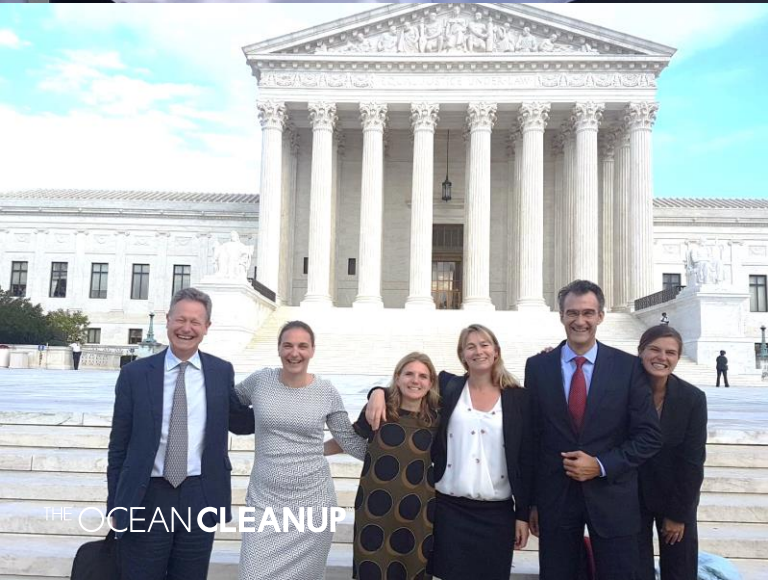


THE OCEAN CLEANUP™

THE LARGEST CLEANUP IN HISTORY

USA – Los Angeles County; Ballona Creek Project

DECEMBER 2021



THE OCEAN CLEANUP

INTRODUCTIONS



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M.Sci. Marine Biology (Florida Tech)
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Marine Biologist and subject matter expert (SME) advising on environmental aspects for The Ocean Cleanup, *with experience in the following:*

- Writing Biological Opinions for ESA Section 7 permitting at NOAA Fisheries headquarters, Office of Protected Resources.
- Supporting federal permitting process for at-sea activities in Southern California: NEPA, ESA, MMPA, CEQA, EFA/MSA, CZMA, NMSA, CWA.
- Advising as principal scientist of environmental consulting company for marine conservation and regulatory projects, including marine protected areas.
- Leading protected species and marine mammal observers on various projects.
- Steering Committee Member and SME for the Species Survival Commission Snapper, Seabream and Grunt Specialist Group for the International Union for the Conservation of Nature (IUCN)



WHAT IS SUBJECT OF TODAY'S MEETING?

BALLONA CREEK INTERCEPTOR PROJECT

- 60,000 + Pounds of Plastic Pollution and Trash per year flows into the environment from Ballona Creek

- Project identified by The Ocean Cleanup following systematic engagement at state (California Fish & Wildlife, EPA) and local level (Heal the Bay, LA WaterKeeper)

- November 15, 2019, The Ocean Cleanup signed an agreement with Los Angeles County Flood Control District



OUR MISSION

THE OCEAN CLEANUP

Founded in 2013 by Dutch inventor Boyan Slat at the age of 18, The Ocean Cleanup is a Dutch non-profit foundation (501(c) (3) in the US, 'Stichting' in the Netherlands) and headquartered in Rotterdam, the Netherlands.

WE **DEVELOP AND SCALE** TECHNOLOGIES TO RID THE OCEANS OF PLASTIC.

OUR AIM IS TO HAVE REMOVED **90%** OF FLOATING OCEAN PLASTIC **BY 2040**.



**CLEAN UP THE
LEGACY PLASTIC IN
THE OCEANS**



**STOP PLASTIC
FLOATING FROM
RIVERS TO OCEANS**

The background features a dark blue gradient with white wavy lines representing ocean waves. A large, dark blue silhouette of a hand is shown holding a globe. The globe is covered in white wavy lines and contains several small, colorful stars (yellow, blue, white) scattered across its surface.

OUR **2 PRONGED** APPROACH


In order to rid the world's oceans of plastic we need to not only clean up the plastic that is currently there, but also stop new plastic from entering the ocean.

In other words:

We need to close the tap

1000 RIVERS GLOBAL RIVER MODEL

- Top 1000 river inputs
- River inputs

 For more details visit
the interactive map

Source: The Ocean Cleanup interactive map



CLOSE THE TAP

1000 RIVERS ARE RESPONSIBLE FOR 80% OF RIVER PLASTIC OUTFLOW

Rivers are the main source of ocean plastic pollution. They are the arteries that carry waste from land to the ocean.

Our research found that 1000 rivers are responsible for roughly 80% of global annual emissions, which range between 0.8 – 2.7 million metric tons per year, with small urban rivers amongst the most polluting.



DATA & MONITORING

UNDERSTANDING THE PROBLEM

- Where do we find plastic in rivers?
- How does it move through rivers?
- What is the vertical distribution in the water?
- What is the composition of plastic?



HOW

- Research
- Modelling
- Site visits & Field campaigns (weeks to months)
- Working with local partners (Universities, NGO's, Companies)
- Depth trawl tools

ONE SIZE DOES NOT FIT ALL

INTERCEPTOR SOLUTIONS

No two rivers are the same. Factors like river width, depth, flow speed, debris composition, seasonality and tides all have a major influence on the success of a **river intervention**.

To **tackle different types of scenario** we are working on developing a family of different technology solutions, ranging from low tech to high tech.



INTERCEPTOR BARRIER



THE TEAM EXPLAINS
WHAT'S AN INTERCEPTOR



INTERCEPTOR TENDER



INTERCEPTOR TRASHFENCE



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PILOT PROJECT BALLONA CREEK

NOVEMBER 2021



PROJECT OVERVIEW

60,000 + Pounds of Plastic Pollution and Trash per year. The LA County's Board of Supervisors is committed to addressing plastic pollution and other trash in Ballona Creek -- the subject of major, ongoing complaint from residents and the environmental community. The plastic trash is swept into the Ballona Creek during storms and typically amounts to 60,000 pounds + each year

November 15, 2019, The Ocean Cleanup signed an agreement with Los Angeles County Flood Control District

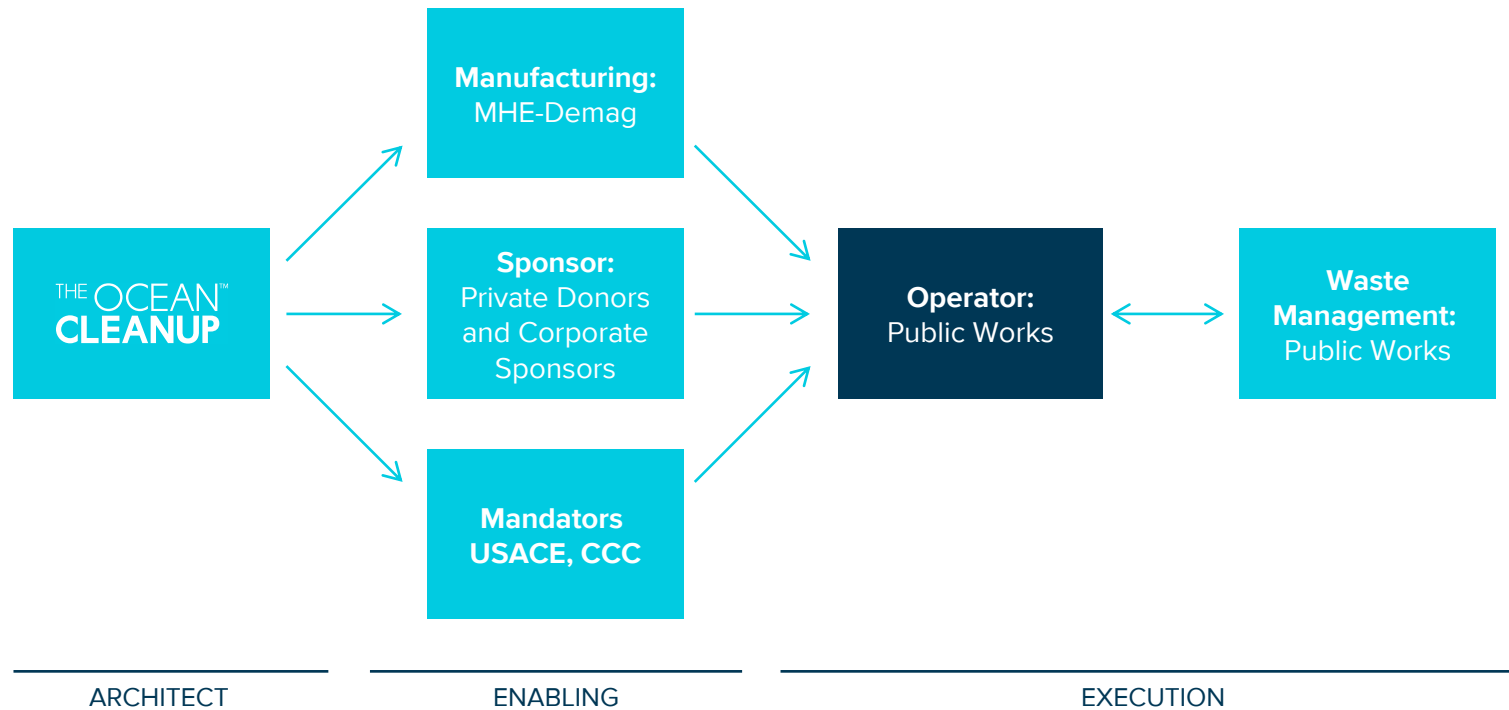
- two-year pilot project in Ballona Creek; DPW Objective Statement: "Capture trash within Ballona Creek before it reaches Santa Monica Bay and limit any adverse effects"
- stems from motions of the Los Angeles County Board of Supervisor
- address the concerns of the local community by radically reducing the large outflow of plastic and other trash into the ocean and onto beaches, especially following storms, using one of The Ocean Cleanup's Interceptor™ systems.

Signing ceremony in LA attended by Supervisor Hahn (LA County District 4 Supervisor), Mark Pestrella (Head of PW), Joost Dubois (The Ocean Cleanup), Roald Lapperre (the Netherlands' vice-minister for the Environment)

Public Support. In addition to publicity surrounding the launch of the pilot, a meeting with the community was hosted by Public Works in October 2020, eliciting widespread support and no objections.

RIVER DEPLOYMENT MODEL

EXECUTED VIA LOCAL CONSORTIA





COLLABORATION AGREEMENT

The pilot project covers **two storm seasons** defined as the period October to April inclusive.

Success will be measured against a series of **Minimum Performance Criteria** (MPC) for operation and maintenance of the Interceptor.

If the MPC are met after 2 storm seasons, The Ocean Cleanup will provide LA County with ownership of the Interceptor **free of charge**.

Otherwise, The Ocean Cleanup will retain ownership and be required to remove the Interceptor to a new location within five months.

MINIMUM PERFORMANCE CRITERIA

1. At least 50 percent of the plastics and other trash captured
2. Uptime >90 percent during and following storm events / if there is trash present at the site
3. No interference with the operation and maintenance for flood control purposes
4. No adverse environmental effects that cannot be feasibly mitigated; or the benefits of operation and maintenance of the Interceptor outweigh any unavoidable adverse environmental effects
5. To be kept in a safe and secure condition while not in use (i.e., between storm events or other times when there is trash present at the Site), using existing District maintenance personnel and within District's projected funding levels for maintenance activities in Ballona Creek
6. To be integrated with the District's overall strategy for reducing plastics & other trash
7. No substantial complaints from members of the community in the vicinity of the site
8. No unreasonable interference with recreational or other existing or planned uses of Ballona Creek



SOLUTION: THE **INTERCEPTOR** ORIGINAL

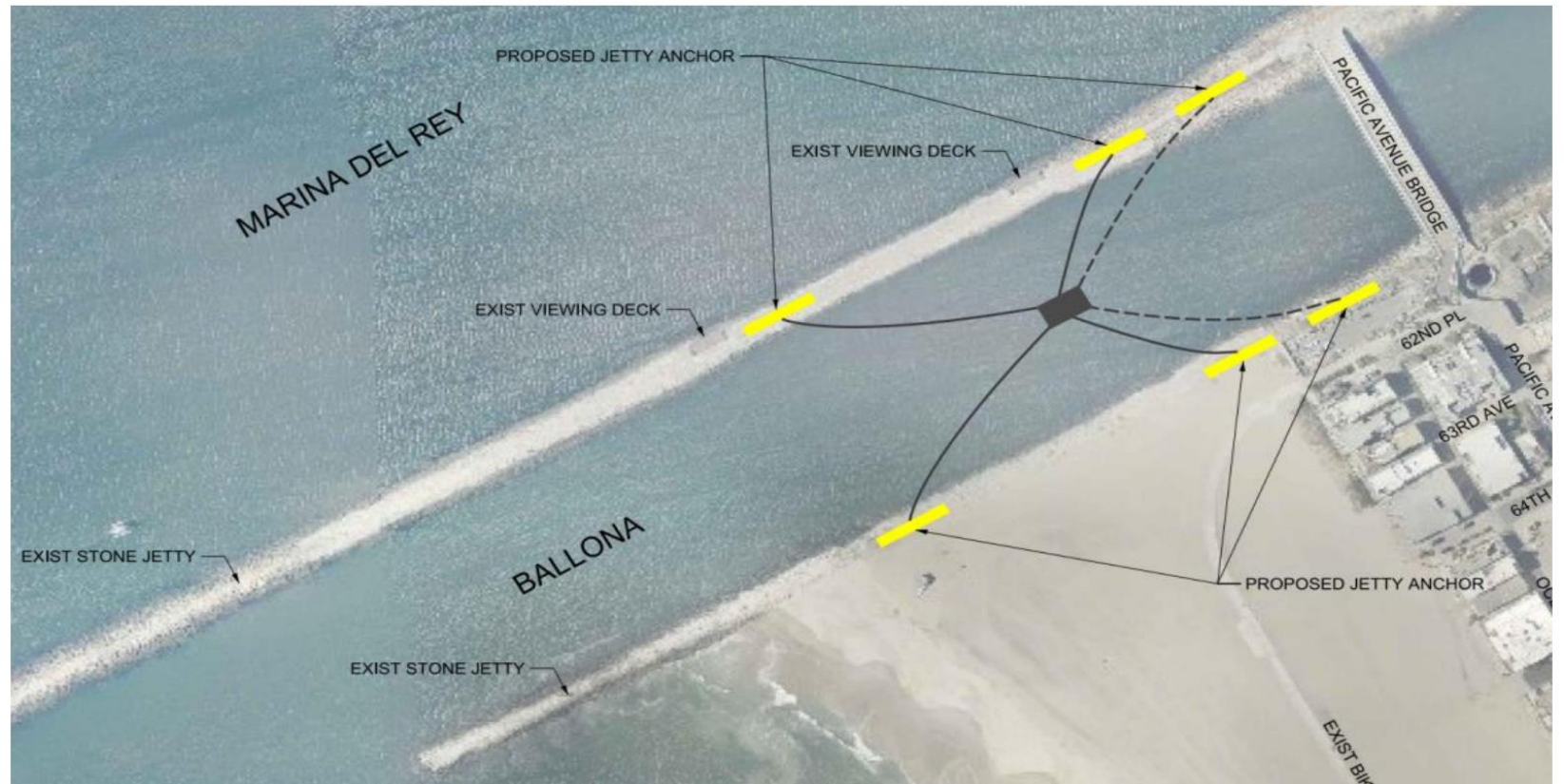


- Catamaran design allows plastic to flow freely into the device and water to continue with the current
- Barriers concentrates the debris and directs it to the mouth of the Interceptor
- Waste is transferred up the belt to an automated shuttle that distributes the debris between one of six containers located on a separate barge
- Once full, the barge is extracted, and the waste is transferred to a local waste management facility
- Designed to be autonomous: solar-powered
- Designed to be quiet: 60dB produced by the Interceptor is slightly quieter than a car travelling 30mph from 50 ft away. From a distance, the Interceptor is not audible



DEPLOYMENT LOCATION

Location Determined for Operational Success. For operational and regulatory reasons, a location for deployment of the Interceptor was chosen by LA County Public Works downstream of Pacific Bridge. The Interceptor Original will be moored in Ballona Creek through attachment to six moorings to be installed above the ordinary high-water mark of Ballona Creek along two existing adjacent jetties.



OFFLOADING

Once the Interceptor containers are ready to be unloaded, the barge is tugged to an offloading site in Marina Del Rey.



THE INTERCEPTOR IN BALLONA CREEK

COMPUTER GENERATED IMAGE



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PERMITTING & ENVIRONMENTAL CONSIDERATIONS



PERMITTING & ENVIRONMENTAL CONSIDERATIONS

We comply with environmental permitting requirements; the following permits have been granted/ waived for the current location:

- USACE Section 408 - **Granted**
 - NEPA - Exempt
 - CEQA - Notice of Exemption - Categorical Exemption State Type. After pilot phase, CEQA permitting requirements will need to be fulfilled.
- USACE Section 10 – **Granted**
- USACE Section 401 - **Granted**
- Clean Water Act Section 401 – Water Quality Certification and Order – **Granted**
- California Coastal Commission Coastal Development Permit - **Granted**

In addition, our Environmental Team takes steps to anticipate and reduce potential risks based on the project's operations.



PERMITTING & ENVIRONMENTAL CONSIDERATIONS

As part of the permitting process and after consultation with California Department of Fish and Wildlife, the following Environmental and Biological assessments were performed:

- Preliminary Jurisdictional Wetlands Delineation Report
- Biological Resources Technical Report
- Marine Resources Assessment
- Cultural Resources Assessment





CONCLUSIONS

PRELIMINARY JURISDICTIONAL WETLANDS DELINEATION REPORT

The report concludes that impacts to non-wetlands waters of the US and California Department of Fish and Wildlife jurisdictional waters are not expected to occur, as the Interceptor Pilot Project:

- Does not involve the discharge of dredge or fill material;
- Does not substantially divert or obstruct the natural flow of Ballona Creek;
- Does not substantially change or use any material from the bed, channel, or bank of Ballona Creek;
- Does not deposit or dispose of debris, waste or other material containing crumbled, flaked, or ground pavement where it may pass into Ballona Creek.



CONCLUSIONS

MARINE BIOLOGICAL ASSESSMENT

The outcome of the assessment concludes that the proposed project would result in limited impacts to in-water biota and habitats found in the study area:

- Construction is limited to upland construction in an urbanized area, with no in-water construction proposed,
- Any impact associated with barge placement is anticipated to be of a short-term, temporary nature and is not expected to have permanent or population-level impact to sensitive habitat or species, essential fish habitat, or managed fish species.
- One potential impact may occur to marine reptiles and marine mammals which could be struck by boats or boat motors at the study area. While it is unlikely that sea turtles or marine mammals would occur in the study area, incorporation of suggested protection measure would reduce any impacts to less than significant.
- No significant impacts to wetlands, upland habitat, wildlife migration or corridors are anticipated.
- Cumulative impacts are considered to be less than significant.



RECOMMENDATIONS

CULTURAL RESOURCES ASSESSMENT

The assessment concludes that it is unlikely that the project would impact archaeological or tribal cultural resources.

Only one historic property, the Pacific Avenue Bridge, is within the area of potential effects of the project. It is found that the project would not diminish the identified qualities of significance of the Pacific Avenue Bridge.

THE INTERCEPTOR IN BALLONA CREEK

COMPUTER GENERATED IMAGE



THE OCEAN CLEANUP™

—
WHERE ARE WE
NOW?



WHERE ARE WE NOW? (DEC '21)

- Depending on the year, 60,000 + Pounds of Plastic Pollution and Trash still makes its way into the ocean from Ballona Creek
- After two years, all the necessary permits are in place to enable the Interceptor pilot to commence from October 1, 2022
- This has entailed an investment of several hundred thousand dollars by LA County
- This has been matched by considerable investment from The Ocean Cleanup
- Furthermore, if the pilot is successful, The Ocean Cleanup will give the Interceptor Original to Public Works free of charge
- **A small group of beachfront residents is now threatening the project:**
 - June 2021 – Meeting Supervisor Hahn/ Public Works => PW asked to perform bathymetric survey to look at feasibility of moving the Interceptor Original upstream of PAB
 - September 2021 – Meeting PW/ concerned residents reporting on results of the bathymetric survey => outcome supports current location
 - November 2021 – *community meeting planned => cancelled as no new deployment location can be proposed*

NEXT STEPS

- Project is in peril
- Shipment booked for Q1 2022
- Welcome questions and views from attendees in relation to project and next steps