

# Juhu Beach Problem

## Introduction

Garbage buildup on one of Mumbai's most iconic destinations, Juhu Beach, has become a huge cause of concern for Mumbaikars. Schools, non-profits, and even private companies organize beach clean-ups but the fact is, the method has never been sustainable and requires a considerable amount of manpower which is not always available.

With our keen interest in STEM, we wanted to find a way to resolve this issue in a way where the youth can positively impact the cleanliness of the beach in a practical way. A means by which Students and other types of Volunteers like us can try and make a difference consistently.

## Problem Statement

The large garbage deposition on Juhu Beach is a problem that the government associated and independent bodies have been trying to combat for years. Taking into account the numerous prevalent issues behind this predicament, we have chosen to focus on improving the experience of volunteers who want to contribute towards the cleanliness of the iconic landmark.

## Motivation

The consistent problems we faced during our time as volunteers was that the garbage collection process was very tedious, exhausting, and inefficient. The equipment provided (gloves and garbage collection tools) was unreliable and detrimental to the overall experience of being a volunteer. Thus, we aim to make the volunteer experience consistent, efficient and more accessible as we aim to diminish garbage deposition on Juhu Beach.

## Solution Brainstorming

1. Drones with VR integration- Feasible: Fun Alternative, Saves Time and Effort, Joint Interest in subject matter.
2. App that pinpoints the location of trash to make the job of volunteers easier- Feasible but should be combined with one of the other ideas for a well-rounded and efficient project.
3. Remote-controlled ULV with claw- Might be Feasible: Solid Idea, Interesting Concept however, procurement of parts and construction will be very time consuming and expensive.
4. Cheap metal-detectors- Feasible: Easily-applicable but does not address factors like plastic wastes which are principal contributors to the problem.
5. Powered claw anchored to a pole - Easily shift deeply buried trash- Not Feasible: Difficult to Transport and Set up, Construction of the mechanism will be very expensive and time consuming, cannot be easily used by ordinary individuals.
6. Beach Plough - Tool to easily dig up sand- Feasible but would work to maximal efficiency when combined with one of the other ideas.
7. Sand blower - Leaf blower but for sand to uncover trash- Not Feasible: Transportation Concerns and erosion of sand is not good for beaches.
8. Shore Net- catch plastic before it runs off into sea- Not Feasible: Would prevent Garbage runoff into the ocean but putting up nets would be highly impractical and would affect the beach experience.
9. Trash Collector that comes to you (hamster ball)- Feasible: Cool concept however, we do not possess the required skills to create something like this.

10. Better Gloves - Sand resistant Maybe- Feasible but would work to maximal efficiency when combined with one of the other ideas.
11. E-waste detection- to make recycling easy- Not Feasible: We do not have the skills required also it does not address factors like plastic wastes which are principal contributors to the problem.
12. Hydraulic Claw - Used by people to lift heavy garbage- Not Feasible: Difficult to Transport and Set up, Construction of the mechanism will be very expensive and time consuming, cannot be easily used by ordinary individuals.