

## **ABSTRACT**

*Indonesia is geographically located between two continents and two oceans, crossed by two mountain paths and the meeting point of three tectonic plates, causing the potential for enormous natural disasters. Natural disasters that occur will cause a lot of losses both material, property and objects, besides the physical effects caused will also be prolonged. Refugees who occupy refugee locations must live in a place that is at a minimum, with minimal facilities. Not a few refugees who experienced various illnesses due to lack of hygiene and health of refugee sites, especially in terms of good and adequate sanitation services. The number of toilets available for refugees is very limited with various problems such as limited availability of clean water, cleanliness, comfort and privacy for minimal users. The above problems initiate a portable toilet planning design that is easily applied in evacuation camps with the ability to recycle wastewater for reuse in toilet operations. The selection of technical and non-technical criteria was carried out based on data collection regarding toilets at evacuation sites based on literature and print media studies related to toilet problems that often arise in evacuation locations. The selection of alternatives that match the criteria is carried out using the Analytical Hierarchy Process (AHP) method where this method selects the highest priority weight in the alternative 1 (eSOS® - Emergency Sanitation Operation System) with a value of 0.338. Portable toilets in the location of evacuation of victims of natural disasters are planned to have dimensions of 160cm length, 100cm width, 247cm height. The portable toilet structural planning uses a structural panel technique with knockdown or unloading systems to improve the mobility capability of the toilet. Energy sources for toilet operations are planned to use a solar power plant (PLTS) with a planned capacity of 3384 Wh. This toilet is also equipped with a direct wastewater treatment unit where the planned processing utilizes aerobic and aerobic processing combined and the use of filter filters to improve the quality of treated water to be reused for toilet operations.*

*Keywords: Portable Toilets, Structural Panels, Knockdown Systems, The Analytical Hierarchy Process Method.*