

Optimise Waste Collection Routes in Your Municipality



By optimisation of waste collection routes, the Municipality and Public Utility Company can make savings and revenues.

The challenge

Waste collection and transportation is a functional element of the waste management system and involves the transfer of solid waste from the point of its generation to the point of its treatment or landfill. Public Utility Companies responsible for waste collection face challenges due to their chronic lack of financial means, which results in outdated collection and transportation vehicles, insufficient number of collection workers and relatively low salaries in this sector.

The possible solution – how to overcome the challenge?

As one of the costliest operations in the waste management chain, waste collection must be well analysed and planned. Cost reduction and expansion of waste collection services are possible through detailed analyses and planning, reflected in the optimisation of the collection process (routing, frequency of collection, optimal number of workers) and use of adequate equipment (selection of collection vessels, vehicles of adequate volume, containers etc.).

The Project has therefore developed a **methodology** for Local Governments and their Public Utility Companies to **optimise their waste collection routes**. *This methodology can be implemented either by the local governments and their public utility companies, if sufficient internal expertise is present, or by outsourcing external advisory services for implementation of the methodology.*

Benefits

- Protection of the environment and population health
- Reduction of waste collection costs and time (improvement of economic efficiency)
- Improvement of communal services and customer (citizens') satisfaction
- Creating a logistical framework for the separation of recyclable materials from waste
- Increased waste collection rates and reduction of dumpsites

Facts and figures obtained through piloting the methodology

Public Utility Company "Stari Grad" Šabac, Serbia

- **3 vehicles less** - During the four months of the route optimisation process implementation, it was shown that the work performed with 19 vehicles throughout the municipality, can now be done by 3 vehicles less.
- **564 working hours less** - Proportionately to the reduction in the number of working vehicles, the number of working hours of the whole crew has also been reduced. During the previous year, 9,672 working hours were realized, while in the same period in 2019, this time was reduced by 5.8% or 564 working hours less.
- **18,500 EUR savings** - With a six-month cost prediction, annual savings are estimated at around € 18,500. By obtaining the conditions for full implementation of the process, the estimated savings can be twice as high.

What should be done in your Municipality and Utility Company?

THE STEPS FOR WASTE COLLECTION ROUTES OPTIMISATION

STEP 1. PREPARATORY ACTIVITIES

1.1. Meeting with the municipal administration and Public Utility Company	Decision-makers and technical teams understand the advisory process, steps and activities to be taken.
1.2. Establishment of a Working Group	Municipal Working Group is in place. The Group will organise the process, monitor the implementation and report on the results.
1.3. Development of an Action Plan	The Action Plan will define objectives, activities, monitoring indicators, responsibilities, budget, timeframe and coordination between different stakeholders.

STEP 2. DATA COLLECTION AND PLANNING THE IMPLEMENTATION OF THE NEW PROCESS

2.1. Determining the route optimisation tool
2.2. Data collection/analysis
2.3. Preparation of inputs for route optimisation
2.4. Development of a collection scheme
2.5. Determining the route optimization tool

STEP 3. PROVISION OF EQUIPMENT

3.1. Development of detailed technical specifications
3.2. Calculation and specification of costs
3.3. Tender procedure for equipment procurement/contracting
3.4. Purchase of the equipment

STEP 4. IMPLEMENTATION OF AN INFORMATION CAMPAIGN

4.1. Planning the campaign and preparation of promotional materials
4.2. Implementation of the information campaign

STEP 5. INTRODUCTION OF THE OPTIMISED WASTE COLLECTION ROUTES

5.1. Implementation of vehicle tracking hardware and software
5.2. Implementation of optimised routes

STEP 6. FINALISATION PHASE (IMPLEMENTATION AND EVALUATION OF RESULTS)

6.1. Evaluation of implementation activities performed
6.2. Evaluation of benefits achieved/development of a model for financial benefits calculation
6.3. Evaluation and assessment of project sustainability
6.4. Provision of a follow-up plan for the municipality

The methodology for Local Governments and their Public Utility Companies (Terms of Reference) for optimisation of waste collection routes is available at NALAS website www.nalas.eu and SeSWA website.

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