

# **SOLID WASTE TRANSPORTATION ROUTE PLANNING FROM WEST BANDUNG REGION TO THE LEUWIGAJAH INTERMEDIATE TRANSIT STATION USING VEHICLE ROUTING PROBLEM (VRP) WITH NEAREST NEIGHBOUR METHOD**

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## ***Abstract***

The rapid development in urban areas in Indonesia, followed by an increase in the displacement of some rural inhabitants to the city with the assumption of getting a better life. Bandung city is one of the cities that experienced problems in the field of waste management with less optimal conditions of solid waste transport system, especially in the sub-section of solid waste transport services. There is still a lot of garbage that has not been transported and there is accumulation in some areas in Bandung. The Sarimukti Final Processing Place (TPA) disposal period will be exhausted by the end of this year so there is plan to move the location of Final Processing Place (TPA) to Legok Nangka located in Nagreg Subdistrict, Bandung Regency. Due to the distance is far enough to Legok Nangka Final Processing Place (TPA) then it is necessary a new solid waste transport system using Intermediate Transit Station (SPA). Each vehicle is assigned to visit some Temporary Disposal Station(TPS), until the truck is full or the carrying capacity is reached, then the garbage is transported to the Intermediate Transit Station (SPA) for compactation before it is transported to the Legok Nangka Final Processing Place (TPA). Eventually all the trucks returned to the depot near the end of each day's operations. In this research, garbage transportation is formulated using Capacitated Vehicle Routing Problem with Time Window and Intermediate Facility (CVRPTWIF) with Nearest Neighbour method. The solution found using CVRPTWIF with the Nearest Neighbour method can minimize the mileage with optimal waste transport route to serve 53 TPS in North Bandung area previously unserved by 1 rit/day transportation with total distance 309,54 km using vehicle dump truck 6 m<sup>3</sup>.

**Keywords :** *Capacitated Vehicle Routing Problem with Time Window and Intermediate Facility (CVRPTWIF), Nearest Neighbour, Intermediate Transit Station (SPA), Solid waste transportation.*