

Waste management at Railway Stations, Catering Units and Coaching Depots

Audit objective 1

Whether the assessment, management and disposal of waste generated at Railway stations, Catering units and Coaching depots was done as per applicable laws and rules

Effective management of huge quantum of waste/garbage generated at stations requires continuous action by Railways authorities for assessment, segregation, collection, storage and disposal of the same. Rules framed under statute (Solid Waste Management Rules, 2016, Plastic Waste Management Rules, 2016, Environment (Protection) Act, 1986, Water Act, 1974), instructions issued by SPCBs/CPCB and National Green Tribunal, recommendations of Public Accounts Committee (PAC) as well as the instructions of Railway Board are required to be complied with in this regard. The results of effectiveness and efficiency of Railways in the waste management process at stations, catering units and coaching depots as assessed in Audit is brought out in succeeding paragraphs.

2.1 Establishment of EnHM wing

The Public Accounts Committee (PAC)- Fourteenth Lok Sabha, in its 83rd Report recommended (February, 2009) that the Ministry of Railways should strengthen the coordination efforts and put in place an institutionalised mechanism at the Apex level as also for framing a robust policy on Waste Management. Accordingly, Environment and Housekeeping Management (EnHM) Directorate was setup in Railway Board vide office order No. 28/2015 dated 7 April 2015. Subsequently, Railway Board directed all Zonal Railways (August 2015) to establish EnHM wings in the Zonal offices as well as in Divisions.

Railway Board's circular (August 2015) specifying the scope and formation of EnHM wing at Zonal /Divisional level called for co-ordination and monitoring of all environment related issues. The instructions issued also covered integration of housekeeping functions of major railway stations, coaching trains and coaching depots by the EnHM wings under the control of GM & CME in Zonal Railways and DRM and Sr. DME in the divisions.

EnHM wing was required to manage the Budget for Housekeeping of the stations and coaching trains which included cleanliness and sanitation of stations, coaches and railway colonies⁶. No clear demarcation of the waste management activities (in budget proposals) was, however, mentioned in the instructions issued by the Ministry of Railways.

⁶ *Railway colonies not covered in this Performance Audit*

Audit randomly selected 109 stations across all the 17 Zones (*Annexure-1.4*) to assess the implementation of Railway Board's orders in respect of functioning of EnHM wings at Zonal/Divisional level. Audit observed the following:-

- i. Railways have taken positive steps in establishing EnHM wings in all the zones and in 43 out of 54 Divisions test checked by audit.
- ii. In 11 divisions,⁷ EnHM wings were not established during the review period.
- iii. Instructions were not issued for regular monitoring of aspects related to management of waste in 13 divisions⁸, which included eleven divisions where the wing had not been formed and two other divisions in NCR where though the wing was formed but no instructions related to monitoring management of waste were found on record.
- iv. There is no single body/agency in Indian Railways taking ownership of waste management related issues. EnHM wings were formed to undertake monitoring and coordination function for all environment related issues, while planning, sanction and execution of environment related works was left to be dealt by the concerned department such as Commercial and Engineering.

Ministry of Railways stated (May 2022) that duties related to EnHM wing have been allotted to Mechanical Department where EnHM wing has not been set up. Reply is not acceptable as same level of dedication is unlikely from Mechanical directorate since co-ordination and monitoring of all environment related issues was the sole objective of setting up EnHM wing.

2.1.1 Budget allocation and expenditure

EnHM wing is required to manage the Budget for Housekeeping of the stations and coaching trains. Railways is maintaining expenditure incurred on cleanliness related issue, which includes station, coach sanitation⁹ and sanitation in railway colony. Budget allocation and expenditure incurred there from is shown in the Table 2.1 below:-

Table 2.1 - Details of Budget allocation and Expenditure

(₹ in crore)

Year	Budget Allocation	Actual Expenditure	Per cent utilization
2016-17	1751	1640	94
2017-18	2026	1874	92
2018-19	2281	2156	95
2019-20	2796	2721	97
2020-21	2081	1987	95

Note:- Includes Coach sanitation, Station sanitation and Sanitation of Railway colonies. Sanitation of colonies not covered in this Report.

⁷ CR- Pune & Solapur, ER- Sealdah & Malda; NFR- Lumding, Rangiya & Katihar & NR- Ambala, Delhi, Lucknow & Moradabad

⁸ CR-Pune& Solapur, ER- Sealdah & Malda; NCR- Prayagraj & Agra, NFR- Lumding, Rangiya & Katihar, NR-Delhi, Lucknow, Moradabad & Ambala

⁹ Coach sanitation included onboard housekeeping, clean train stations, mechanical coach cleaning, pest and rodent control and any other activity of coach

However, planning, sanction and execution of environment related works¹⁰ were left to be dealt by concerned departments (Commercial and Engineering). Provision of funds for environment related works (ERWs) was made as an itemized one or on lump sum basis (equal to one *per cent* of the cost of work). Certain items related to waste management like provision of ETPs/STPs, WRPs, ACWPs, waste to compost, waste to energy plants *etc.* were included in the specified list of ERWs. These works are to be managed by EnHM wing of the Zone/Division/PUs. Progress on these works and utilisation of funds vis a vis provision has been given in detail in **para 4.5**.

It is observed that the environment and housekeeping covered a vast area with management of waste a part of it. EnHM wings at different levels as mentioned in Para 1.2 were formed to oversee cleanliness, sanitation apart from waste management. No separate authority with clear role and responsibility was assigned the waste management task as also there was no demarcated fund allocation for waste management exclusively. Further, although more than 90 *per cent* of the budget allocation stands utilised during the period 2016-17 to 2020-21, progress on managing different kinds of waste is not encouraging as brought out in succeeding chapters.

2.2 Constitution of Accountable entities

The National Green Tribunal (NGT), Principal Bench, New Delhi, in their order dated 1 October 2018 (OA No. 141/2014) directed the Ministry of Railways to identify three accountable entities. The order specified that the entity should consist of at least three identified persons at each level (at zonal railway level, at divisional level as well as at every important railway station) to monitor and implement various issues related to solid waste disposal, littering of solid and plastic wastes *etc.* In compliance with these orders, Ministry of Railways directed¹¹ (5 December 2018) all Zonal Railways to constitute three accountable entities at each level¹².

Audit reviewed the implementation of NGT orders on these aspects in case of 109 selected stations and found that requisite accountable entities were not established to monitor the waste management related issues. Further, Accountable entities though constituted, were not represented by requisite number of members and meetings/joint inspection were not conducted at all by the accountable entities. The position is indicated in Table 2.1 A below:-

¹⁰ *Environment related works such as water conservation, Sewage and effluent treatment plants, solid waste management infrastructure, water efficient fixtures and measures for mitigation of Air and Water pollution during construction and maintenance etc*

¹¹ *letter No. 2018/EnHM/01/02 dated 5.12.2018*

¹² (i) *At Station level- Station Director/ Station Manager, one Supervisor each from Commercial and Engineering Department.*
(ii) *At Division level -ADRM, One officer each from Commercial and Engineering Department.*
(iii) *At Zonal Railway level -AGM, One officer each from Commercial, Engineering and Security Department*

Table 2.1 A - Status on constituting accountable entities

Particulars	Zonal Railway level	Divisional level	Station level
Accountable entities not established	ER and SWR	17	42
Accountable entities with lesser representations than required	ECR, NER and NWR	Seven divisions ¹³	13 stations ¹⁴
Meetings not conducted by Accountable entities (as detailed in Annexure 2.1)	Seven zones	23	71

Non-compliance with the important orders of NGT adversely affected the monitoring of the key issues related to waste management as brought out in the subsequent paragraphs.

2.3 Assessment of quantity of waste generated and its proper management

The Public Accounts Committee- (Fourteenth Lok Sabha) in its 83rd Report, had recommended that the Indian Railways must lay down a mechanism whereby the quantum of garbage generated at stations can be assessed realistically so that adequate collection, segregation, and disposal facilities along with necessary infrastructure could be put in place by the Authorities. Ministry of Railways, in its Action Taken Note stated (30 October 2009) that the quantification of garbage is done before tendering for fixing the appropriate agency for garbage disposal work. Position emerging out of the test checked data was found to be contrary to Ministry's claim as indicated in the Table 2.2 below.

Table 2.2 - Assessment of quantum of waste generation and its segregation

Particulars	Stations	Coaching Depots
Assessment not done at all	37	18
Assessment done only in some years	18	1
Segregation as bio-degradable/non bio-degradable not done	60	22
Segregation as bio-degradable/non bio-degradable done in some of the years	17	1

Source:-Information captured from records in Zonal Railways (Annexure 2.2)

Audit observed that assessment of quantum of waste generation was either not carried out at all during the period of review or was done sporadically during the review period. Further, segregation of garbage as bio-degradable & non-biodegradable was either not

¹³ ECR-Sonepur, NER-Lucknow; NWR- Ajmer, Jodhpur, Jaipur & Bikaner WCR-Jabalpur;

¹⁴ ECR- Hajipur, Sonepur & Muzzafarpur; NWR- Ajmer, Bikaner, Lalgarh, Jaipur, Gandhinagar Jaipur, Jodhpur & Rai Ka Bagh, SECR- Raipur & Gondia, SR-Melmaruvattur.

carried out or was carried out in some of the years during the review period. Condition for segregation of waste was also not incorporated in the contract in respect of 109 stations test checked.

Ministry of Railways also emphasized that the rag picking contracts along with the garbage disposal contract should also be available at all A1, A, B & C category stations and that those contracts should always be current and their timely renewal be ensured. Review of records of all selected 109 stations and 30 coaching depots revealed that in 23 stations, the cleaning contracts including the rag picking contracts lacked continuity (**Annexure-2.2**). The period of discontinuation varied widely as shown below:-

- One to three months in nine stations,
- More than three to nine months in 10 stations
- More than 9 to 20 months in 4 stations

MoR stated (May 2022) that quantity of garbage is recorded properly and is mentioned in cubic feet dimension as disposal is done by trolleys of specific volumes in cubic feet. Ministry further added that the contractor quantity of waste is also assessed by contractor before transporting waste to municipality/local body for disposal. The reply is generic and not specific to audit comment as no such arrangements were found on record while auditing units mentioned in Table 2.2.

2.4 Regulatory requirements compliance at stations

The National Green Tribunal (NGT), New Delhi directed (26 March 2019) Ministry of Railways to prepare & implement an Action Plan with 24 identified verifiable indicators¹⁵ (**mentioned in Annexure 2.3**) for proper monitoring of waste management at 36 stations (5 per cent of 720 major stations) and periodical review of progress made in its implementation. This Plan was subsequently to be replicated in phases for all other major stations.

Railway Board, in compliance with NGT's order, directed (17 April 2019) all Zonal Railways to submit Action Taken Report by 25th of every month (commencing from April, 2019) on implementation of the Action Plan at 37 identified stations¹⁶ and also on preparation of Action Plan for balance (out of 720) major stations. This was again reiterated, with exhaustive list of verifiable indicators; vide Railway Board's letter dated 13 May 2019.

NGT further directed (04 December 2019) Central Pollution Control Board (CPCB) to evaluate the performance of major Railway stations both in terms of implementation of Action Plans and compliance to the provisions of the Water Act, Air Act and Environmental Protection Act and Rules framed thereunder. CPCB, also directed

¹⁵ Verifiable indicators included water and energy audit, ISO certification, provision of dustbin, rag picking contracts, provision of poster, installation of ETP/STP/WRPs, provision of Waste Composting Plant, Material Recovery Facilities, use of CCTV cameras for monitoring cleanliness, co-ordination with Urban Local Bodies in order to prevent unauthorized dumping of waste

¹⁶ 36 stations selected as per directions of NGT and 01 additional station identified by Railway Authorities i.e. Shri Mata Vaishno Devi Katra

(2 June 2020) that all the Zones should take steps to reduce the waste water generation as also to identify quality of sewage and non-sewage waste water separately and plan waste water recycling plants accordingly.

The NGT also directed for obtaining requisite authorisations in respect of remaining major Railway stations (out of total 720) within three months from 18 August 2020. Subsequently, Railway Board, vide their letter dated 1 September 2020 directed zonal railways to ensure compliance with the NGT's orders within the specified time limit.

Audit reviewed the records of the selected 109 stations to assess the compliance with the NGT's order by the Ministry. Following points emerged from the review:-

- i. Some of stations selected were functioning without CTE/CFOs in violation to the NGT's orders indicating the lack of monitoring at appropriate levels.
- ii. As of 31 July 2021, 59 stations¹⁷ had not even applied to the concerned SPCBs for obtaining CTEs.
- iii. In respect of 11 stations¹⁸, though CTE was applied for but the same was awaited from respective SPCB as of 31 July 2021¹⁹.
- iv. CFO was not obtained in respect of 46²⁰ stations till 31 July 2021 and
- v. In respect of 34 stations, CFO was obtained directly on the advice of SPCB without having applied for CTE.

Delays in obtaining CTE was mainly attributed to specified equipment not provided or attending to the various requirements of SPCBs and rejection of applications by SPCBs on technical grounds. *(Annexure-2.4)*

MoR stated (May 2022) that 577 stations out of 720 have obtained CFO in compliance to NGT's order. Reply is not specific to Audit comment. Details of the stations where compliance of NGT's order is pending have, however, not been given in the reply.

2.5 Action Plan involving verifiable indicators at 37 identified major stations as per NGT's order

Records regarding implementation of the Action Plan with 24 identified verifiable indicators at 37 identified stations were reviewed in all the Zones across IR and implementation in respect of most of the verifiable indicators, such as water and energy audit, ISO certification, provision of dustbin, rag-picking contracts, provision of poster etc was found satisfactory. However, implementation of the significant indicators, such as installation of ETP/STP/WTPs, provision of Waste Composting Plant, Material Recovery Facilities, use of CCTV cameras for monitoring cleanliness, co-ordination with Urban Local Bodies was not complete as brought out in Table 2.3 below:-

¹⁷ Since applied in August 2021 for 3 station i.e. Metro Rail Kolkata-Rabindra Sadan, Esplanade, Dum Dum

¹⁸ Since obtained in September 2021 at 01 station i.e. WCR-Sawai Madhopur

¹⁹ This was required to have been completed as per the cited NGT order by 31 March 2021 and this position in audit was verified and updated as of 31 July 2021.

²⁰ Since obtained in August 2021 at 02 stations i.e. SER-Shalimar and Kharagpur

Table 2.3 –Compliance with NGT orders for implementing 24 verifiable indicators

S. No.	Activity	Status of implementation/compliance (as of 31 st March 2020)
1	ETP/STP/WRPs	Not planned in five stations ²¹ . In other five stations ²² though planned but the same were not yet installed
2	Waste Compost Plant and Material Recovery Facilities	Not provided at 14 stations ²³ and at 16 stations ²⁴ respectively
3	Usage of CCTV cameras for monitoring cleanliness activity.	Primarily used for security purpose as well for monitoring cleanliness.
4	ISO certification, Water Audit and Energy Audit	Completed in all the 37 identified stations
5	Encroachment of railway land, illegal dumping in railway premises and boundary wall to prevent unauthorized dumping on railway land	<ul style="list-style-type: none"> • Encroachment found on five²⁵ stations. • Illegal dumping on railway premises was noticed in four stations²⁶. • Boundary wall not constructed at seven stations²⁷.
6	Periodical Reports	Compliance not done in respect of submission of periodical reports at five stations ²⁸ .

Implementation of Action Plan was satisfactory in respect of some stations like Pune (CR), Sealdah (ER), Rajendra Nagar Terminal (ECR), Visakhapatnam (ECoR), New Delhi (NR), Katihar (NFR), Jaipur & Jodhpur (NWR), Secunderabad, Kacheguda & Vijaywada (SCR), Ranchi & Digha (SER), Bilaspur (SECR), Hubballi & Mysuru (SWR), Jabalpur & Bhopal (WCR) and Vadodara (WR), where 20 or more out of 24 verifiable indicators were implemented. However, it was observed that implementation of the 24 Verifiable Indicators were not entirely accomplished even in respect of a single station out of the 37 stations as of 31st March 2020.

MoR in reply stated (May 2022) that works for setting up of ETps/STPs/WRPs which require huge infrastructure inputs have been sanctioned for the year 2022-23. MoR further added that composting plant not required at stations with lesser quantum of wet waste.

²¹ ECR-Dhanbad, NER- Lucknow Jn. & Manduadih, SR- MGR Chennai Central & Thiruvananthapuram Central

²² ECoR- Vizianagaram, ER- Howrah, NCR- Jhansi, WR- Mumbai Central & Vadodara,

²³ CR- Nasik Road, NR- Varanasi & Shri Mata Vaishno Devi Katra, NCR-Jhansi, Prayagraj & Agra Cant, NWR- Ajmer, SR- Thiruvananthapuram Central MGR Chennai Central, Tiruchchirappalli Jn., SCR- Secunderabad & Vijaywada, SECR – Bilaspur WCR- Jabalpur

²⁴ CR- Nasik Road, ECR- Dhanbad ER- Howrah & Sealdah, NCR- Jhansi, Agra Cant & Prayagraj, NEFR- Guwahati & Katihar, NER-Manduadih, NWR- Ajmer, SECR- Bilaspur & Raipur, SER- Digha, SWR- Hubballi, WCR- Jabalpur

²⁵ ER-Sealdah, SECR-Raipur, SWR-Hubballi, WCR-Jabalpur & Bhopal

²⁶ ECoR-Vizianagaram, NCR-Agra cant., SER-Ranchi, SECR-Raipur

²⁷ ER-Howrah, NR- Delhi, Firozpur, NCR-Agra cantt, NWR-Ajmer, SECR-Raipur, WCR-Bhopal

²⁸ ER- Howrah & Sealdah, NCR- Jhansi, Prayagraj & Agra Cant

Reply of the MoR is not specific to the stations included in the audit observation above. Further, the fact that implementation of 24 Verifiable Indicators was not entirely accomplished even in respect of a single station out of 37 stations has not been contested by MoR.

2.6 Action Plan involving verifiable indicators at other than 37 stations (balance of 720 stations)

Status of implementation of the action plan in respect of the 24 identified verifiable indicators in the remaining major stations (balance out of 720 major station) was assessed in 65 stations (*Annexure 2.5*) selected across all the zones over IR which revealed the following:-

- i. ETPs/STPs/WRP were not installed in 41 stations,
- ii. Waste Composting Plants and Material Recovery Facilities were not provided in 43 and 46 stations respectively.
- iii. CCTV cameras were not used for monitoring cleanliness activities at 28 stations.
- iv. Non co-ordination with Urban Local Bodies /Local Bodies (ULB/LBs) in 28 stations and no toilets in the circulating area in 30 stations.
- v. Water Audit not conducted at seven stations²⁹ and Energy Audit not conducted at 11 stations³⁰.
- vi. Periodical Reports were submitted by all the stations except by 10 stations³¹.

This indicates Railway Administration was not serious enough in implementation of the much-emphasized 24 verifiable indicators. NGT's orders were, thus, violated.

MoR in their reply stated (May 2022) to have complied the implementation of 24 verifiable indicators. Reply is not acceptable as audit comment was regarding stations not complying with the specific requirement. Reply of the Ministry is silent on this aspect.

2.7 Progress on actionable points under Swachh Bharat Mission (SBM)

As a part of 'Swachh Bharat' mission, Railway Board formulated actionable Points for improvement of cleanliness in station premises and issued directives in July 2016 and September 2016. Zonal Railways were asked to circulate these points to all major A1 and A category stations so that the corrective/ preventive actions wherever needed are taken and systems are set up for monitoring to improve the cleanliness standards. These Actionable Points contained, *inter-alia*,

²⁹ CR- Wadi, ECoR- Cuttack, NER - Kathgodam, Haldwani, Bareilly City, NWR- Gandhi Nagar Jaipur, WR- Bharuch


³⁰ CR- Wadi, ECoR- Cuttack, NER- Kathgodam, Haldwani & Bareilly City, NEFR- New Bongaigaon & New Jalpaigudi, WR- Bandra Terminus, Metro Rail - Dum Dum, Esplanade & Rabindra Sadan


³¹ NR- Barabanki, Panipat, Rae Bareilly & Rohtak, NCR- Prayagraj Chheoki, WCR- Katni & Pipariya, Metro Rail- Dum Dum, Esplanade & Rabindra Sadan

- (i) Picking up of garbage from the point of arising itself using ergonomic garbage collector like dustpan with handle and putting inside the garbage bin thereby avoiding sweeping down the solid waste to drains.
- (ii) Monitoring of cleaning staff through CCTVs and earmarking the specific beats for cleaning staff.
- (iii) Cleaning staff earmarked to maintain the identified beats free of garbage .
- (iv) Provision of different coloured dustbins with black polythene bag for non-biodegradable waste (dry waste) and green coloured for biodegradable waste (wet waste) within 10 meters in all the areas of passenger movement.
- (v) Provision of dustbins and proper garbage disposal arrangement in vehicle parking area.
- (vi) Foot over-bridges (FOBs) covered with wire mesh throughout the length to prevent falling of objects and garbage on to the track and sides

Progress on these important actionable points was examined in audit at the 109 selected stations and 30 coaching depots. The deficiencies noticed are indicated in Table 2.4 below.

Table 2.4 - Status of implementation on the actionable points on SBM

S. No.	Actionable point	Status of implementations
1	Provision of dustbins	(i) Different coloured signage dustbins with polythene liner bags inside were not provided in 12 stations and 15 coaching depots for collection of wet and dry waste. However, in case of 97 stations (89 per cent) different coloured dustbins were provided. (ii) At 27 stations, dustbins provided were not placed within 10 meters from any location in all the area of passenger movement. (iii) Covered dustbins were not provided in waiting room and toilets at 17 stations. (iv) Provision of dustbins not found in vehicle parking area at 38 stations.
2	Monitoring of cleaning staff	(i) In 42 stations, the CCTVs camera at the platforms of stations were not used for monitoring availability of cleaning staff at their areas of work. (ii) Beats were not earmarked for the cleaning staff at 16 stations.
3	Inclusion of cleanliness aspect in the cleaning contracts	(i) Cleaning contracts in respect of 53 stations and 18 coaching depots did not have specific clause for segregation of waste. <div style="text-align: right;">  <p>Non-segregated waste at RBL station at Lucknow Division in NR</p> </div>

		(ii) At seven stations garbage was not picked up from the point of arising.
		 <p style="text-align: center;">Dustbins overflowing with waste at MAS</p>
4	Covering FOBs with wired mesh	FOBs at 28 stations were not covered with wired mesh to prevent falling of garbage on overhead wires and track.

In continuous efforts towards monitoring the progress of stations on “Swachh Rail, Swachh Bharat” campaign, the Ministry of Railways engaged (2019) Quality Council of India for the survey for ranking of 720 stations. Result of progress on the aspects like “No littering in sight”, “Dustbin in sight and “Twin Dustbin in sight” is indicated in Table below.

Table 2.4 A - Excerpts of the result of e-survey conducted by QCI for implementation of Action Plan for cleanliness at stations

(Figures in per cent)

Particulars	No littering in sight	Dustbin in sight	Twin bins in sight
Parking area	73.98	64.6	73.77
Main Entry	85.97	84.72	62.30
Ticket counter	92.22	78.75	67.02
Waiting area	94.03	84.18	61.17
FOB & Stairs	93.56	63.01	76.40
Open sitting area	90.93	87.76	72.68
Vendor area	91.68	96.13	65.60

It may be seen that despite clear directives given by Railway Board in 2016 for implementation of actionable points for cleanliness of station premises, many stations (out of 720) have not yet completed the implementation of action plan.

2.8 Efforts made for execution of railway works through CSR initiative

For supplementing the Railway’s efforts in keeping the railway stations clean, Railway Board, instructed³² (February 2016) Zonal Railways to encourage the Corporates and PSUs for sponsoring the works at stations especially falling in their business/influence area to execute identified railway works under corporate social responsibility (CSR). These works included provision of dustbins, waste transport trollies, cleaning machines, Sewage/effluent treatment plants, waste to compost, waste to energy plants

³² letter No. 2015/EnHM/06/06 dated 03.02.2016

etc. at stations. These provisions under CSR initiative were with an objective to promote participation of corporation and PSUs for execution of environmental sustainability works, cleanliness works, sanitization of stations and provision of certain passenger amenities.

EnHM wings of the Zonal Railway/ Division were to co-ordinate such sponsoring of CSR activity and an appropriate database of the facilities created through CSR initiative were to be maintained by the Railway Administration.

The measures under CSR initiative met very limited success. Facilities provided for waste management at stations through CSR initiatives were reviewed across all Zonal Railways and the outcome is brought out in Table 2.5 below: -

Table 2.5 - Response under CSR initiative

S. No.	Work/Item provided	Numbers	Division	Zone	Cost involved (₹ in crore)
1	Dustbins	1906	CSMT, Delhi, Agra, Mumbai Central, Vadodara & Waltair	CR, NR, NCR, WR, ECOR	0.86
2	Waste to compost plant	10	Sealdah, Bikaner, Secunderabad, Mumbai Central, & Waltair	ER,NWR, SCR, WR, ECOR	0.75
3	Trolleys	10	Bilaspur	SECR	0.05
4	Waste to Energy Plant	1	Jaipur	NWR	0.91

2.9 Collection and segregation of waste generated by catering units and from trains covered under OBHS

Procedure order for handling waste arising out of pantry cars and static catering units at stations and its disposal circulated vide RB’s Commercial Circular No 55 of 2016 stipulated provision in the license agreement with catering contractor for collection of waste in two colored bins³³. Guidelines circulated vide RB’s Commercial Circular No. 14 of 1999 and Commercial Circular no. 45 of 2011 contained instruction to have local Joint Procedure Orders (JPOs) in order to implement the procedure for collection of pantry Car waste at platforms. For on board cleaning and hygiene attention in running trains, Railways had adopted the On Board Housekeeping Services (OBHS) Scheme under which cleaning and disinfection of the coaches and toilets was to be ensured by engaging outsourced agencies. Guidelines circulated by Railway Board (17 February 2016), provided for ensuring collection of garbage/litter from the coaches in secured polybags/eco-friendly bags by the contractor.

³³ *Green for biodegradable waste/wet waste and black for non-biodegradable waste/dry waste in catering units*

Review conducted in the 109 selected stations across all zonal railways revealed the following: -

- i. Provision of collection of waste in two colored bins as stipulated in the license agreement with catering contractor were not incorporated in 39 stations leading to consequential non-segregated collection of waste.
- ii. In respect of 58 stations contractors did not ensure collection of polybags containing garbage from OBHS trains.
- iii. Joint inspection conducted by Audit revealed that the segregated waste collected from the Pantry cars and OBHS trains was not unloaded in secured bags in 49 stations. In 42 of these 49 stations, waste collected from the Pantry cars or OBHS train was not dumped in the separate assigned dustbins.
- iv. JPOs were not issued in respect of 70 stations for implementing the procedure for collection of waste from pantry cars.

Non-compliance of the laid down procedures for collection and disposal of waste of catering units at stations and that from OBHS trains had adverse impact on cleanliness at these stations.

2.10 Assessment and collection/segregation of Plastic wastes at stations

Railway generates vast quantities of different types of waste- both solid and plastic waste. Public Account Committee (PAC) in its 83rd report (2008-09) stated that, the Ministry of Railways must not lose sight of environmental concern while making use of plastics and ensure adherence to applicable rules. Central Pollution Control Board (CPCB) sponsored a study through RITES regarding plastic waste generated at three railway stations (New Delhi, Old Delhi and Hazrat Nizamuddin station). The report (December 2009) indicated that about 6758 Kg. of plastic waste was being generated by these stations per day and there was no system in place to segregate degradable and non-biodegradable wastes generated at these stations. In terms of the Plastic Waste Management Rules, 2016, Indian Railways was identified as 'waste generator'³⁴.

Railway Board issued following directives³⁵ (October 2016) to Zonal Railways:-

- Minimize usage of plastic,
- Set up waste management system including collection, segregation and disposal of plastic waste in an appropriate manner.
- Ensure provision for disposal of such waste in an environment friendly manner in all cleaning contracts.

³⁴ *Rule 3 (x)]. These Rules further emphasise that waste generator shall (a) take steps to minimize generation of plastic waste and segregate plastic waste at source in accordance with the Solid Waste Management Rules, 2000 or as amended from time to time and (b) not litter the plastic waste and ensure segregated storage of waste at source and handover segregated waste to urban local body or gram panchayat or agencies appointed by them or registered waste pickers', registered recyclers or waste collection agencies.*

³⁵ *letter number 2016/Environ/01/01 dated 17.10.2016*

For better management of plastic waste, it is imperative upon railway authority to assess and take steps for separate collection and segregation of plastic waste at stations.

Audit conducted at 109 stations and 30 coaching depots revealed that assessment of quantity of plastic waste generated at 71 stations and in 26 coaching depots was not done by Indian Railways. (*Annexure 2.6*).

Railway Board directed³⁶ (August 2019) all Zonal Railways to enforce detailed measures on Plastic Waste Management with effect from 02 October 2019 which mainly included the following:-

- i) Strictly enforce ban on single use plastic material.
- ii) Encourage all railway vendors to avoid use of plastic carry bags.
- iii) Encourage staff to reduce, reuse and refuse plastic products and to use inexpensive reusable bags to reduce plastic footprint.
- iv) IRCTC to implement return of plastic drinking water bottles as part of Extended Producer Responsibility.
- v) Provision of Plastic Bottle Crushing Machines (PBCMs).

Compliance to these Plastic Waste Management Rules 2016 as also the instructions of Railway Board were examined in Audit and based on the record provided it was observed that following measures were implemented to some extent: -

- Planning and installation of Plastic Bottle Crushing Machines
- Provision of 'plastic only bins'

Progress on the above measures is indicated below -

- i. Installation of PBCMs was planned at all the 37 major stations (included in 109 stations selected for Audit) in compliance to NGT orders. This was also one of the important verifiable indicators out of the 24 indicators (referred to in Para 2.5) initially applicable for 37 identified major stations. At 14 stations, the PBCM installed were less than what was planned. (*Annexure 2.6*) Out of the 109 stations selected for Audit, PBCMs were not even planned in 11³⁷ stations and in 14 stations³⁸ though these were planned but not even a single PBCM was installed as on 31 March 2020.



Plastic Bottle Crushing Machine found choked in Bandra Terminus station in WR as on 15.02.2021.

³⁶ letter No. 2019/EnHM/11/01 dated 19.08.2019

³⁷ CR-Igatpuri, NR-Barabanki, Rohtak; NCR-Prayagraj Chheoki; NER-Gorakhpur, Chhapra, Haldwani; NFR- Hojai, New Jalpaiguri; NWR- Rai Ka bagh; SR- Melmaruvattur.

³⁸ NR- Panipat, Rajpura junction, Jalandhar Cantt; NCR – Agra Fort; NWR- Bikaner, Lalgarh; SR – Ottappallam; SWR – Yelahanka, Pandavpura,; WCR – Hoshangabad, Pipariya, Katni; WR – Valsad, Bilimora Jn

- ii. PBCMs installed at 15 stations³⁹ were not found functioning during the Joint inspection conducted with the Railway Officials. These included two stations (Hubballi & Digha) out of the 37 major NGT identified stations.
- iii. As regards provision of '*Plastic Only Bins*' as a measure of segregation of plastic waste, review in Audit revealed that in 90 stations and 25 coaching depots (*Annexure 2.6*) no such facility existed.
- iv. On the issue of steps taken to minimize the generation of plastic waste and segregation of the same at source, Audit observed that relevant clause was not incorporated in cleaning contracts in respect of 84 stations and 26 coaching depots.
- v. Record related to end usages of the plastic waste generated from PBCMs that were operational was not made available to Audit.

MoR stated that 639 PBCMs have been installed at 441 out of 720 major stations. As regards provision of '*plastic only bins*' MoR has assured better management of plastic waste.

Reply of the Ministry is not acceptable as it is generic in nature and status of planning/installation of PBCMs on the stations commented has not been brought out in reply.

2.11 Segregation, Collection and separate accumulation of Municipal Solid Waste

The Government of India has notified the Solid Waste Management (SWM) Rules, 2000 / 2016. As per Rule 4 (1), Railways are required to:-

- Segregate and store the waste generated in three separate streams namely biodegradable, non-biodegradable and domestic hazardous wastes in suitable bins;
- Handover segregated wastes to authorised waste pickers or waste collectors as per the direction or notification by the local authorities from time to time.

The National Green Tribunal (NGT), in their order dated 18 March 2015 had directed that all Railway Platforms should be kept clean and free of any Municipal Solid Waste (MSW). MSW from platforms should be collected and disposed of in accordance with Solid Waste Management (SWM) Rules 2000 to the designated MSW disposal site only and to no other place. Railway Board, thus directed⁴⁰ (April 2015) Zonal Railways to comply with the above directions of the NGT and ensure maintaining necessary records for the same.

Solid Waste Management (SWM) Rules, 2016 also specifies that no waste generator shall throw, burn or bury the solid waste generated by him, on streets, open public

³⁹ CR-Panvel, Wadi, NR-Moradabad NWR- Jaipur, SCR- Secunderabad, Kacheguda, SECR-Bilaspur, Raigarh, SER- Digha, SR- MGR Chennai Central, SWR- KSR Bengaluru, Krishnarajanpuram, Hubballi, WCR- Sawai Madhopur, WR- Bandra Terminus

⁴⁰ letter No. 2015/Environ/01/03 dated 30.04.2015

spaces outside his premises or in the drain or water bodies. In compliance with these rules, Railway Board, vide letter dated 05 September 2016, instructed zonal Railways to get the collected waste at station segregated at source in differently colour coded dustbins and further handling of these wastes should be done separately. Railway Board also directed Zonal Railways (vide letter dated 09 December 2016) to enter into Memorandum of Understanding (MoU) with Local bodies for disposal of solid wastes from stations and also to maintain records regarding the same.

Compliance with the rules prescribed in the SWM rules, 2016 and instruction of Railway Board (September 2016) *ibid* was assessed at all selected 109 stations and 30 coaching depots and following was observed: -

- i. Necessary records in support of handling Municipal Solid Waste (MSW) were not maintained at 41 stations and three coaching depots. In the absence of such records, compliance of the NGT's order could not be ascertained.
- ii. Collected waste was not segregated at source in differently colour coded dustbins at 16 stations and 21 coaching depots.
- iii. No storage sites/vats⁴¹ were identified for collection of segregated waste before final disposal at 22 stations and 10 coaching depots.
- iv. Accumulation of biodegradable and non-biodegradable waste was not done separately at 47 stations and 17 coaching depots.

The Indian Railways is traditionally dependent on the municipal waste management system to evacuate its waste. Further, in the absence of storage sites/vats for storing the segregated waste before final disposal by the municipal authorities, improper disposal of waste by burning, dumping into adjacent canals, low lying areas, and near the track, causing environmental pollution can not be ruled out.

MoR stated (May 2022) that solid waste is being collected as dry and wet waste in separate bins. MoR added that Twin bins have been provided at all major stations. Reply of the Ministry is not tenable as it did not address specific Audit observations.

2.11.1 Transportation and disposal of solid waste

Audit reviewed the status of compliance of Railway Board's instructions consequent to NGT's order (as mentioned in para 2.11) regarding disposal of collected solid waste and following points emerged: -

- i. Solid waste was not disposed of at final disposal site at 14 stations and seven coaching depots;
- ii. Segregated waste was not transported in covered condition at 15 stations and five coaching depots;
- iii. Railway Administration did not enter into local MoU with Urban Local Bodies at 28 stations and 28 coaching depots for disposal of solid waste/odious B depots.

⁴¹ Vat refers to container for putting garbage

- iv. No record was kept for storage and disposal of waste as per NGT/RB directives at 65 stations and 22 coaching depots.
- v. Td waste picker or to he system of handing over segregated waste to authorise at 50 was not in place as envisaged in the extant instructions waste collector coaching depots 3and 1 stations.

(Annexure 2.7).

MoR in their reply stated (May 2022) that cleaning contracts have been awarded at all the major 720 stations and solid waste is handed over to respective municipal bodies for disposal. Reply is, however, silent on the issues related to storage and transportation of solid waste commented in the report.

2.11.2 Facilities for Management of solid waste

Action plan at 37 identified major railway stations, subsequently to be implemented in balance of 720 stations as issued by Railway Board (April 2019) in context of NGT directives (March 2019) contained issues related to storage and disposal of waste like provisioning of Composting plant, Material recovery facility and segregated waste transportation.

The status of implementation of the above policy decisions in compliance to NGT's order dated 26.03.2019 was reviewed (*Annexure 2.8*) in all the 109 selected railway stations and 30 coaching depots. Following observations are made:-

- i. No provision made for wet waste processing facility at 77 stations and 29 coaching depots.
- ii. Material recovery facility not provided at 87 stations and 27 coaching depots.
- iii. Composting plant not provided at 77 stations and 28 coaching depots.
- iv. Waste recycling centres not set up at 102 stations and 29 coaching depots.

Further, eight stations⁴² were identified⁴³ for setting up solid waste management plants. RITES was engaged for bid process and project management for these plants. Review of implementation of setting up of solid waste management plant at the identified eight stations revealed that at 7 stations (except at Patna station) the solid waste management plant was not set up.

2.12 Conclusion

Huge quantum of waste generated at the stations and at the coaching depots warranted continuous actions for assessment, segregation, storage and its disposal. There were statutory rules and series of orders issued by NGT directing IR to take action on matter related to waste management, which were required to be complied with.

The important recommendations of the PAC for setting up EnHM directorate at the zonal and at the divisional level were partially complied with. Accountable entities at

⁴² *Chhatrapati Shivaji Maharaj Terminus, Patna, Sealdah, Howrah, Prayagraj, Varanasi, Secunderabad and MGR Chennai Central.*

⁴³ *Environmental Sustainability Annual Report 2016-17of the Indian Railways*

the railway stations, divisions and at the zonal level were not constituted in 38.60 per cent of the stations test checked. Assessment of quantum of garbage generated in the categories biodegradable and non-biodegradable was not done at many stations despite recommendations of PAC in this regard. Despite directions of the NGT, a large number of stations had not even applied for CTEs/CFOs.

The progress on implementation of action plan with 24 verifiable indicators at 37 major stations as directed by NGT was not satisfactory. ETPs/STPs/WRPs, waste to composting plant etc remained to be provided till March 2020. Requisite clauses were not incorporated in the cleaning contracts with agencies for proper segregation and disposal of waste. Efforts to execute cleanliness and waste management works through CSR met with little success. Important directions of Railway Board to formulate Joint Procedure Orders for collection of pantry car garbage were not complied with at many stations. Installation of PBCMs at stations evoked slow response as installation of PBCMs (March 2020) was far short of that planned.

Segregation of accumulated solid waste in biodegradable waste and non-biodegradable category in compliance to Solid Waste Management Rules was not done at many stations. Further, records for storage and disposal of such waste were not maintained and in large number of stations. MOUs with ULB/LBs for disposal of waste were not ensured. Progress towards construction of the required infrastructure for management of solid waste such as waste composting plants, waste segregation and recycling plant was poor in respect of the stations test checked. The instructions issued by Ministry of Railways for managing environment and housekeeping works did not have clear demarcation of role and responsibility of managing waste generated at various activity centres. Besides, fund allocation exclusively for waste management was not earmarked.

Summary of Audit findings

- PAC recommendations for setting up EnHM directorate at the zonal and at the divisional level were partially complied with.
- Role and responsibilities with specific reference to Waste Management activities were not clearly defined. Further, demarcation of the funds exclusively for waste management activities was also not done. Absence of Accountable entities at various levels despite directives of NGT has adversely affected the monitoring of the key issues related to waste management.
- Progress on implementation of verifiable indicator in terms of NGT's order was not encouraging.
- PBCM not installed at stations as planned and even where installed, the same were not functioning.
- Requisite clauses not incorporated in the cleaning contracts with agencies for proper segregation and disposal of waste. Further, Railways lacked infrastructure for management of solid waste.

2.13 Recommendation

IR needs to proactively ensure formation of EnHM wings at zonal and division level and constitution of accountable entities as directed by NGT to strengthen the waste management mechanism. IR also needs to define clear cut role and responsibilities and fund allocation exclusively for waste management activities. Besides this, IR needs to put in place an effective monitoring mechanism for managing plastic as well as solid waste in an environment friendly manner.