

Case Study - Chandigarh

Chandigarh, the union territory, and capital of 2 states, Punjab and Haryana, is India's first planned city. The city overpowers other union territories of India in terms of every metric- be it the quality of life, living standards, planning, architecture, or touristy spots.

The Issues and challenges faced by the Municipal Corporation of Chandigarh

*Chandigarh ranked 66 in Swachh Survekshan, an annual cleanliness urban survey conducted by the Ministry of Housing and Urban Affairs, Government of India. Some of the massive challenges faced by Municipal Corporation, Chandigarh are:

- Little attention to detail in cleaning activities across the city, such as central verge vegetation growth, road markings, city roads, and footpaths.
- Indiscipline amongst sanitation workers, regular absenteeism, non-usage of safety gears and uniforms, lack of accountability, and performance tracking results in inefficient service delivery.
- Illegally dumping waste on roads and irregular cleaning schedules lead to garbage piling up on the street corners or roads.
- Inefficient complaint redressal mechanism leads to delayed action to citizens' complaints.
- Sanitation workers face elevated risks while working on the roads without proper tools and equipment during peak traffic hours.

Our Objectives –

- To bring transparency to Chandigarh's sweeping system.
- To mark beats in Chandigarh through GIS-based mapping to eliminate the possibility of any area being left unexplored for sweeping.
- To create Chandigarh's integrated 'wall to wall' cleaning model.
- To fix accountability of the workforce who would give proper attention to the assigned area.
- To create a comprehensive monitoring system to keep a vigil on every individual's work and a fleet for operational accuracy.
- Sweep roads, prune unwanted vegetation, wash footpaths at night using imported machines, and manually haul dust and hedges off the roads and road dividers.

Advantages We Deliver

With domain expertise for over 57 years, we endeavour to improve the life cycle of municipal infrastructure by integrating technological advancements within the existing system. We are committed to turning Swachh Bharat's dream into a reality. Our wide range of innovative and fully integrated municipal services has made us the preferred choice of municipal bodies across India.

Pioneering innovation in every aspect of the business, LSL offers specialised services, including maintenance of public utilities, solid waste management, and city infrastructure management. We serve Municipal Corporation, Chandigarh, for **GIS-based Mechanised and Manual City Cleaning** using our best practices and effective decision-making tools.

- **Superior Cleaning** – We use the best-in-class imported machine Dulevo that minimises the dust cloud formation while sweeping the city roads. We use power washing equipment to clean footpaths and mechanically prune hedges along the roadsides and road dividers to ensure superior city cleaning.

- **Maintain Cleaning Operations Data** – We continuously monitor the routes of sweeping machines and staff attendance using a real-time GIS tracking system to maintain cleaning operations data regularly.
- **Enhance Employee Safety** – While sanitation workers manually sweep the roads using brooms during peak traffic hours, they are more likely to encounter accidents. Mechanically sweeping roads and washing footpaths using proper tools and equipment during peak traffic hours reduce the possibility of accidents.
- **Reduction in Air Pollution** – Almost 60% of the dust gets airborne while manually sweeping the roads using brooms and settles back on the street. Cleaning hazardous dust particles such as PM10 and PM2.5 off the roads using machines minimises the health risks to sanitation workers.
- **Stray Animal Protection** – Roadside vegetation often makes the area an illegal garbage dumping place that may breed pests, and it can be harmful if stray animals eat it or sleep on it. We regularly prune the vegetation to ensure the safety of stray animals.
- **Ensure Better Public Health** – Dirty roads and roadsides are unsanitary and can become breeding grounds for pests that are likely to spread diseases among the residents. We clean and sweep roads, and pavements and prune unwanted vegetation regularly to ensure better public health.
- **Increase Productivity** – One mechanical sweeper can work equivalent to the human strength of 15-20 manual sweepers and can sweep approximately 10X times the area as compared to a manual sweeper; we ensure increased productivity using our machines while achieving superior performance cleaning.
- **Night-time Operations** – It allows for more efficient road sweeping and footpath washing without disruption to daytime traffic and ensures the safety of the sanitation workers.
- **Improve City Aesthetics** – Pruning hedges along the roadsides, footpaths, and road dividers are necessary for easy manoeuvrability, to make the city look clean, contributes to citizens' pride, and helps boost the city tourism.

GIS-Based Tracking System for Mechanical Sweeping

Operation Tracking

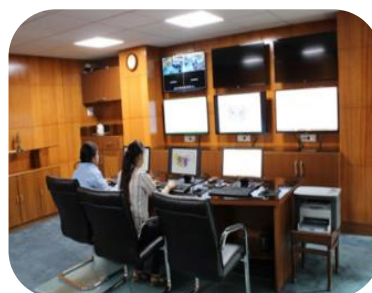


A complete route map of all vehicles is displayed as per working hours to ascertain coverage of all roads.



GPS device on the machine helps to identify speed graphics in case of over-speeding or vehicle standing idle. In case of deviations from the assigned route, SMS alerts are sent to official mobile numbers for immediate rectification.

Monitoring at Operation Command



The entire Cleaning System is monitored and tracked at the Operation Command Centre by LSL executives and MC representatives followed by the submission of reports to authorities.

GIS-Based Tracking System for Manual Sweeping



The entire city is divided into beats with specific colour coding for complete coverage.



All beats are segregated up to street level view and are enabled with colour coding for adequate area knowledge.



Field officers visit all beats and click real-time images, which are then uploaded on the tracking software for the command centre to verify.



All beats are marked with white balloons to show that work hasn't been commenced for the day.



Once the work is complete, all the white balloons in the respective beats turn green.

Project Details Chandigarh

Sr No.	GIS-based Mechanised & Manual City Cleaning Project	Details
1	Name of the Nodal Agency for the Project	Municipal Corporation, Chandigarh
2	Name of the Company	Lion Services Ltd.
3	Work Period Awarded for the Project	Five Years
4	Length of Roads Assigned for Mechanised Sweeping – V2, V3, V4, V5 Roads	179.8 KM
5	Length of Roads Assigned for Manual Sweeping – V6 Roads	340 KM (i.e., 510 Beats)
6	Frequency of Mechanised Road Sweeping	Alternative Days
7	Frequency of Manual Road Sweeping	Daily
8	Frequency of Grass Cutting	On Need Basis
9	Frequency of Footpath Washing	Twice a Month