

# VIT's mathematical model will help the PMC save ₹30 crore, every year

TIMES NEWS NETWORK

A team from the Vishwakarma Institute of Technology (VIT), led by professor Arjun Ramachandran, will be submitting a project to Pune Municipal Corporation (PMC) on municipal solid waste (MSW) transportation. The project aims to reduce the transportation cost of solid waste from the city to the landfill in Uruli-Devachi.

"The study analyses MSW generation, transport and the processing of waste in Pune, which is one of India's fastest growing tier-2 cities. With a population of about 4 million, and nearly 1 million households, Pune is the ninth largest city in the country (as per Census 2011) and generates between 1,600 and 1,700 tonnes of solid waste every day," said R M Jalnekar, the director of VIT.

Jalnekar added, "Currently, 80-85% of this generated waste is being recycled or processed. Present per capita per day waste generation is 441 grams, which, at an annual population growth rate of 5% is expected to produce 6,071 tonnes per day (TPD) by the year 2041. There is only one functional landfill (Uruli-Devachi) for Pune city."

The study said, "The data for the model, like quantity of waste (wet and dry) generated at the prabhag level, has been collected from various sources — PMC, Janwani organization, Gangotree Eco-technologies etc. The nodal distances have been calculated by Google maps to near precise values. At the prabhag level, the centrally-located areas have been considered as reference points. At the ward level, the ward office of the PMC has been taken as the reference

## GROWING TROUBLE



► Pune is the 8th most populous city (as per Census 2011) and currently generates between 1,600 and 1,700 tonnes of solid waste every day.

At an annual population growth rate of 5%, the city is expected to

produce 6,071 tonnes per day by the year 2041

► There is only one functional landfill (Uruli-Devachi) for Pune city

**BIG SAVINGS**

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point to compute distances; while for transfer centres, the exact locations, where available, have been considered. When not available, the nearest located landmarks identified by Google Maps have been used. For zonal processing centres, most recently upgraded and currently functional centres with the largest operational capacities have been considered."

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rosopic analysis indicates that the proposed model, if implemented, can lead to a phenomenal Rs 300 million (Rs 30 crore) in savings per year, which can be utilized for MSW infrastructural development activities for converting waste into much useful energy," said Arjun Ramachandran.

"The second major contribution of the proposed mathematical model is that it identifies a unique destination node for every prabhag, ward and transfer centre, thus avoiding any redundancy in the system," Ramachandran added.

