



Makai - Marine Debris Removal Platform

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Third Place Coded Solution - Hawaii Annual Code Challenge 2023



Introduction

Problem

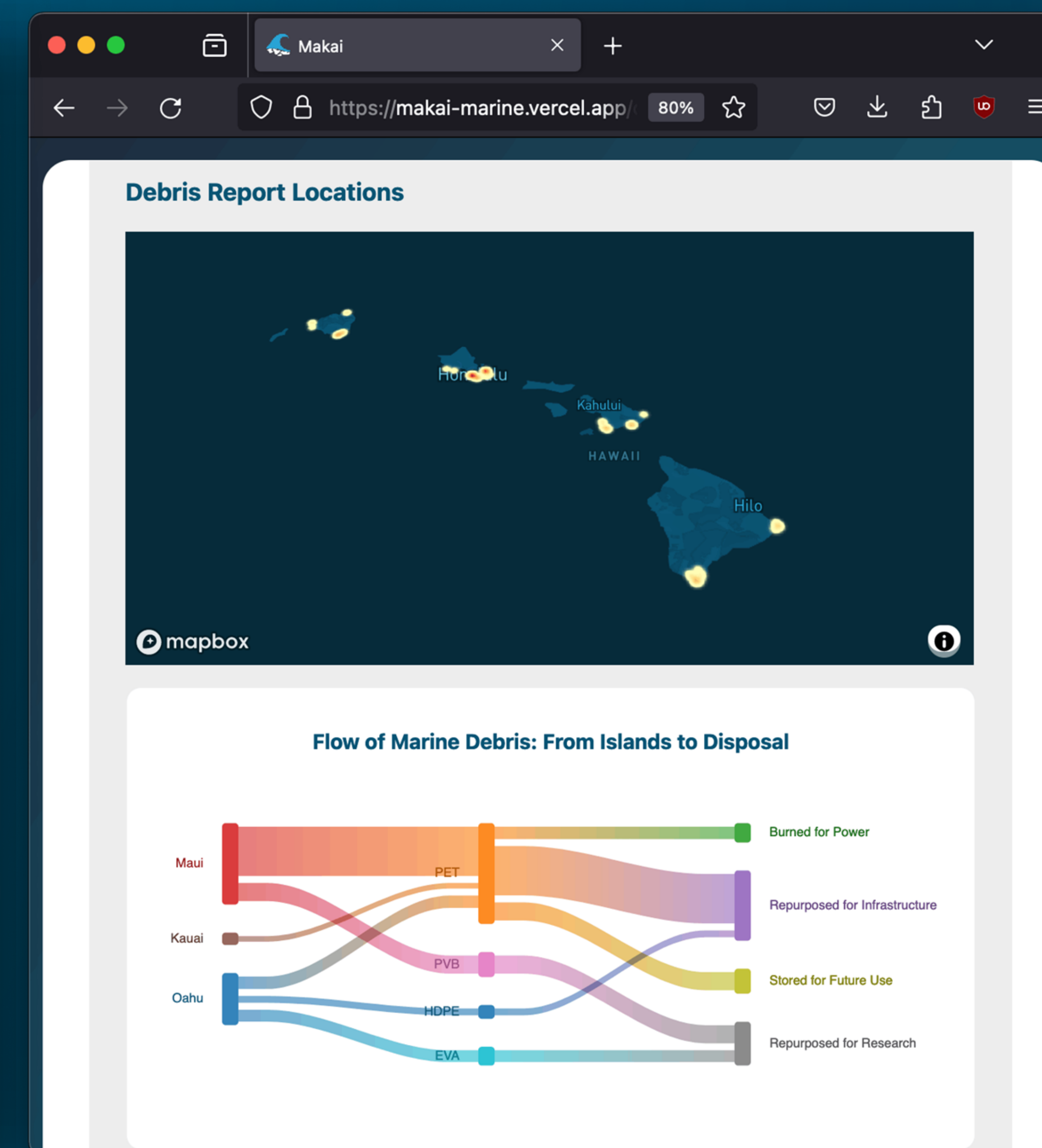
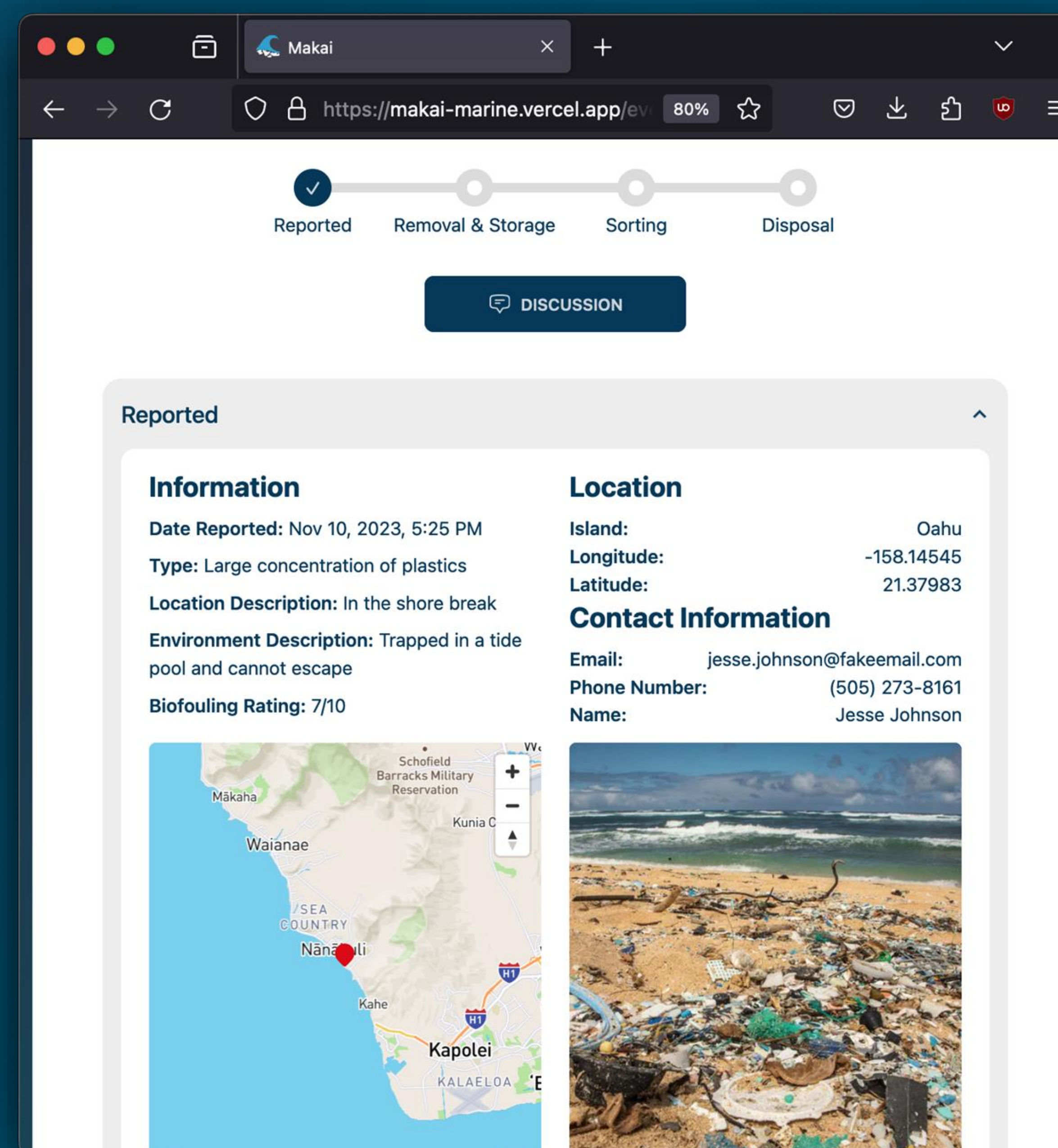
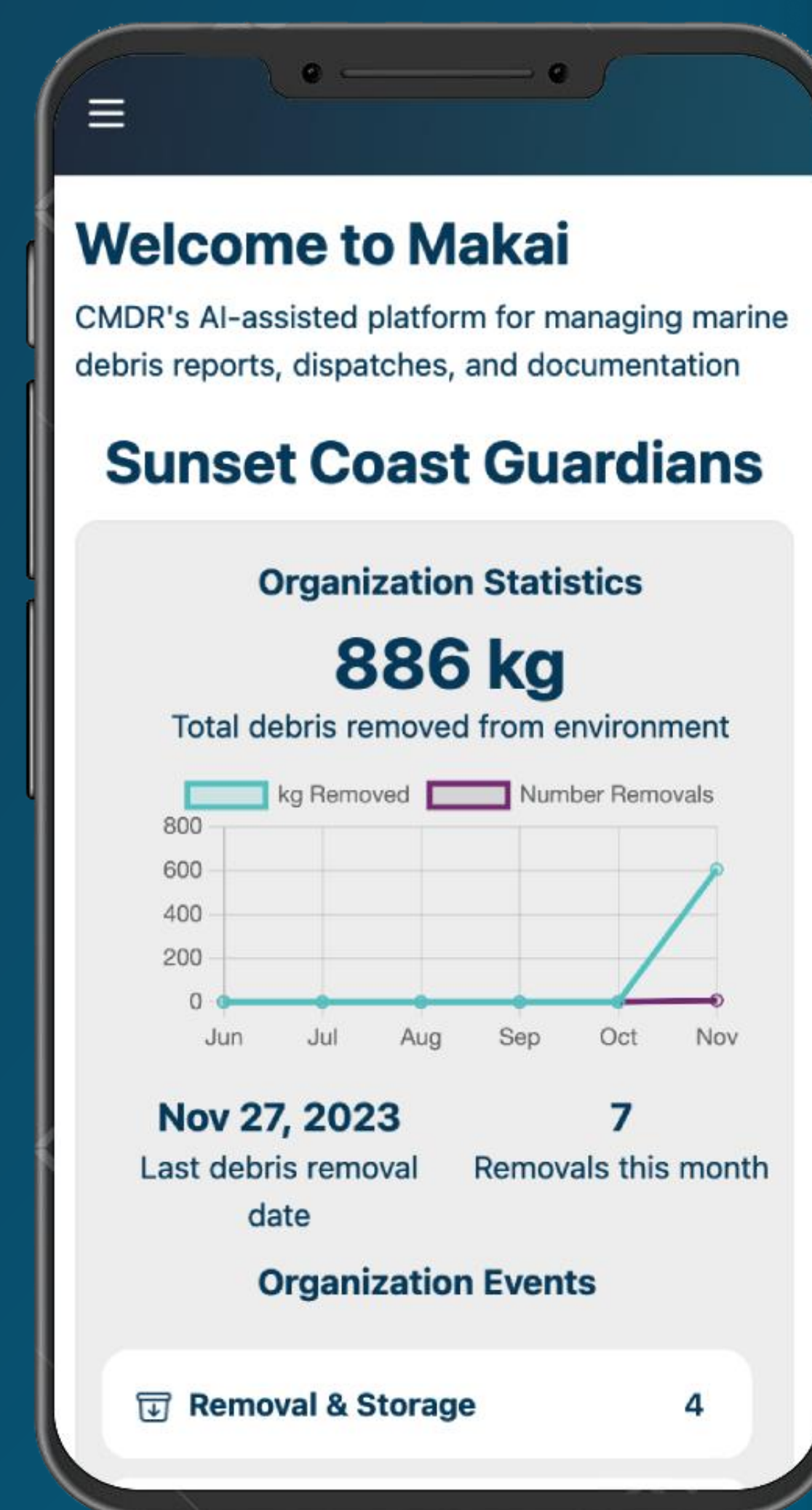
The Center for Marine Debris Research (CMDR) sought a scalable and modern reporting system

- There was an absence of a centralized database for incoming reports, resulting in data scattered across various Google Drives, Microsoft Access databases, and Excel spreadsheets.
- This scattered data made accurate tracking challenging, and data analysis was nearly impossible.

Our Platform

Makai is a user-friendly marine debris reporting platform designed specifically for the CMDR.

- It was intended for use by both the public and organizations responsible for large debris removal.



NEXT.js

mongodb

tailwindcss

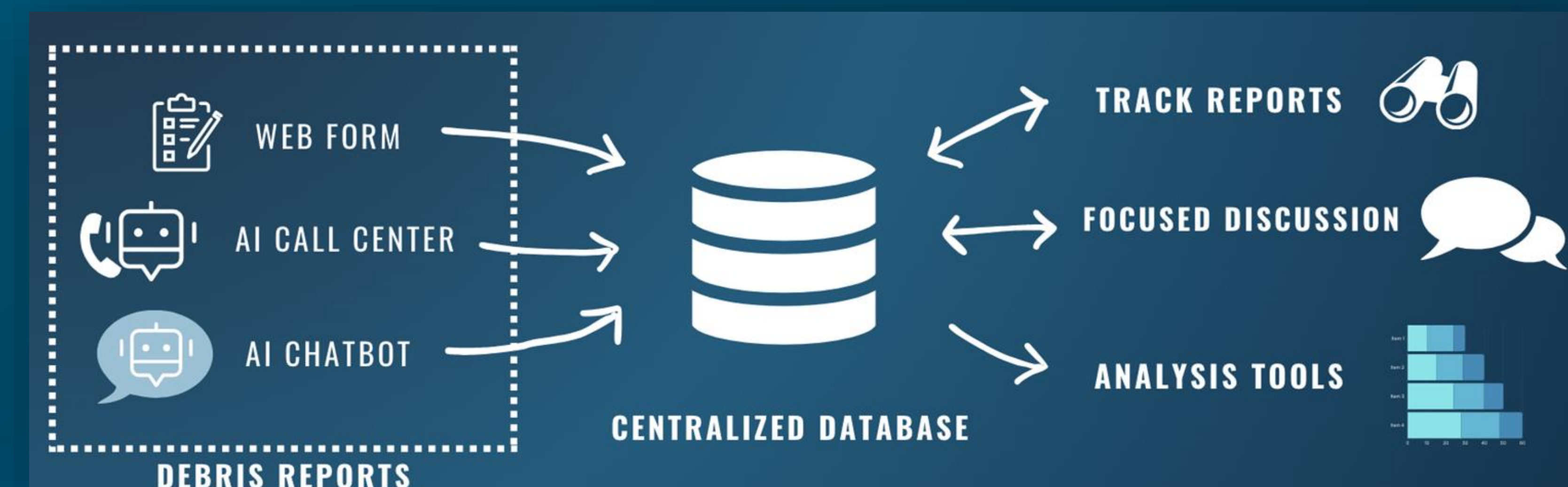
Dialogflow CX

mapbox

Solution

Tasks Accomplished

- Capability to report marine debris with geographical location.
- Implementation of a centralized database (via web reports, chatbot, and phone call submissions).
- Integration of an AI hotline and chatbot using **Google Dialogflow**.
- Efficient debris tracking across the entire process of debris removal.
- Ability to communicate with other organizations via a threaded page dedicated to reported debris.
- Data visualizations that offer essential insights for policymakers, environmental agencies, and researchers.



Challenges

The primary challenge involved formulating a method to trace debris seamlessly throughout the entire process (discovery, removal, storage, sorting, disposal). We configured our application to facilitate comprehensive "cradle to grave" debris tracking.