

Collaborative Governance for the Removal of 6,333 MT of Legacy Waste: A First-of-Its-Kind MCD–Railway Partnership.

Municipal Corporation of Delhi, Karol Bagh Zone

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Abstract

Legacy waste accumulation along railway corridors has emerged as a significant urban sanitation challenge across Indian cities. Owing to restricted accessibility, overlapping institutional jurisdictions, and the continuous generation of municipal and construction waste, railway corridors often become vulnerable to long-term waste accumulation. Such waste not only degrades the urban environment but also poses serious public health, environmental, and operational concerns. Addressing these challenges requires coordinated action that extends beyond the mandate of a single agency and calls for integrated institutional collaboration.

Recognizing this need, the Karol Bagh Zone of the Municipal Corporation of Delhi adopted a collaborative governance approach by establishing a structured partnership with the Railway Department for the scientific removal of legacy waste from railway corridors. The initiative demonstrated how effective inter-agency coordination, joint planning, shared resources, and synchronized field execution can overcome complex operational constraints associated with working in active railway environments.

This paper presents the planning, implementation, and institutional framework of this pioneering initiative, highlighting the importance of collaborative governance in addressing complex urban sanitation challenges. It illustrates how convergence between civic authorities and infrastructure agencies can lead to efficient, sustainable, and scalable solutions for legacy waste management. The experience provides valuable insights into developing a replicable model that can be adopted by urban local bodies and railway authorities across India to improve environmental quality, strengthen urban sanitation systems, and promote sustainable city management.

1. BACKGROUND

The railway corridors passing through the Karol Bagh Zone had, over several decades, become major hotspots for the accumulation of **legacy waste**. Large quantities of municipal solid waste, construction and demolition (C&D) waste, household refuse, and other debris had been indiscriminately dumped along railway tracks, resulting in massive legacy waste dumps at several locations. These waste deposits not only degraded the surrounding environment but also posed serious public health risks, created unhygienic conditions, generated foul odour, encouraged vector breeding, and adversely affected the overall urban landscape.

The challenge, however, extended beyond the presence of legacy waste. Most of these dumping sites were located **within active railway corridors**, making access extremely difficult. Conventional municipal vehicles and road-based machinery such as dumpers, compactors, and loaders could not reach many of these locations due to operational restrictions, railway safety requirements, and the absence of suitable transportation routes. Consequently, even though the need for removing the accumulated waste was well recognised, its evacuation and transportation from the railway corridor remained the biggest operational challenge.

Recognizing that this challenge could not be addressed by the Municipal Corporation of Delhi alone, the Karol Bagh Zone identified the need for a collaborative institutional approach. A sustainable solution required the combined strengths of both the **Municipal Corporation of Delhi (MCD)** and the **Railway Department**, bringing together municipal sanitation expertise and railway operational infrastructure. This understanding led to the conceptualization of a **first-ever inter-agency collaboration**, under which both organizations jointly planned and executed a systematic legacy waste removal operation using **BRN railway wagons** for direct evacuation of waste from railway corridors. This innovative approach successfully resolved the long-standing transportation challenge and established a new benchmark for collaborative urban governance and legacy waste management.

2. CHALLENGES

The implementation of legacy waste removal from railway corridors presented several operational, technical, and institutional challenges. Unlike routine municipal sanitation activities, the project involved working within active railway corridors, where accessibility, safety, logistics, and inter-departmental coordination required careful planning and execution. The major challenges encountered during the implementation are outlined below:

2.1 Large-Scale Accumulation of Legacy Waste

Over several decades, extensive quantities of municipal solid waste, construction and demolition (C&D) waste, household refuse, and other debris had accumulated along railway corridors. The magnitude and continuous accumulation of waste created severe environmental degradation and made scientific remediation a complex task.

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2.2 Inaccessibility of Railway Corridors

Most of the legacy waste dumping sites were located within railway land where direct access through municipal roads was not available. Conventional municipal vehicles and heavy machinery could not reach many of these locations due to narrow access points, restricted working space, and the operational layout of the railway corridor.

2.3 Transportation of Waste from Railway Premises

One of the most significant challenges was the evacuation and transportation of waste from within railway corridors. Since road-based transportation was not feasible in several stretches, identifying a safe, efficient, and technically viable mechanism for transporting excavated waste became a major operational challenge.

2.4 Coordination Between Multiple Departments

The project required continuous coordination between the Municipal Corporation of Delhi and the Railway Department. Obtaining operational permissions, scheduling work without affecting railway operations, coordinating manpower and machinery, and ensuring compliance with railway protocols required close collaboration between multiple agencies throughout the implementation period.

2.5 Safety During Operations

The proposed work was carried out within operational railway corridors where regular train movement and restricted working conditions posed significant safety challenges. Ensuring the safety of workers, machinery, and railway operations while maintaining uninterrupted railway services required strict adherence to safety protocols.

2.6 Execution in Technically Challenging Locations

Several legacy waste sites were located in technically sensitive areas, including railway junctions, multiple track crossings, and narrow corridor stretches. Limited working space, restricted equipment movement, and continuous railway operations increased the complexity of field execution.

2.7 Night-Time Working Conditions

Certain stretches required operations during night hours to minimize disruption to railway traffic. Night-time execution demanded additional planning for manpower deployment, illumination, equipment movement, supervision, and worker safety.

2.8 Prevention of Fresh Waste Dumping

In addition to removing the existing legacy waste, preventing fresh waste accumulation along railway corridors remained a continuing challenge.

Sustaining the cleanliness of these areas required long-term monitoring, public awareness, and appropriate waste management infrastructure.

3. COLLABORATIVE GOVERNANCE AND INTER-AGENCY COLLABORATION

Recognizing that the legacy waste accumulated within railway corridors could not be addressed through conventional municipal sanitation mechanisms, the **Karol Bagh Zone of the Municipal Corporation of Delhi (MCD)** initiated a collaborative governance approach by engaging the **Railway Department** for joint planning and execution. Since the waste was located on railway land, effective remediation required close institutional coordination between both agencies.

To facilitate continuous coordination, the Karol Bagh Zone established dedicated communication channels involving officials from MCD and the Railway Department. Regular discussions, joint meetings, and field-level coordination enabled both agencies to develop a common operational strategy and address issues related to access, safety, logistics, and execution.

Subsequently, **joint field surveys** were conducted across all railway corridors falling within the Karol Bagh Zone to assess the extent of legacy waste accumulation, site accessibility, operational constraints, and the requirement for railway support. Based on these surveys, priority intervention sites were identified, including **Daya Basti Railway Colony, Prem Nagar, Amar Park Railway Corridor, Kirti Nagar Industrial Area Railway Line, and the Patel Nagar–Daya Basti railway stretch**. These locations were prioritized for systematic legacy waste removal through coordinated action by both departments.

This collaborative framework established the foundation for effective planning, resource mobilization, and synchronized execution, demonstrating how institutional convergence between civic authorities and infrastructure agencies can address complex urban sanitation challenges

4. INNOVATIVE INTERVENTION

One of the most significant innovations of this initiative was the establishment of a **first-of-its-kind collaborative governance model** between the **Municipal Corporation of Delhi (MCD)** and the **Railway Department** for the scientific removal of legacy waste

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from railway corridors. The initiative combined institutional coordination, joint planning, and railway logistics to address a long-standing urban sanitation challenge that could not be resolved through conventional municipal operations alone.

As part of the intervention, officers of the **Karol Bagh Zone** and the **Railway Department** jointly carried out a technical assessment of the available railway wagons to identify the most suitable option for transporting legacy waste. Based on operational feasibility, loading capacity, and site requirements, **BRN wagons** were selected as the most appropriate solution for waste evacuation.

The initiative marked the **first-ever deployment of BRN railway wagons by MCD** for the direct transportation of legacy waste through the railway network. Supported by synchronized planning, coordinated deployment of manpower and machinery, railway safety protocols, and continuous field supervision, the intervention established an efficient, scientific, and scalable model for legacy waste removal from inaccessible railway corridors



Joint Technical Inspection and Selection of BRN Wagon by MCD and Railway Department Officials for Legacy Waste Transportation

5.IMPLEMENTATION STRATEGY

Following the establishment of the collaborative framework, the **Karol Bagh Zone of the Municipal Corporation of Delhi (MCD)** and the **Railway Department** jointly developed a comprehensive implementation strategy to ensure the systematic execution of the legacy waste removal operations. The strategy focused on detailed planning, coordinated resource deployment, operational safety, and continuous monitoring throughout the project.

The implementation commenced with **joint field surveys** of all identified railway corridors to assess the extent of legacy waste accumulation, site accessibility, railway movement, safety requirements, and the availability of working space for machinery. Based on the survey findings, site-specific operational plans were prepared, defining the sequence of work, deployment of manpower and machinery, and transportation arrangements for each location.

A key component of the strategy was the **joint technical assessment and selection of BRN railway wagons**. Officials from the Karol Bagh Zone and the Railway Department jointly inspected the available railway wagons and evaluated their suitability based on loading capacity, operational feasibility, accessibility, and compatibility with field conditions. Following this assessment, **BRN wagons were identified as the most suitable rolling stock** for the safe and efficient transportation of legacy waste from railway corridors.

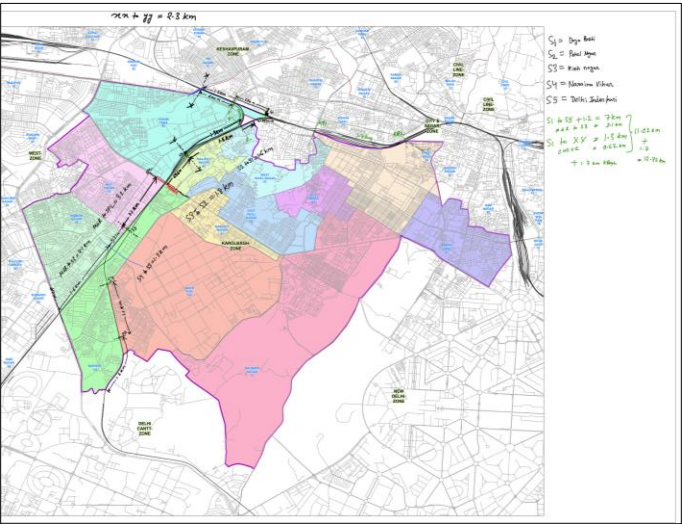
Subsequently, all necessary railway permissions, operational clearances, and safety approvals were obtained before commencement of field activities. The legacy waste removal operations were executed in close coordination with railway authorities, with synchronized deployment of JCBs, excavators, loaders, sanitation teams, and BRN wagons. Wherever required, operations were scheduled during night hours to minimize disruption to railway

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traffic and ensure safe execution within active railway corridors.

A robust monitoring mechanism was maintained throughout the implementation period through regular field inspections, joint supervision by officers of both departments, review meetings, and continuous coordination to address operational issues. This structured implementation strategy ensured smooth execution of the project while maintaining operational efficiency, worker safety, and effective inter-agency coordination.



Railway Corridors and Priority Legacy Waste Intervention Sites Identified in Karol Bagh Zone.



Loaded wagons covered with tarpaulin sheeting near Shahzada Bagh, Daya Basti, on 18 June 2026, before waste is moved out by rail.

5.IMPLEMENTATION STRATEGY



Midnight Site Inspection During Legacy Waste Removal Operations



A JCB excavator lifts accumulated waste near Chetan Basti, Anand Parbat, in the early hours of 18 June 2026.

6.OUTCOMES AND KEY ACHIEVEMENTS

The collaborative initiative undertaken by the **Karol Bagh Zone, Municipal Corporation of Delhi**, in partnership with the **Railway Department**, resulted in significant operational, environmental, and institutional outcomes. The major achievements of the initiative are outlined below.

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6.1 Scientific Removal of Legacy Waste

The initiative successfully facilitated the systematic removal of **approximately 6,333 Metric Tonnes (MT)** of legacy waste from railway corridors across the Karol Bagh Zone. The operation transformed long-neglected railway stretches into cleaner and environmentally safer public spaces, significantly improving sanitation conditions.

6.2 Successful Execution of Night-Time Operations

Critical operations were successfully carried out during night hours, particularly near **Daya Basti Railway Station**, ensuring that waste removal activities were completed without disrupting regular railway operations. The carefully planned night operations demonstrated effective coordination, efficient resource deployment, and strict adherence to railway safety protocols.

6.3 Clearance of Technically Challenging Railway Corridors

The initiative successfully addressed technically challenging locations, including the **Zakhira (Prem Nagar) railway stretch**, where multiple railway lines converge. Through meticulous planning and coordinated execution, legacy waste was removed from areas that had remained inaccessible for several years.

6.4 Environmental Restoration and Improved Sanitation

Removal of long-standing legacy waste substantially improved the cleanliness of railway corridors, reduced environmental degradation, minimized foul odour and vector breeding, and restored the visual appearance of these critical urban spaces.

6.5 Installation of Secondary Storage Bins

To sustain the gains achieved through the project, **secondary storage bins** were installed at vulnerable locations along railway corridors to discourage fresh waste dumping and strengthen the municipal waste collection system. Regular monitoring and awareness activities further supported the long-term maintenance of the cleaned stretches.

6.6 Establishment of a First-of-Its-Kind Collaborative Model

One of the most significant outcomes of the initiative was the establishment of a **first-of-its-kind collaborative governance model** between the Municipal Corporation of Delhi and the Railway Department. The initiative demonstrated that complex urban sanitation challenges extending across multiple jurisdictions can be effectively addressed through institutional convergence, joint planning, and coordinated implementation.

6.7 A Replicable Model for Urban Sanitation

Beyond the immediate achievements, the initiative established a practical and scalable framework for legacy waste remediation in inaccessible railway corridors.

The collaborative approach, operational planning, and innovative use of railway infrastructure provide a model that can be replicated by other urban local bodies and railway divisions across the country.



Installation of Secondary Storage Bins at Identified Intervention Sites to Prevent Fresh Waste Dumping.

7. REPLICABILITY AND LEARNING

The initiative demonstrated that complex urban sanitation challenges extending across multiple jurisdictions can be effectively addressed through **collaborative governance and institutional convergence**. The partnership between the Municipal Corporation of Delhi and the Railway Department established a structured framework for joint planning, coordinated decision-making, resource sharing, and synchronized execution. This approach not only enabled scientific legacy waste removal from inaccessible railway corridors but also highlighted the importance of inter-agency collaboration in delivering sustainable urban solutions.

The operational model developed under this initiative is scalable and adaptable to similar railway corridors and other restricted-access government lands across Delhi and the country. The experience provides valuable lessons for urban local bodies, infrastructure agencies, and public institutions seeking integrated solutions to complex environmental and sanitation challenges.

8. CONCLUSION

The **Legacy Waste Removal Initiative** undertaken by the **Karol Bagh Zone, Municipal Corporation of Delhi**, represents a landmark example of how

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collaborative governance can transform complex urban challenges into effective and sustainable solutions. By bringing together the institutional strengths of the Municipal Corporation of Delhi and the Railway Department, the initiative successfully established a first-of-its-kind operational framework for the scientific removal of legacy waste from railway corridors.

Beyond the immediate environmental and sanitation improvements, the initiative demonstrated that **strong leadership, institutional convergence, technical innovation, and coordinated execution** can overcome operational constraints that cannot be addressed by a single agency alone. The project has established a practical and replicable model for inter-agency collaboration, offering valuable guidance for future urban sanitation and environmental restoration initiatives across India.

As cities continue to face increasingly complex infrastructure and environmental challenges, this initiative reinforces that **collaboration between public institutions is not merely an administrative necessity but a strategic enabler of sustainable urban transformation**. The experience of the Karol Bagh Zone illustrates how coordinated governance, shared responsibility, and innovative planning can create lasting improvements in urban sanitation while setting new benchmarks for public service delivery.

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