

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**RECYCLING FACILITIES LOCATIONS AND ALLOCATIONS FOR
SUSTAINABLE URBAN AREA BY USING MAXIMAL EXPECTED
COVERAGE LOCATION PROBLEM (MEXCLP): A CASE OF
SETIAWANGSA**

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

In terms of economic growth and political stability, Malaysia is one of the most successful developing countries. Solid waste creation will increase as a result of the rapid economic change and the increase in urban populations. Indeed, it is currently a hazard to human habitats as well as one of the most pressing issues in sustainable development. For this reason, the objective of this study is to identify the potential location of recycling facilities, especially in Kuala Lumpur, Malaysia by using several features that have been set. The enhanced version of the Maximum Expected Coverage Location Problem (MEXCLP) model is adapted. In addition, this study was implemented to establish the location of recycling facilities in Kuala Lumpur. Finally, to analyse the optimal location of the recycling facility using two different perspectives. As a result, it was found that to ensure 100% locality accessibility and availability, it is only necessary to have three optimal recycling facility locations with total of 17 bin allocation which at $j = 7, j = 10$ and $j = 11$.