

Project Name

Solid Waste Master Plan

Client

ONAS, Tunisia

Services Provided

- Investigation and Data Collection
- Identification and Survey of Waste Collection Routes
- Optimization of Waste Collection Routes and Frequencies
- Organizational/Regulatory/Financial and Institutional Analysis
- Development of Management Plans for Collection and Treatment/Disposal of Solid Waste
- Design of Solid Waste Disposal Facilities



Project Description

In 1994, SAI was awarded a contract by ONAS, the Tunisian National Sanitation Agency, to develop a creative solid waste master plan including collection, routing and landfill design for eleven provinces in Tunisia.

Approach

In order to develop a comprehensive Solid Waste Management Plan for these provinces, SAI had to perform the tasks of data collection, street mapping, waste composition surveying, waste generation projection, identification of waste collection routes, zones, and frequencies, closure cost evaluation, master planning and environmental studies, design of new landfills, and optimization of collection routes and frequencies.

The optimization of waste collection routes and frequencies included:

- Scanning and digitization of city maps and streets;
- Survey of collection routes;
- Development of a database for waste collection routes including street names, distance, waste collection frequencies, collection times, vehicle numbers, quantities of waste collected per street, etc.; and
- Computer simulation of waste collection routes, frequencies and quantities.

A feasibility study was performed for each province. This detailed study involved financial analyses of alternatives, and development of a master plan for each province with an analysis of the shortcomings in existing institutions and administration. The study concluded with proposed technical solutions and institutional and regulatory proposals.

The final state of this project involved the complete designs for seven landfill sites (one for each province) as well as the development of bid documents for construction.



In order to complete this project, SAI utilized state-of-the-art proprietary software for optimization of waste collection routes and frequencies, financial analysis of various solid waste management options, modeling of air, soil and groundwater impacts, and CAD-assisted landfill design. Data originating in Tunisia was e-mailed and received in the United States, where it was compiled and evaluated.