

Team 4 Executive Summary

The team worked with JMR plastics, a custom injection molding company, to develop a solution to reduce the plastic pellet spill in the factory. They are commonly found on the factory ground due to improper material handling and punctured containers. Due to pellets' small size, they can easily spill, spread, and end up in the environment. If they are not collected and properly disposed of, they can harm wildlife, clog drainage systems, contaminate soils, and affect humans if the plastic eventually reaches the food chain.

We approached the problem by firstly understanding the social and environmental impact. Polypropylene (PP) and polyethylene (PE) are two of the most common plastics found in the ocean. Microplastics consumed by marine animals are highly likely to be digested into a human body at some point, leading to damage in guts and lungs, and possibly causing genetic diseases.

The team then investigated the opportunities to eliminate the plastic run-off, as well as the sustainable recycling effort to minimize environmental pollution. The team's final recommendations consist of alternative pellet shapes and packaging, as well as a smart litter trap to capture the run-off plastic pellets. Plans of implementation will be made to JMR plastics, and general suggestions will be made to the industry.