south beach area?**

While exact numbers of beach use by the public over time (and by season) are highly variable and difficult to estimate, this specific project location was chosen as an ideal pilot test location because of the lower numbers of recreational beach users on average than the southern beach areas in Santa Monica closer to the Santa Monica Pier. Significant efforts were made to engage local residents to participate in the early planning process, and care was taken to work around existing beach uses like summer surf camps. TBF will be including counts of various types of beach users in the overall monitoring plan for the project to inform numbers and types of beach uses within and adjacent to the project. We hope that this project will serve as a model for the region, showing that heavy recreational use of beaches and meaningful habitat restorations are not incompatible goals.

Additionally, the City's concurrent update of the Local Coastal Plan (LCP) and evaluation of future impacts of sea level rise and climate change are a driver for innovative adaptation projects that protect beaches (<http://www.smgov.net/Departments/PCD/Plans-Projects/>). Protection, preservation, and restoration of the natural environment is a high priority of the City as stated in the Sustainable City Plan (<http://www.smgov.net/uploadedFiles/Departments/OSE/Categories/Sustainability/Sustainable-City-Plan.pdf>). This project is an opportunity to conduct a pilot test to evaluate a softscape alternative.

**Additional Narrative:**

TBF, in partnership with the City of Santa Monica, have dedicated a significant amount of time coordinating this project and proactively reaching out to local business, residents, and interested organizations. This pilot project aims to transform a small portion of the current beach into a living shoreline, providing a diverse, endemic-rich, coastal plant and wildlife community resilient to sea level rise. This demonstration site will not only provide a scientific basis to develop guidelines and protocols but an integrated, locally-based program for increasing the usefulness of natural environments in a highly developed region. Additionally, it will evaluate "soft" low-cost natural shore protection from sea-level rise and storms while providing public benefits and enhancing natural resource values. TBF is proposing a robust scientific monitoring component that will inform climate change planning efforts for the region.

A diverse set of entities have shown support for this project including: State Parks, City of Santa Monica, Santa Monica Bay Restoration Commission, University of California, Santa Barbara, Loyola Marymount University, Audubon Society, California Native Plant Society, Heal the Bay, Friends of Ballona Wetlands, several elected officials, and additional expert scientists. Additionally, the public meetings that have been conducted for this project have shown enthusiastic support from local residents, with some individuals pleading for a larger restoration area, ending ultimately in a "ribbon of nature" along our coastline. We believe that this project has the potential to inform much larger efforts in Los Angeles and beyond.

Consistent with the California Coastal Commission mission to protect and enhance California's coast and ocean for present and future generations, TBF's mission for over 25 years has been to improve water quality, conserve and rehabilitate natural resources, and protect the Santa Monica Bay's benefits and values for people. The Santa Monica Beach Restoration Pilot Project furthers both missions through rigorous science, public participation, education, and state and local coordination. In the face of climate change, communities and decision makers need to plan and implement innovative projects, like the Santa Monica Beach Restoration Pilot Project, to develop adaptation strategies that foster resilience and protect valuable coastline areas.





Thank you for the opportunity to respond to your questions, and please do not hesitate if you have any additional questions or concerns.

Sincerely,

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### **Attachment A: Supplemental Scientific Literature References**

- Dugan, J. E., D.M. Hubbard, M. McCrary, M. Pierson. 2003. "The response of macrofauna communities and shorebirds to macrophyte wrack subsidies on exposed sandy beaches of southern California." *Estuarine, Coastal and Shelf Science* 58S: 25-40.
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- \* Nordstrom, K.F., Jackson, N.L., and Korotky, K.H. 2011. "Aeolian transport across beach wrack." *Journal of Coastal Research*. 1(59):211-217
- \* Nordstrom, K.F., Jackson, N.L., Korotky, K.H., and Puleo, J. 2011. "Aeolian transport rates across raked and unraked beaches on a developed coast." *Earth Surfaces, Processes, and Landforms*. 36:779-789
- \* Nordstrom, K.F., Jackson, N.L., Freestone, A.L., Korotky, K.H., and Puleo, J. 2012. "Effects of beach raking and sand fences on dune dimensions and morphology." *Geomorphology*. 179:106-115
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- \* United States Fish and Wildlife Service (USFWS). 2007. "Recovery Plan for the Pacific Coast Population of the Western Snowy Plover (*Charadrius alexandrinus nivosus*)." In 2 volumes. Sacramento, California. xiv + 751 pages.