Report of Sub-Committee IV (EDMC Area) on Inspection of Bulk Waste Generators and Hospitals

Original Application No. 199 of 2014 & Original Application No. 281 of 2016 (M.A. No. 1007/2016) filed by Almitra H. Patel & Anr. Vs. Union of India & Ors. & Kudrat Sandhu Vs. Govt. of NCT & Ors.

April, 2017

ONSTITUTION OF SUB COMMITTE- IV (EDMCA)

S.NO.	Name		Represented by
(i)	**Dr Rashid Hasan, Ex-Adviser ,MoEF&CC**	Chairman	
(ii)	Representative of Department of Urban Development. Govt of NCT Delhi. Not below the rank of Director	Member	None represented
(iiI)	Representative of East Delhi Municipal Corporation- Not below the rank of Superintending Engineer (SE)	Member	Dr. M.L.Sharma ,Assistant Commissioner
(Iv)	Representative of Delhi Jal Board- Not below the rank of Superintending Engineer (SE)	Member	Mr. Rakesh sahni, Superintending Engineer
(v)	Representative of Medical Council of India - To be nominated by MCI	Co-convener	None represented
(vi)	Representative of Ministry of Urban Development-Not below the rank of Director	Member	Ms Ritu Pachori, Technical Officer
(vii)	Representative of Indian Railways- to be nominated by Railways	Member	None represented
(viii)	Representative of Delhi Development Authority not below the rank of Director	Member	Mr. S.K.Garg Superintending Engineer
(ix)	Representative of Delhi Pollution Control Committee- Environmental Engineer-	Co convener	Sh. Shyam Sundar, Environmental Engineer
(x)	Representative of Central Pollution Control Board- Scientist-E	Member Convenor	J. Chandra Babu, Scientist-D

The following officers have assisted the team in inspections and report writing;

1. Sh. B.L. Chawla, Senior Environmental Engineer, DPCC
2. Sh B. Vinod Babu, Scientist-E & Nodal officer, Waste Management Division, CPCB
3. Smt Vineeta, Senior Scientific Assistant, CPCB
4. Sh Rajeev Sharma, Environmental Engineer, DPCC
5. Sh. S.D. Tomar, Executive Engineer, EDMC
6. Sh Rajesh Taneja, EDMC

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Introduction:

Hon'ble National Green Tribunal (NGT) in the matter of Original Application No. 199 of 2014 & Original Application No. 281 of 2016 (M.A. No. 1007/2016) filed by 'Almitra H. Patel & Ors. Vs. Union of India & Ors. & Kudrat Sandhu Vs. Govt. of NCT & Ors' vide its order dated 10.01.2017 constituted a Committee under Additional Secretary, MoEF&CC for inspection of the premises of bulk waste generators (hospitals, hotels, schools, group housing societies, market, shopping malls etc.) and for submission of a report on the quantum of waste generated as well as status of their waste management, including installation of STPs, connection with sewerage network etc.

The order also states that the Committee under Additional Secretary, Ministry of Environment, Forest and Climate Change would be entitled to form different sub-committees from amongst above which will visit the various locations of Delhi where the mass generator of waste are located and submit their report to the Tribunal. These Sub-committees would be entitled to seek assistance of any of the Public Authorities, Corporations, Local Authority, DDA or any other Government and Semi-Government whenever they require participation of any officer (s) of Government or Authority.

The aforesaid Committee had convened two meetings with all stakeholders at MoEF&CC. The second meeting of the committee was held on 23/01/2017, wherein the following: 4 Sub-committees were constituted to cover the area of NCT, Delhi;

1. New Delhi Municipal Council Hon'ble G.K. Pandey, Former Member, NGT
2. South Delhi Municipal Corporation Hon'ble D.K. Agarwal, Former Member, NGT
3. North Delhi Municipal Corporation Dr. R. Dalwani, Former Advisor, MoEF&CC
4. East Delhi Municipal Corporation Dr. Rashid Hasan, Former Advisor, MoEF&CC

Inspections carried out by Sub-committee IV:

The Sub-committee constituted under Dr. Rashid Hasan, Former Advisor, MoEF&CC for East Delhi Municipal Corporation Area has initiated inspection of Bulk Generators like Hotels, Malls, Hospitals etc. on 04.02.2017 and onward. In pursuance to the Hon'ble NGT order 10.01.2017 in the aforesaid matter, the Sub-committee for East Delhi Municipal Corporation Area (EDMCA) has inspected 48 no. of Bulk Generators like Hospitals, Hotels, Malls, Colleges, Railway Stations, Bus Terminals as well as one Waste to Energy Plant during 04.02.2017 to 28.02.2017, as per the details as given under:

1) Hospitals : 11
2) Hotels / Banquet Halls : 14
3) Colleges : 04
4) Malls and Commercial Complexes : 06
5) Railway Stations : 04

6) Bus Terminals : 02
7) Waste to Energy Plant, EDMC : 01
8) Apartment Complex : 03
9) Mandis / Markets : 02
10) Office Complex : 03

Total : 48

1. Details of bulk waste generated

Estimated quantity of waste generated from 48 nos. of bulk-waste generators inspected by the team is given below;

S.NO.	UTILITY	QTY OF MUNCIPIAL SOLID WASTE (Kg/day)	QTY OF WASTE WATER (KLD)
1	Hospital - 11	**2577**	**2010**
2	Hotels -14	**2700**	**858**
3	Colleges - 4	**320**	**230**
4	Malls & Commercial +Complexes - 6	**2215**	**369**
5.	Railway Stations -4	**2850**	**300**
6.	Bus Terminals - 2	**1060**	**24.8**
7.	Waste to Energy Plant, EDMC -1	**-**	**-**
8	Apartment Complex - 3	**1600**	**540**
9	Mandis / Markets - 2	**6000**	**-**
10.	Office Complex - 3	**1450**	**-**
	TOTAL	**20772**	**4331.8**

2. Details of Individual Inspections

2.1 Hospitals

3.1.1 M/s Max Super Speciality Hospital, Patparganj

Date of Inspection : 04/02/2017
No. of Beds : 401
BMW Generation : 406 kg/day
WW Generation : 180 KLD

M/s Max Super Speciality Hospital located at Patpar Ganj, Delhi-110 092. This hospital was established in the year 2005. It is a 401 Bedded hospital and occupancy is about 80 to 85 %. The hospital is involved in treatment of out patients daily around (OPD) 1600. The hospital is having valid Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as Authorisation under the Bio-medical Waste Management Rules. As informed, the hospital has separate cell for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is satisfactory. Photographs taken during the visit is enclosed as Annexure-3.1.1.

Bio-medical waste generation - Presently, the hospital is generating about 406 Kg/day, which include yellow, red, white and blue category wastes (at 126 kg/day, 150 kg/day, 67 kg/day and 63 Kg/day respectively). The team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving in accordance with the operating parameters as stipulated under the BMWM Rules and is satisfactory.

Closed type of trolley is used for collection of bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patient area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, wash-water collection provision and connected to ETP. Separate provision of washing provided for washing of bins.

Presently, the hospital is using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. Presently, the segregated waste is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facility (CBWTF) located at Niloti, Delhi. Records with regard to the bio-medical waste generation and its handling are maintained as per BMWM Rules. All the workers involved in handling of bio-medical waste is trained, immunised and also provided with proper PPEs. Fire safety measures provided by the hospital are satisfactory.

Water consumption, wastewater generation and wastewater treatment and disposal: The hospital is consuming water about 180 KLD and generating wastewater about 160 KLD. The waste water generated from the hospital is treated in STP/ETP comprising of collection/equalization tank, Primary settling tank, aeration tank, secondary settling tank, treated water collection tank. Treated wastewater is used for horticulture purposes, cooling tower and for flushing in toilets. ETP sludge generated from STP/ETP is disposed-off in landfilling and is used in gardening as manure.

Solid Waste Generation: In the hospital about 548 kg/day of municipal solid waste (MSW) is generated. Bin system for MSW segregation is not followed in accordance with the Solid Waste Management Rules, 2016.

Recommendation: This committee recommends that a letter may be issued by DPCC for taking up improvements w.r.to installation of two separate bins for on-site collection of solid waste generated in wards in accordance with the SWM Rules, 2016; and training to the sanitary workers needs to be organised by Hospital at regular intervals.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.2. M/s Dr. Hedgewar Arogya Samsthan. Near KarKar Dooma Court, East Delhi

Date of Inspection : 06/02/2017
No. of Beds : 200
BMW Generation : 140 kg/day
WW Generation : 100 KLD
Untreated WW : nil

Dr. Hedgewar Aarogya Sansthan located at East Arjun Nagar, Delhi-110 032 was established in the year 2002. It is a 200 Bedded hospital and occupancy is about 100 %. The hospital is involved in treatment of out patients daily around (OPD) 2500 to 3000. As per the information provided during the visit, the hospital applied for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 on 19.08.2013 as well as applied for Authorisation under the Bio-medical Waste Management Rules on 03.05.2016. As informed, the hospital has separate cell for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is satisfactory. Photographs taken during the visit is enclosed as Annexure-3.1.2

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 138.8 kg/day which include yellow, red, white and blue category waste at 53.5 kg/day, 78 kg/day, 2 kg/day and 5.3 Kg/day respectively. The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving in accordance with the operating parameters as stipulated under the BMWM Rules and is satisfactory. Digital X-ray fixer solution generated about 325 L during April 2016 to January 2017 is stored presently for final disposal.

Presently, the hospital is using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. The hospital is using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, wash water collection provision and connected to ETP. Separate provision of washing provided for washing of bins.

Presently, the segregated waste is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. Records with regard to the bio-medical waste generation and its handling are maintained as per BMWM Rules. All the

workers involved in handling of bio-medical waste is trained, immunised and also provided with proper PPEs. Fire safety measures provided by the hospital are satisfactory.

Water consumption, wastewater generation and wastewater treatment and disposal: The hospital is consuming water about 155 KLD and generating wastewater about 100 KLD. The waste water generated from the hospital is treated in STP/ETP of capacity 100 KLD and STP/ETP is comprising of collection/equalization tank, Primary settling tank, Aeration tank, Secondary settling tank. Treated wastewater is used for horticulture purposes. ETP sludge generated from STP/ETP after drying is disposed off through CBWTF. However, STP/ETP is not operated properly due to lack of training to the STP operator.

Solid Waste Generation: About 375 kg/day of municipal solid waste (MSW) is generated. Bin system for MSW segregation is not followed in accordance with the Solid Waste Management Rules, 2016.

Recommendation: This committee recommends that a letter may be issued by DPCC for taking up improvements in a time bound manner especially w.r.to (i) Proper operation and maintenance of STP; (ii) Two bin system for collection of segregated solid waste as per SWM Rules, 2016 and (iii) disposal of fixer hypo solution only through the registered recyclers; (iv) Disposal of bio-medical waste through CBWTF in holidays as per BMWM Rules.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.3 Indira Gandhi ESI Hospital, Jhilmil Colony, Delhi

No. of Beds : 300
BMW Generation : 50 Kg/day
WW Generation : 60 KLD
Untreated WW : 60 KLD

M/s Indira Gandhi ESI Hospital located at Near Vivek Vihar Police Station, Jhilmil, Delhi- 110 095 was inspected on 06-02-2017. As informed, the hospital was established in the year 1985. It is a 300 Bedded hospital and occupancy is about 100 %. The hospital is involved in treatment of out patients daily around (OPD) 2200 to 2500. As per the information provided during the visit, the hospital is yet to apply for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as Authorisation under the Bio-medical Waste Management Rules. As informed, the hospital has separate staff for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus since last three years and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is poor. Photographs taken during the visit is enclosed as Annexure-3.1.3.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 50 Kg/day which include yellow, red, white and blue category waste at 2.4 kg/day, 18 kg/day, 8 kg/day and 21 Kg/day respectively.

Presently, the hospital is not using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. Colour coded bins are not provided with the bio-hazard symbol. The visited team observed that the provision for collection of sharp waste is not proper and requires improvement. The bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi

except in holidays. The visited team also observed that the hospital is not using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, but no wash water collection provision and its connection to ETP for further treatment and requires improvement. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are not maintained properly as per BMWM Rules.

All the workers involved in handling of bio-medical waste is not trained and also not provided with proper PPEs and awareness on the new BMWM Rules, 2016 is yet to be organised by the hospital. The visited team observed that the laboratory, microbiology, biotechnology waste is not pre-treated using autoclaving in accordance with the operating parameters as stipulated under the BMWM Rules and is satisfactory. Digital X-ray fixer solution generated about 120 l per month is sold to the local vendor but not through registered recyclers.

Water consumption, wastewater generation: The hospital is consuming water about 70 KLD and generating wastewater about 60 KLD. Untreated wastewater generated from the hospital is stored in a collection tank and is discharged into sewer.

Solid Waste Generation: In the hospital about 50 kg/day of municipal solid waste (MSW) is generated. Bin system for MSW segregation is not followed in accordance with the Solid Waste Management Rules, 2016. All the generated MSW is disposed of through MCD.

Recommendation: This committee recommends that the DPCC may issue directions to ensure compliance with respect to the action points especially w.r.to the (i) installation of adequate facilities and to carry out improvements; (ii) To comply with the provisions of BMWM Rules, 2016 and SWM Rules, 2016; (iii) Improvement of segregation practices at source; (iv) Pre-treatment of lab chemical waste as per BMWM Rules, 2016; (v) Installation of STP in a time bound manner to ensure compliance to the liquid waste discharge standards; (vi) Training/awareness to the staff periodically on waste management aspect is essential; (vii) disposal of fixer hypo solution only through the registered recyclers and (vii) Improvement in housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.4 GTB Hospitals, Dilshad Garden, Delhi

No. of Beds : 1500
BMW Generation : 1135 kg/day
WW Generation : 640 KLD
Untreated WW : nil

About G.T.B. Hospital: G.T.B. Hospital located at Dilshad Garden, Delhi – 110095 was inspected on 06-02-2017. As informed, the hospital was established in the year 1987. It is a 1500 Bedded hospital and occupancy is about 100 %. The hospital is involved in treatment of out patients daily around (OPD) 7000. As per the information provided during the visit, the hospital is having Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 which are valid upto 12.12.2017 as well as Authorisation under the Bio-medical Waste

Management Rules is valid upto 24.05.2018. As informed, the hospital has separate staff for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is good. Photographs taken during the visit is enclosed as Annexure-3.1.4

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 1135 Kg/day which include yellow, red, white and blue category waste at 334 kg/day, 590 kg/day, 31 kg/day and 180 Kg/day respectively.

Presently, the hospital is not segregating the bio-medical waste at source as per BMWM Rules. Colour coded bins are not provided with the bio-hazard symbol. The visited team observed that the bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, wash water collection provision and its connection to ETP for further treatment. Separate provision of washing of bins and trolley is provided. Records with regard to the bio-medical waste generation and its handling are maintained.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving in accordance with the operating parameters as stipulated under the BMWM Rules and is satisfactory. Digital X-ray fixer solution generated is sold to the local vendor but not through registered recyclers.

Water consumption, wastewater generation: The hospital is consuming water about 800 KLD and generating wastewater about 640 KLD. The wastewater generated from the hospital is treated in STP/ETP of capacity 1200 KLD and STP/ETP comprises collection/Equalization tank, Primary Settling Tank, Aeration Tank and Secondary Settling Tank. However, operation of ETP/STP requires improvement. Treated wastewater is used for gardening. ETP sludge generated from STP/ETP after drying is used as manure.

Solid Waste Generation: In the hospital about 1200 kg/day of municipal solid waste (MSW) is generated. All the generated MSW is disposed of through MCD.

Recommendation: This committee recommends that DPCC may issue letter to hospital for taking up the following improvements especially w.r.to (i) Training to STP operator; (ii) Training to health care staff on segregation; (iii) Installation of flow meters to the STP; (iii) maintenance of O&M records of STP and (iv) Hypo solution(X-ray fixer solution) is required to be sold only to the registered recycler.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.5 Swamy Dayanand Hospital

Dilshad Garden, Delhi

No. of Beds : 350
BMW Generation : 370 kg/day
WW Generation : 260 KLD

Untreated WW : 260 KLD

About Swamy Dayanand Hospital: Swamy Dayanand Hospital located at Dilshad Garden, Delhi – 110095 was inspected on 10.02.2017. As informed, the hospital was established during the year 1960-61. It is a 350 Bedded hospital and occupancy is about 80 to 90%. The hospital is involved in treatment of out patients daily around (OPD) 2000. As per the information provided during the visit, the hospital is applied for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 as well as Authorisation under the Bio-medical Waste Management Rules. As informed, the hospital designated a separate staff for bio-medical waste management in the hospital. At present, the hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Photographs taken during the visit is enclosed as Annexure-3.1.5.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 370 Kg/day which include yellow, red, and blue category waste at 190 kg/day, 147 kg/day, and33 Kg/day respectively.

Presently, the hospital is segregating the bio-medical waste at source and still scope for improvement as per BMWM Rules. The visited team observed that the bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using closed type of trolley without bio-hazard symbol for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, wash water collection provision and its connection to ETP for further treatment is not provided. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are maintained.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving but same is not operated w.r.to sterilisation duration in accordance with the operating parameters stipulated under the BMWM Rules. Chemical disinfection using 1 % Sodium hypochlorite solution is used which is not as per BMWM Rules, 2016. Digital X-ray fixer solution about 800 l generated during the one year is sold to the local vendor but not through registered recyclers.

Water consumption, wastewater generation: The hospital is consuming water about 330 KLD and generating wastewater about 260 KLD. The wastewater generated from the hospital is discharged into sewer without imparting any treatment.

Solid Waste Generation: In the hospital about 400 kg/day of municipal solid waste (MSW) is generated. All the generated MSW is disposed of in nearby Dhalao through Sulabh Contractor. MSW is not segregated as per Solid Waste Management Rules, 2016.

Recommendation: This committee recommends that DPCC may direct the hospital for taking up the installation of adequate facilities and to carry out improvements especially w.r.to (i) Installation of STP ; (ii) Pre-treatment of BMWM as per BMWM Rules, 2016; (iii) Training to the staff; (iv) Segregation of solid waste in bins in accordance with the SWM Rules, 2016.
Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.6 M/s Jag Pravesh Chandra Hospital, Shastri Park, Delhi.

No. of Beds : 210
BMW Generation : About 85 Kg/day
WW Generation : 90 KLD
Untreated WW : 90 KLD

About Jag Pravesh Chandra Hospital: Jag Pravesh Chandra Hospital located at Sastry Park, Delhi was inspected on 10.02.2017. As informed, the hospital was established during the year 2003. It is a 210 Bedded hospital and occupancy is about 70 to 80%. The hospital is involved in treatment of out patients daily around (OPD) 3000. As per the information provided during the visit, the hospital is applied for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. The Authorisation obtained under the Bio-medical Waste Management Rules is having validity upto 10.03.2017. As informed, the hospital identified and designated a separate staff for bio-medical waste management in the hospital. At present, the hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Photographs taken during the visit is enclosed as Annexure-3.1.6.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 83.6 Kg/day which include yellow, red, and blue category waste at 43.6 kg/day, 36.5 kg/day, and 3.5 Kg/day respectively. Details with regard to the white category waste generated by the hospital are not provided.

Presently, the hospital is segregating the bio-medical waste at source as per BMWM Rules. The visited team observed that the bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using closed type of trolley with bio-hazard symbol for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is not restricted and provided with lighting, ventilation. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are maintained.

The visited team observed that the laboratory, microbiology, biotechnology waste is not pre-treated as required under the BMWM Rules. Chemical disinfection using 1 % Sodium hypochlorite solution is used which is not as per BMWM Rules, 2016.

Water consumption, wastewater generation: The hospital is consuming water about 110 KLD and generating wastewater about 90 KLD. The wastewater generated from the hospital is treated in STP/ETP having capacity 50 KLD. STP/ETP is provided with Collection/Equilisation tank, Aeration Tank. Treated wastewater is discharged through open drain.

Solid Waste The solid waste generated is disposed of in nearby Dhalao through SMCD. MSW is not segregated as per Solid Waste Management Rules, 2016.

Recommendation: This committee recommends that DPCC may issue letter to hospital for taking up the improvements of existing practices especially w.r.to (i) Proper operation and maintenance of STP as well as enhancement of wastewater treatment capacity; (ii) Training

to all the staff to improve segregation of bio medical waste in colour coded bins specified as per BMWM Rules; (iii) Segregation and disposal of solid waste as per SWM Rules, 2016 and (iv) Pre-treatment of lab waste as per BMWM Rules, 2016; (iv) Chemical disinfection using 10 % Sodium hypochlorite solution as required under the BMWM Rules.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.7 M/s Lal Bahadur Sastry Hospital, Khichripur, Delhi

No. of Beds : 100
BMW Generation : 70 kg/day
WW Generation : 80 KLD
Untreated WW : nil

About Lal Bahudur Shastri Hospital: Lal Bahudur Shastri Hospital located at Khichari Pur Delhi-110091was inspected on 10.02.2017. As informed, the hospital was established in the year 1999 (Functional) .It is a 100 Bedded hospital and occupancy is about 188 %. The hospital is involved in treatment of out patients daily around (OPD) 3000. As per the information provided during the visit, the hospital applied for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 on 05.07.2013 as well as Authorisation under the Bio-medical Waste Management Rules on 25.04.2016. As informed, the hospital has separate cell for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus since last three years and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is very poor. Photographs taken during the visit is enclosed as Annexure -3.1.7

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 70.75 Kg/day which include yellow, red, white and blue category waste at 36.33 kg/day, 31 Kg/day, 1.25 Kg/day, and 2.1 Kg/day respectively.

Presently, the hospital is not segregation of waste at source as per BMWM Rules, 2016 and the provision for collection of sharp waste is proper. The bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. Hospital is using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, and presently under renovation. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are not maintained properly as per BMWM Rules.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving in accordance with the operating parameters as stipulated under the BMWM Rules and is satisfactory. All the workers involved in handling of bio-medical waste is not trained on the new BMWM Rules, 2016.

Water consumption, wastewater generation: The hospital is consuming water about 100 KLD and generating wastewater about 80 KLD. Untreated wastewater generated from the hospital is treated

using STP/ETP comprising Collection/Equalisation tank, Aeration Tank. Treated wastewater is used for horticulture. However, STP is not operated or maintained properly.

Solid Waste Generation: In the hospital about 1 to 1.5 TPD of municipal solid waste (MSW) is generated. All the generated MSW is disposed of through MCD.

Recommendation: This committee recommends that DPCC may direct the hospital for ensuring time bound actin plan for installation of adequate facilities and to carry out improvements especially w.r.to (i) Segregation of bio-medical waste (BMW) at source as per BMWM Rules, 2016; (ii) Needs proper record maintenance for disposal of BMW as per BMWM Rules; (iii) To operate and maintain STP properly; (iv) Proper collection and storage of sludge generation from STP; (v) To put the shredder in operation; (vi) Temporary waste storage area needs improvement; (vii) Two bin system for solid waste needs to be practised and (viii) Requires improvement in housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.8 M/s Chacha Nehru Bal Chikistalaya, Geetha Colony, Delhi

No. of Beds : 220
BMW Generation : 110 kg/day
WW Generation : 135 KLD
Untreated WW : 135 KLD

About Chacha Nehru Bal Chikistalaya: Chacha Nehru Bal Chikistalaya located at Geetha Colony, Delhi was inspected on 13.02.2017. As informed, the hospital was established in the year 2003. It is a 221 Bedded hospital and occupancy is about 100 %. The hospital is involved in treatment of out patients daily around (OPD) 900-1000. As per the information provided during the visit, the hospital obtained Authorisation under the Bio-medical Waste Management Rules which was having validity upto 07.02.2016 and applied for renewal on 05.03.2016. As informed, the hospital has separate cell for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is good. Photographs taken during the visit is enclosed as Annexure-3.1.8.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 110 Kg/day which include yellow, red, white and blue category waste at 10 kg/day, 86.5 Kg/day, 10 Kg/day, and 3 Kg/day respectively.

Presently, the hospital is using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. Segregation of waste is practiced as per BMWM Rules, 2016. The visited team observed that the provision for collection of sharp waste is proper. The bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, and wash water collection provision. Separate provision of washing of bins and trolley is provided. Records with regard to the bio-medical waste generation and its handling are maintained properly as per BMWM Rules.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving but the sterilisation duration is not maintained in accordance with the operating parameters as stipulated under the BMWM Rules. All the workers involved in handling of bio-medical waste is trained on the new BMWM Rules, 2016.

Water consumption, wastewater generation: The hospital is consuming water about 175 KLD and generating wastewater about 135 KLD. Untreated wastewater generated from the hospital is discharged directly into the sewer without imparting any treatment. Existing ETP/STP (100 KLD) is presently under renovation and capacity needs to be enhanced.

Solid Waste Generation: In the hospital about 250 Kg/day of municipal solid waste (MSW) is generated. All the generated MSW is disposed of nearby Dhalao by the own staff.

Recommendation: This Committee recommends that DPCC may direct the hospital for taking up actin plan for installation of adequate facilities and to carry out improvements especially w.r.to (i) To restore STP on priority basis, since untreated effluent being discharged directly into the sewer and also for enhancement of existing STP suitably; (ii) Bin system needs to be practised for MSW as per SMW Rules, 2016; and (iii) Training to staff for further improvement of disposal of Bio Medical Waste and MSW in accordance with Rules.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.9 M/s Dharamshila Cancer Hospital and Research Institute, Vasundhara Enclave, Delhi

No. of Beds : 200
BMW Generation : 140 kg/day
WW Generation : 100 KLD
Untreated WW : nil.

About Dharamshila Hospital and Research Centre: Dharamshila Hospital and Research Centre located at Vashundhra Enclave Delhi-10096was inspected on 13.02.2017. As informed, the hospital was established in the year 1994. It is a 200 Bedded hospital and occupancy is about 50 %. The hospital is involved in treatment of out patients daily around (OPD) 125 to 150. As per the information provided during the visit, the hospital obtained Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 and is having validity upto 11.08.2008 and applied on 02.06.2016 for renewal of Authorisation under the Bio-medical Waste Management Rules. As informed, the hospital has separate cell for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is good. Photographs taken during the visit is enclosed as Annexure-3.1.9.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 137 Kg/day which include yellow, red, white and blue category waste at 40 kg/day, 60 Kg/day, 07 Kg/day, and 30 Kg/day respectively.

Presently, the hospital is using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. Segregation of waste is practiced as per BMWM Rules, 2016. The visited team observed that the provision for collection of sharp waste is not proper. The

bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, and wash water collection provision. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are maintained properly as per BMWM Rules.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving but the records with regard to the pre-treatment with operating conditions is not maintained in accordance with the BMWM Rules. All the workers involved in handling of bio-medical waste is trained on the new BMWM Rules, 2016.

Water consumption, wastewater generation: The hospital is consuming water about 125 KLD and generating wastewater about 100 KLD. Wastewater generated from the hospital is treated by the ETP/STP (capacity -100 KLD). ETP/STP comprises collection/Eq. Tank, Aeration Tank, Secondary settling Tank, sludge collection. However, STP/ETP is not operated regularly as no sludge is generated in the existing STP/ETP and neither sludge is seen in the sludge drying bed. ETP/STP is not attached with the digital flow meter and energy meter.

Solid Waste Generation: In the hospital about 100 Kg/day of municipal solid waste (MSW) is generated. All the generated MSW is disposed of nearby Dhalao by the own staff.

Recommendation: DPCC may direct the hospital for taking up the following time bound actin plan for installation of adequate facilities and to carry out improvements especially w.r.to (i) Pre-treatment for lab chemical waste; (ii) segregation of sharp waste as per BMWM Rules; (iii) Storage of BMW requires improvement w.r.to wash water collection provision; (iv) Provision of container washing facility; (v) To operate and maintain STP regularly; (vi) Provision of energy meter to the STP (vii) Provision for collection and storage of sludge generated from STP needs to be improved; and (viii) Bin system for solid waste as per SWM Rules needs to be provided.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.10 M/s Institute of Human Behaviour and Allied Sciences, Dilshad Garden, Delhi- 110 095

No. of Beds : 365
BMW Generation: 31Kg/day
WW Generation : 330 KLD
Untreated WW : 330 KLD

About Institute of Human Behaviour & Allied Sciences: Institute of Human Behaviour & Allied Sciences located at Dilshad Garden, Delhi 110095was inspected on 27.02.2017. As informed, the hospital was established in the year 1971-1972. It is a 365 Bedded hospital and occupancy is about 90-95 %. The hospital is involved in treatment of out patients daily around (OPD) 1500-1600. As per the information provided during the visit, the hospital obtained Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 and is having validity upto 11.06.2020 and Authorisation under the Bio-medical Waste Management Rules is valid upto 10.06.2019. As informed, the hospital has separate cell for bio-medical waste management in

the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is good. Photographs taken during the visit is enclosed as Annexure-3.1.10.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 31 Kg/day which include yellow, red, white and blue category waste at 1 kg/day, 24 Kg/day, 03 Kg/day, and 03 Kg/day respectively.

Presently, the hospital is using adequate number of colour coded bins and bags for segregation of waste at source as per BMWM Rules. Segregation of waste is practiced as per BMWM Rules, 2016. The visited team observed that the provision for collection of sharp waste is proper. The bio-medical waste collected from the hospital is disposed of within 48 hours through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi except in holidays. The visited team also observed that the hospital is using pull cart with bio-hazard symbol for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation, and wash water collection provision and storage area requires improvement. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are not maintained properly as per BMWM Rules.

The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving but the records with regard to the pre-treatment with operating conditions is not maintained in accordance with the BMWM Rules. All the workers involved in handling of bio-medical waste is required to be trained on the new BMWM Rules, 2016. Presently, waste linen, mattresses is not disposed off through CBWTF and kept at the temporary waste storage area. Display board at the pre-treatment area is not provided.

Water consumption, wastewater generation: The hospital is consuming water about 415 KLD and generating wastewater about 332 KLD. Wastewater generated from the hospital is treated by the ETP/STP. ETP/STP comprises collection/Eq. Tank, Aeration Tank, Secondary settling Tank, treated water collection and sludge collection provision. However, STP/ETP is not operated regularly as no sludge is generated in the existing STP/ETP and neither sludge is seen in the sludge drying bed.ETP is not operated regularly and not maintained properly.

Solid Waste Generation: In the hospital about 8 Tonnes per month of municipal solid waste (MSW) is generated. All the generated MSW is disposed of nearby Dhalao by the own staff. MSW is not disposed off regularly and stored haphazardly.

Recommendation: This Committee recommends that the DPCC may direct the hospital for taking up the following time bound actin plan for installation of adequate facilities and to carry out improvements especially w.r.to (i) Pre-treatment for lab chemical waste in accordance with the BMWM Rules, 2016; (ii) Storage of BMW requires improvement w.r.to wash water collection provision; (iii) To operate and maintain STP regularly; (iv) Provision for collection and storage of sludge generated from STP needs to be provided; (vi) Display board at the entrance of the pre-treatment of waste should be provided; (vii) Bin system for solid waste needs to be provided and (viii) waste linen and mattresses should be disposed off within 48 hours as required under the BMWM Rules, 2016; (ix) MSW is required to be stored and disposed of as per SWM Rules, 2016.
Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.1.11 M/s Rajiv Gandhi Super Speciality Hospital, Dilshad Garden, Delhi- 110 095

No. of Beds : 650 (present occupancy 70 beds)
BMW Generation : 35 Kg/day.
WW Generation : 60 KLD

About Rajiv Gandhi Super Specialty Hospital: Rajiv Gandhi Super Specialty Hospital located at Dilshad Garden, Delhi was inspected on 27.02.2017. As informed, the hospital was established in the year 2011. It is a 650 Bedded hospital and occupancy is about 70 beds. The hospital is involved in treatment of out patients daily around (OPD) 400. As per the information provided during the visit, the hospital is yet to apply for Consents under Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981. Authorisation under the Bio-medical Waste Management Rules was valid upto 24.06.20116 and applied for renewal. As informed, the hospital has separate staff for bio-medical waste management in the hospital. The hospital is not using mercury based thermometers or B.P. Apparatus since last three years and presently using digital thermometers and B.P. Apparatus. Housekeeping of the hospital is poor. Photographs taken during the visit is enclosed as Annexure-3.1.11.

Bio-medical waste generation: Presently, the hospital is generating total bio-medical waste at about 35 Kg/day which include yellow, red, white and blue category waste at 4 kg/day,25 kg/day, 2 kg/day and 4 Kg/day respectively.

Presently, the hospital is not using desired colour coded bins as per BMWM Rules 2016. Only yellow colour bags are used for segregation of all categories of waste. Colour coded bins are not provided with the bio-hazard symbol. The visited team observed that the provision for collection of sharp waste is not proper and requires improvement. The bio-medical waste collected from the hospital is disposed of once in two days through a Common Bio-medical Waste Treatment Facilities (CBWTFs) located at Niloti, Delhi and also in holidays. The visited team also observed that the hospital is not using closed type of trolley for collection of generated bio-medical waste from different wards and its conveyance to the temporary waste storage area which is provided away from patients area and also in a designated area. The temporary waste storage area is restricted and provided with lighting, ventilation. Separate provision of washing of bins and trolley is not provided. Records with regard to the bio-medical waste generation and its handling are not maintained properly as per BMWM Rules.

All the workers involved in handling of bio-medical waste is not trained and also not provided with proper PPEs and awareness on the new BMWM Rules, 2016 is yet to be organised by the hospital. The visited team observed that the laboratory, microbiology, biotechnology waste is pre-treated using autoclaving and however its efficacy is not assessed and neither records with regard to the operating parameters as stipulated under the BMWM Rules.

Water consumption, wastewater generation: The hospital is consuming water about 75 KLD and generating wastewater about 60 KLD. Untreated wastewater generated from the hospital is treated and however ETP (Capacity: 500 KLD) is not operated regularly and requires training for the operators. Sludge generated from the ETP is used as manure.

Solid Waste Generation: Two bin system for collection of segregated solid waste is not provided in accordance with the Solid Waste Management Rules, 2016. All the generated MSW is disposed of through nearby Dhalao.

Recommendation: This Committee recommends that the DPCC may issue directions to ensure in respect of the following: (i) To comply with the provisions of the BMWM Rules, 2016 as well as SWM Rules, 2016; (ii) Operation and maintenance of the STP/ETP regularly; (iii) Housekeeping requires improvement.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I

3.2 Hotels /Banquet Hall

3.2.1 M/s The Leela Ambience Convention Hotel, Surajmal Vihar, Shahdara, Delhi

Date of Inspection : 04/02/2017
No. of Rooms : 480
No of Kitchens : 4
No of Restaurants : 4
MSW Generation : 200 kg/day
WW Generation : 460 KLD

This is five star hotel established in a built-up area of 95444 m² and has 480 rooms with 4 kitchens, 4 restaurants. It was established in 2012 after obtaining Environmental Clearance under the Environment Protection Act, 1986 (EPA, 1986) and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of this hotel is reported as 30%. Photographs taken during the visit is enclosed as **Annexure-3.2.1.**

Waste water management – Waste water generated from kitchens, laundry, floor washings, rooms, toilets, restaurants, etc. is collected for treatment. It was observed that the hotel has installed Sewage Treatment Plant of 625 KLD capacity. At present 460 KLD of waste water is generated from the hotel. The hotel has laundry facility. The waste water generated from the laundry is treated in a separate ETP. After treatment of waste water, the same is mixed with sewage for further treatment in STP. The treated wastewater is used for horticulture purposes, cooling tower and toilet flushing in rooms. Duel plumbing system has been installed in toilets

About 350 – 500 Kg/day of solid waste is reported to be generated from the hotel, the segregated waste is collected in separate bins in two parts i.e. dry waste and wet waste. Horticulture waste of about 75 Kg/day is collected separately. Cold room has also been provided for storage of putrescible wet waste to eliminate the scope of bad odour. Although the hotel has implemented two bin systems at all locations except in guest rooms Compost plant has been provided, but operation of which needs improvement. It was also observed that the staffs in the kitchen need to be trained further to improve the segregation of solid waste at generation point. Two bin waste collection system should be implemented in guest rooms. Wrapping bags are provided to guests for disposal of sanitary napkins, diapers etc. only on demand; however Hotel may provide the same as part of toiletry kit for wrapping the same securely for disposal of same as dry-waste.

Solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. Separate collection point has been identified for storage of segregated waste prior to its disposal through vendor. Used cooking oil is also sent to a separate vendor. The end use or disposal of wastes collected by vendors is not known to the inspection team. Hotel management is also seems to be not aware of the final mode of disposal by these vendors. The vendors engaged by the Hotel are not 'registered waste pickers' as required under SWM rules 2016.

Observations & recommendations – Waste segregation practices were satisfactory, however kitchen staff needs to be trained further to improve the segregation of solid waste at generation point. Two bin waste collection system should be implemented in guest rooms also. Hotel may provide wrapping bags as part of toiletry kit for wrapping sanitary napkins, diapers etc. and disposal of same as dry-waste. It was observed that STP was in operation and operating conditions were

satisfactory. There was no discharge of treated wastewater from the Hotel. The compost plant needs to be operated effectively and on regular basis a re-use the compost for plants within the premises.

The committee recommends for issuance of letter for improvements of existing practices by providing two bin system in hotel rooms and regular training to kitchen and other sanitary staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I and photographs taken during the survey also annexed at annexure-I.

3.2.2 M/s Ginger Hotels, Vivek Vihar, East Delhi

Date of Inspection : 04/02/2017
No. of Rooms : 81
No of Kitchens : 1
No of Restaurants : 1
MSW Generation : 200 kg/day
WW Generation : 28 KLD

Ginger Hotel is having plot area of 1668 m² and built up area of 3752 m2. This hotel has 81 rooms, one kitchen and one restaurant. It was established in 2010 after obtaining Consent to Establish under Water Act, 1974 and Air Act, 1981. This hotel has full occupancy on the day of inspection.

Waste water management – About 28 KLD of wastewater is reported to be generated. The hotel has installed a Sewage Treatment Plant at basement, but it was found defunct and not operating conditions at the time of visit. There was no sludge generation for STP. Anaerobic (septic) conditions were noticed in treatment units. The untreated wastewater is discharged into public sewers without any re-use or recycling.

Waste Management - No records were shown to inspecting team regarding solid waste generation from the hotel but it was estimated that approximately 70 kg/day of solid waste is generated. There was no segregation of waste generated kitchens and restaurant. Only single bins were provided in kitchen rooms and restaurant resulting into collection of mixed solid waste. Compost plant has not been provided. There is a separate shed to store the mixed waste. No provision is made to store segregated wastes. It was reported that solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. Arrangement for disposal of solid waste needs to be improved by ensuring safe disposal as per SWM rules 2016. . The vendor engaged by the Hotel is not 'registered waste pickers' as required under SWM rules 2016.

Observation & recommendations – STP installed by this hotel is found to be defunct and untreated wastewater found discharged into public sewer. Hotel was also found to be grossly violating with respect to solid waste management. Solid waste is not segregated at source of generation. It is proposed that punitive action be taken against this hotel for ensuring treatment of wastewater and implementing solid waste management practices.

Summary observation, deficiencies and recommendations are given in the tabular chart given at annexure-I. Photographs taken during the survey also annexed at annexure—3.2.2

3.2.3 M/s Park Plaza, Plot No. 32, CBD, Behind Karkar Duma Court, East Delhi.

No. of Rooms : 91

MSW Generation : Not provided
WW Generation : 56 KLD
Untreated WW : nil

This is a five star hotel is established in 2013 after obtaining Environmental clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. It is built up in a plot of 2500 m² and built up area of 5542 m² having 91 rooms , 2 restaurants and 2 kitchens .The hotel has valid consent to operate. The occupancy of hotel is reported as 57%.

Waste Water management- Waste water generated from kitchens, laundry, floor washings, rooms, toilets, restaurants, etc. is collected for treatment. The hotel has installed Sewage Treatment Plant of 100 KLD capacity, but STP is not properly operated. About 56 KLD of liquid waste is reported to be generated from Hotel. The hotel has laundry facility. The waste water generated from laundry is mixed with waste water generated from other sources, for treatment. Separate facility for treatment of laundry waste does not exist. Treated water is used for horticulture purposes. No sludge is being generated due improper operation of plant.

Waste management- No record of solid waste generated was provided by hotel authorities. In spite of two bin system in kitchen, the same is not segregated properly. Single bin is provided in rooms. Compost plant has not been provided. Although the hotel has two bins system, the solid waste is getting mixed up at waste storage area. It was reported that solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. The vendor engaged by the hotel is not registered waste picker as required under SWM rules

Observations and recommendations- STP installed by this hotel is not operating properly. Skilled staff needs to be deployed to operate the STP. The kitchen staffs need to be trained for segregation of solid waste at generation point. Two bin waste collection system should be implemented in guest rooms also. Hotel should provide wrapping bags as part of toiletry kit for wrapping sanitary napkins, diapers etc. and disposal of same as dry-waste. Cold room is required to be provided for storage of wet waste to eliminate the scope of decomposition of waste. The compost plant should be provided. This committee recommends for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to improving operation of STP, two bins system in rooms, training to staff on segregation, and installation of on-site compost plant

Summary observation, deficiencies and recommendations are given in the tabular chart given at annexure-I. Photographs taken during the survey also annexed at annexure – 3.2.3.

3.2.4 M/s Golden Palm, Patparganj, Delhi

No. of Rooms : 50
MSW Generation : No records
WW Generation : 28 KLD
Untreated WW : nil

This is a three star hotel having plot area of 1416 m² and has 50 rooms, 1 restaurant and 1 kitchen .It was established in 2013 after obtaining Environmental Clearance under EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of hotel is reported as 90 %.

Waste Water Management- Waste water generated from kitchens, floor washings, rooms, toilets, restaurants, etc. is collected for treatment. At present about 28 KLD of liquid waste is generated from the hotel. The hotel has installed Sewage Treatment Plant, but same was not operated properly. There was no MLSS in aeration tank and sludge was not generated on from STP. The hotel claims that entire treated waste water is used for gardening and sludge is used for horticulture purposes.

Waste Management- No record shown regarding solid waste generated from the hotel. In spite of two bin system in kitchen, the same is not segregated properly. Single bin is provided in rooms. No Compost plant installed. Solid waste is stored in open, with bins overflowing. It was reported that solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. The vendor engaged by the hotel is not registered waste picker as required under SWM rules

Observations and recommendations- STP installed by this hotel should be operated properly. Skilled staff needs to be deployed to operate the STP. The kitchen staffs need to be trained for segregation of solid waste at generation point. Two bin waste collection system should be implemented in guest rooms also. Hotel may provide wrapping bags as part of toiletry kit for wrapping sanitary napkins, diapers etc and disposal of same as dry-waste. Cold room is to be provided for storage of wet waste to eliminate the scope of decomposition of waste. Covered waste storage area should be provided. The compost plant should be provided. Hotel authorities to ensure final disposal of waste as per SWM rules 2016.This committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to improvement of waste management practices as per SWM Rules, 2016, proper operation, provision of covered storage shed and maintenance of ETP and Installation of compost plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given Annexure-I. Photographs taken during the survey also annexed at annexure – 3.2.4.

3.2.5 M/s Lemon Tree Hotels, East Delhi Mall.

This Hotel falls under the purview of the Uttar Pradesh State as per the proof shown by the hotel authorities.

3.2.6 M/s Park Inn by Radisson at Patparganj, East Delhi.

No. of Rooms : 76
MSW Generation : 30 Kg/day
WW Generation : 20 KLD
Untreated WW : nil

The hotel having plot area of 2130 m² and built up area of 8662 m². The hotel has 76 rooms, 1 restaurant and 2 kitchens. It was established in 2014 after obtaining Environmental Clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of hotel is reported as 55 %.

Waste Water management- Waste water generated from kitchens, floor washings, rooms, toilets, restaurants, etc. is collected for treatment. The hotel has installed Sewage Treatment Plant of 65 KLD capacity, but it was found defunct at the time of inspection. At present 20 KLD of waste water is

generated. The treated waste water is used for gardening and flushing. The dual piping system was inspected, but due to no colour coding on pipes, the existence of dual piping could not be verified.

Waste Management- about 30 kg/day solid waste is generated from the hotel. Two bin system is found in kitchen, but mix waste is collected in both bins. Single bin system is provided in guest rooms. Wrapping bags are provided to guests for disposal of sanitary napkins, diapers etc. Separate room with two bin system has been provided for storage of solid dry waste. Compost plant has not been provided. Solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. The vendors engaged by the hotel are not registered waste pickers as required under SWM rules 2016. E waste and used batteries are sent to authorize recycler.

Observations and recommendations- Staff in the kitchen needs to be trained to improve the segregation of solid waste at generation point. Two bins system should be adopted in rooms for segregation of waste at source. Compost plant should be provided. Arrangement should be made for storage of wet waste to eliminate the scope of decomposition of waste. Hotel authorities to ensure final disposal of waste as per SWM rules 2016. The committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to improvement of waste management practices as per SWM Rules, 2016, proper operation and maintenance of STP and installation of compost plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.6.

3.2.7 M/s JP Hotel & Resort, Patparganj, IP Extension, Delhi

No. of Rooms : 50
MSW Generation : 35 Kg/day
WW Generation : 16 KLD
Untreated WW : nil

This is a three star hotel, having plot area of 1421m² and seven storeyed building. The hotel has 50 rooms, 1 restaurant and 2 kitchens. It was established in 2013 after obtaining Environmental Clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of hotel is reported as 50 %.

Waste Water Management- Waste water generated from kitchens, floor washing, rooms, toilets, restaurants etc is collected for treatment. About 20 KLD of liquid waste is reported to be generated from hotel. It was observed that the hotel has installed Sewage Treatment Plant of 60 KLD, but STP is not properly operated. No sludge is being generated due improper operation of plant. The treated waste water is used for gardening and flushing. The dual piping system was inspected, but due to no colour coding on pipes, the existence of dual piping could not be verified.

Waste management- About 35 kg/day solid waste is reported to be generated from the hotel. Single bin system is provided in kitchen and rooms. There was no segregation of waste. No proper storage has been provided for storage of wet waste to eliminate the scope of decomposition of waste. Compost plant has not been provided. Solid waste is stored in open area without shed. Solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management.

Observations and recommendations- Staff in the kitchen needs to be trained to improve the segregation of solid waste at generation point. Two bins system should be adopted in rooms for

segregation of waste at source. Compost plant should be provided. Arrangement should be made for storage of wet waste to eliminate the scope of decomposition of waste. Hotel authorities to ensure final disposal of waste as per SWM rules 2016. The committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to Improvement of waste management practices as per SWM Rules, 2016, proper operation and maintenance of ETP and provision of covered shed for waste collection point and Installation of compost plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.7.

3.2.8 M/s Holiday Inn, Mayur Vihar, Delhi.

No. of Rooms : 193
MSW Generation : 450kg/day
WW Generation : 130 KLD
Untreated WW : nil

This is a five star hotel having 193 rooms, 2 restaurants and 3 kitchens. It was established in 2010 after obtaining Environmental Clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of this hotel is reported as 86%. The hotel has valid consent to operate.

Waste Water management – Waste water generated from kitchens, laundry, floor washing, rooms, toilets, restaurants etc is collected for treatment. Hotel has installed Sewage Treatment Plant of 280 KLD and ETP of 30 KLD capacity. At present 130 KLD of waste water is generated from the hotel. The hotel has laundry facility. The waste water generated from the laundry is treated at ETP. After treatment of waste water from ETP, the same is mixed with sewage water for further treatment in STP. The Sewage Treatment Plant was running efficiently. The treated waste water is used for horticulture purposes, cooling tower and toilet flushing in rooms. Dual plumbing system has also been installed in toilets. The sludge produced is disposed of along with solid waste.

Waste management - About 450 kg/day solid waste is reported to be generated from the hotel and segregated in two parts i.e. dry waste and wet waste. Cold room has also been provided for storage of wet waste to eliminate the scope of decomposition of waste. Vermi-compost plant has been provided and found working condition. About 50 kg of vermi- compost is produced, which is used for horticulture. Although the hotel has two bin system at end point but single bin system in the rooms.

Separate waste storage area has been provided for storage of solid waste. Trolleys are used to dispose solid waste from generation point to waste storage area. Solid waste which has not been composted is given to vendor for final disposal but end point of disposal is not known to hotel management. The end use of disposal of wastes collected by vendors is not known to the hotel management. The vendors engaged by the hotel are not registered water pickers as required under MWS 2016

Observations and recommendations – Waste generation practices were satisfactory, however kitchen staff needs to be trained further to improve the segregation of solid waste at generation point. Two bin waste collections should be implemented in guest rooms. Hotel may provide wrapping bags as part of toiletry kit for wrapping sanitary napkins, diapers etc and disposal of same as dry waste. Arrangement for disposal of solid waste needs to be improved by ensuring disposal as per MWS rules 2016. The committee recommends for issuance of letter for improvements of existing practices by providing 2 bin system in hotel rooms and regular training to kitchen and other sanitary staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.8.

3.2.9 M/s Crown Plaza, Mayur Vihar, Delhi

No. of Rooms : 160
MSW Generation : 400 Kg/day
WW Generation : 80 KLD
Untreated WW : nil

This is a five star built on a plot area of 5955 m² and built up area of 27680 m². The hotel has 160 rooms, 2 restaurants and 3 kitchens. It was established in 2010 after obtaining Environmental Clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of this hotel is reported as 60- 70%. The hotel has valid consent to operate.

Waste Water management – Waste water generated from kitchens, laundry, floor washing, rooms, toilets, restaurants etc is collected for treatment. Hotel has installed Sewage Treatment Plant of 280 KLD and ETP of 30 KLD capacity. At present 80 KLD of waste water is generated from the hotel. The Sewage Treatment Plant was running efficiently. The treated waste water is used for horticulture purposes, cooling tower and toilet flushing in rooms. Dual plumbing system has also been installed in toilets. The sludge produced is disposed of along with solid waste.

Waste management - About 400 kg/day solid waste is reported to be generated from the hotel and segregated in two parts i.e. dry waste and wet waste. Cold room has also been provided for storage of wet waste to eliminate the scope of decomposition of waste. Vermi -compost plant has been provided and found working condition. The vermi compost is used for horticulture. Although the hotel has two bin system at end point but single bin system in the rooms.
Separate waste storage area has been provided for storage of solid waste. Trolleys are used to dispose solid waste from generation point to waste storage area. Solid waste which has not been composted is given to vendor for final disposal but end point of disposal is not known to hotel management. The end use of disposal of wastes collected by vendors is not known to the hotel management. The vendors engaged by the hotel are not registered waste pickers as required under MWS 2016
Observations and recommendations – Waste generation practices were satisfactory, however kitchen staff needs to be trained further to improve the segregation of solid waste at generation point. Two bin waste collections should be implemented in guest rooms. Hotel may provide wrapping bags as part of toiletry kit for wrapping sanitary napkins, diapers etc and disposal of same

as dry waste. Arrangement for disposal of solid waste needs to be improved by ensuring disposal as per MWS rules 2016. Housekeeping around Vermi Compost plant needs improvement. The committee recommends for issuance of letter for improvements of existing practices with respect to waste management practices needs improvement in accordance with the SWM Rules, 2016, two bins system in hotel rooms and regular training to the kitchen and STP and other staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.9

3.2.10 M/s Fraser Suites, Mayur Vihar Phase-I, Delhi

No. of Rooms : 92
MSW Generation : 50-60 kg/day
WW Generation : 40 KLD
Untreated WW : 40 KLD

This is a five star hotel built on a plot of 4013 m², with 90 studio apartments having kitchen, drawing and bed rooms in each apartment and a restaurant at ground floor. It was established in 2011 after obtaining Environmental Clearance under the EPA, 1986 and Consent to Establish under Water Act, 1974 and Air Act, 1981. The hotel has valid consent to operate. The occupancy of this hotel is reported as 70%.

Waste Water management - About 40 KLD of liquid waste is reported to be generated. It was observed that the hotel has installed Sewage Treatment Plant, but STP was under maintenance at the time of visit. There was no sludge generation from STP. Even skilled staff is not deployed at the plant. Untreated sewage is being discharged into drain without re-use or recycling.

Waste Management - About 50-60 kg/day solid waste is generated from the hotel. It was also observed that single bin system is adopted in kitchen and apartments. There was no segregation of waste generated from kitchen and apartments. The solid waste was stored in a room at ground floor, without any arrangement of bags for final disposal. The same is being segregated at the storage area. No space for storage of wet waste is provided. Compost plant has not been provided. Solid waste is given to vendor for final disposal but end point of disposal is not known to hotel management. The vendor engaged by the hotel is not registered waste picker as required under MWS rules 2016.

Observations and recommendations - STP installed by this hotel is found to be under maintenance and untreated wastewater found discharged into drain. Hotel was also found to be grossly violating with respect to solid and liquid waste management. Two bins system should be provided in kitchen and apartments. Solid waste is not segregated at source of source of generation. The committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to improvement of waste management practices as per SWM Rules, 2016, restoration of STP and proper operation and maintenance of STP, impart training to the concerned staff and installation of compost plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.10

3.2.11 M/s Golden Petal Hotel & Banquet, Shiv Puri, Geeta Colony,

No. of Rooms : 15
MSW Generation : 80 kg/day
WW Generation : no record
Untreated WW : no record

The Golden Petal Hotel and Banquet is a guest house having plot area of 300 m² and covered area of 1200 m². The guest house has 15 rooms, banquet halls at two floors and kitchen at top. The occupancy of guest house is reported as 50%. The guest house and banquet has no consent to operate from DPCC.

Waste Water Management - No records were reported to be maintained regarding liquid waste generation. The untreated liquid waste is discharged into sewer without any re-use or recycling.

Waste management - No records were reported to be maintained regarding solid waste generation, but it was estimated that about 80 kg/day solid waste is generated from the guest house and banquet. Single bin system is adopted in kitchen and banquet. No storage area for solid waste is provided. The solid waste is reported to be disposed off at nearest dhalao being maintained by EDMC.

Observations and recommendations - Two bin system needs to be adopted in guest house, kitchen and banquet halls. Waste water from kitchen should be treated and recycled. Committee recommends issuance of directions for seeking consent form DPCC, ensuring proper treatment of wastewater and effective waste management with respect to bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, Installation of STP, Covered shed for waste collection point and training to the sanitary workers is required to be organised.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.11

3.2.12 M/s Hotel De Aqua, Shastri Park, Delhi

This hotel was not in operation, was under shutdown at the time of inspection

3.2.13 M/s Hall Mark Banquet, KarKar Duma Metro Station, Delhi

Date of Inspection : 17.02.2017
No. of Halls : Three (3)
Capacity : 1100 visitors (average visitors 500 per day)
SW Generation : 750 kg/day
WW Generation : Water supply from DMRC
Untreated WW : Open drain

Hallmark Banquet, Karkardooma, is 3 storied structure constructed by Delhi Metro Rail Corporation at Karkardooma Metro Station. Later on, part of the built up area at Metro Station had been leased out to Private operators for commercial activities. As on date, Hallmark Banquet (three party halls) and Orchid Grand Banquets are being run at different floors. However, no information in respect of exact built up area could be ascertained due to non availability of documents with the private operators. During the functions, around 1100 persons visit the premises. Photographs taken during the visit is enclosed as Annexure-3.2.13.

Water consumption, Wastewater generation and wastewater treatment and disposal: The exact information regarding water consumption was not available with the private vendor as the water was being provided by DMRC on lump sum basis. However, it has been informed that on an average 20 kilo litre of water is consumed during the functions. The waste water treatment facility comprising of collection / equalization tank, primary settling tank, aeration tank, secondary settling tank, treated water collection tank had been installed. Effluent Treatment Plant / Sewerage Treatment Plant were found completely non-operational. The food oil was also being discharged into storm water drain without treatment.

Solid Waste Generation: Temporary uncovered waste storage was provided for collection of mixed waste. Informal waste pickers or waste collectors were noticed collecting recyclable materials during the inspection. No separate collection bins were provided in the premises including kitchen. The total quantity of Municipal Solid Waste generated was approximately 750 kg. per day. The garbage is disposed of without segregation at nearby dhalao, designated place provided by the East Delhi Municipal Corporation. MSW segregation at source was not being done by private operator inconsonance of SWM Rule, 2016. Hallmark Banquet, Karkardooma, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: Committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to Bin system needs to be practiced as per SWM Rules, restoring operation of ETP in a time bound manner, provision of separate room for storage of solid waste an improving housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I.

3.2.14 M/s Orchid Grand (Banquet Hall), KarKar Duma Metro Station, Delhi

Date of Inspection: 17.02.2017
No. of Halls : Two (2)
Capacity : 600 visitors per day
SW Generation : 500 kg/day
WW Generation : Water supply from DMRC
Untreated WW : Open drain

Orchid Grand Banquet, Karkardooma, Delhi is a three storeyed structure had been constructed by Delhi Metro Rail Corporation at Karkardooma Metro Station. Later on, part of the built up area at Metro Station had been leased out to Private operators for commercial activities. As on date, Hallmark Banquet (three party halls) and Orchid Grand Banquets are being run at different floors. However, no information in respect of exact built up area could be ascertained due to non availability of documents with the private operators. During the functions, around 600 persons visit the premises. Orchid Garand hospitality Pvt. Ltd. opting consent to operate from DPCC on 28.05.2015 to run restaurant and banquet hall. Photographs taken during the visit is enclosed as Annexure-3.2.14.

Water consumption, Wastewater generation and wastewater treatment and disposal: The exact information regarding water consumption was not available with the private vendor as the water was being provided by DMRC on lump sum basis. However, it has been informed that on an average 20 kilo liter of water is consumed during the functions. The waste water treatment facility comprising of collection / equalization tank, primary settling tank, aeration tank, secondary settling

tank, treated water collection tank, had been installed. Effluent Treatment Plant / Sewerage Treatment Plant were found completely non-operational. The food oil was also being discharged into storm water drain without treatment.

Solid Waste Generation: No waste storage for collection of solid waste has been provided. Informal waste pickers or waste collectors were noticed collecting recyclable materials during the inspection. No separate collection bins were provided in the premises including kitchen. The total quantity of Municipal Solid Waste generated was approximately 500 kg. per day. The garbage is disposed of without segregation at nearby dhalao, designated place provided by the East Delhi Municipal Corporation. MSW segregation at source was not being followed by private operator inconsonance of SWM Rule, 2016. Orchid Grand Banquet, Karkardooma, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends for imposing environmental compensation or fine for grossly non-complying / violations in respect to proper operation of STP, bin system for collection of segregated waste, Provision of separate room for storage of solid waste, On-site segregation, Control of bad odour and Improvement in Housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed as annexure 3.2.14

3.3 Colleges

3.3.1 M/s Shaheed Sukhdev College of Business Studies, Vivek Vihar

Date of Inspection: 14.02.2017
No. of Students : 1200
MSW Generation : 30 kg/day
WW Generation : 100 KLD
Untreated WW : 100KLD

Shahdeed Sukhdev College of Business Studies is a premier institution of the University of Delhi, imparting education in the fields of Management and Information Technology. It was established in August, 1987 by the Delhi Administration on the initiation of UGC and the Ministry of Human Resources, has, in a short span of 25 years, established itself as the leading undergraduate management school. Around 1,200 students have been enrolled for under graduation courses.

Three storeyed building structure has been constructed having 30 classrooms and one canteen without residential hostel accommodation in a plot area of approximately 1.43 acres. However, no information in respect of built up area was reported as Sanctioned Building Plan was not available, at the time of inspection, with college authorities. The only one canteen in the college premises, having one kitchen, is being run by the private vendor for students. Housekeeping of the college was found satisfactory. Photographs taken during the visit is enclosed as Annexure-3.3.1.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the college, as per Delhi Jal Board's bill, is approximately 77 kilo litre per day (KLD) and the waste water from toilets etc. is being discharged directly without treatment into sewer line. Moreover, no oil and grease trap at canteen has been provided.

Solid Waste Generation: Only single bin system has been provided in the college to avoid littering and no separate storage facility for Solid Waste exists. Municipal Solid Waste including Horticulture waste is being disposed of at dhalao, designated place provided by Municipal Corporation, on regular basis. MSW segregation at source is not being followed. The total quantity of Municipal Solid Waste generated is approximately 30 kg. per day and therefore Shaheed Sukhdev College of Business Studies, Vivek Vihar, Delhi is not a Bulk Waste Generator as per definition defined in SWM Rule, 2016.

Recommendation: This committee recommends that letters be issued to the college for (i) Segregate solid waste at source and provide two Bin systems for collection of segregated biodegradable and non-biodegradable waste in accordance with the SWM Rules, 2016; and (ii) Provide training to staff working at canteen, and sanitary workers.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I.

3.3.2 M/s Vivekanand Mahila College, Vivek Vihar, Delhi

Date of Inspection: 14.02.2017
No. of Students : 2200
MSW Generation : 100 kg/day
WW Generation : 20 KLD

Untreated WW : 20 KLD

Vivekanand College is one of the largest college of East Delhi that provides opportunities for higher education in Arts, Comers, Social Science and Humanities to women in trans Yamuna area. The college, established in the year 1970, is spread over and area of over 10 acres which includes 4000 sqm. of built up area and 5.2 acres of open space for garden and sports facilities. The teaching - learning process is facilitated in 35 classrooms, 12 tutorial rooms, 2 laboratories, 3 computer centers, seminar room and an auditorium. The college also provides residential facilities for the principle, teaching faculty and non teaching staff. Around 2,200 students have been enrolled for under graduation courses. The canteen in the college premises, having only one kitchen, was being run by the private vendor for students. Housekeeping of the college was found satisfactory. Solar Panels has also been noticed installed for green power. Photographs taken during the visit is enclosed as Annexure-3.3.2.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the college, as per Delhi Jal Board's bill, has been reported approximately 25 kilo litre per day. The waste water from toilets, kitchen etc. was being discharged into sewerage line. No separate waste water treatment facility has been provided in the campus. Moreover, no oil and grease trap at canteen was provided.

Solid Waste Generation: No separate storage space for collection of Solid Waste exists. The onsite horticulture waste processing unit by using vermi composting was found functional. Municipal Solid Waste is dumped at dhalao, designated place provided by Municipal Corporation, on regular basis. MSW segregation practice at source is not being followed. The total Solid Waste coming out of College is more than 100 kg. and therefore Viveka Nand College, Vivek Vihar, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: Committee recommends that letter be issued to college for (i) Segregation of solid waste at source and provide two Bin systems in accordance with SWM rules, 2016, upgrading composting plant and (ii) Provide training to staff working at canteen and sanitary workers.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I.

3.3.3 Shyam Lal College, Shahdara, Delhi

Date of Inspection: 14.02.2017
No. of Students : 6000
MSW Generation : 140 kg/day
WW Generation : 90 KLD
Untreated WW : 90 KLD

Shyam Lal College was founded in 1964 and is one of full-fledged constituent colleges of University of Delhi imparting education in commerce and humanities to more than 6000 students. There is no residential hostel accommodation exist within the premises of the college. The college is being run in two shifts i.e. Morning & Evening Shifts. Upon enquiry, it has been informed that the total plot area of the college is approximately 7.29 acres with 12,000 sqm. built up area having 65 classrooms. The canteen facility in the college premises is operated by the private vendor for students. Housekeeping of the college was found un-satisfactory. The college has also been recognized for their efforts in

getting 7.5 tons of waste paper recycled during the month of December, 2016. Photographs taken during the visit is enclosed as Annexure-3.3.3.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the college, as per Delhi Jal Board's bill, was found approximately 25 kilo litre per day. The waste water from toilets etc. was being discharged into sewerage line. No separate waste water treatment was noticed in the premises. No oil and grease trap was there at kitchen's canteen. Moreover, single bin system was there to collect mixed waste. The rain water harvesting system was under installation.

Solid Waste Generation: The onsite horticulture waste processing compost pits were there but found poorly maintained. The total quantity of Municipal Solid Waste generated was approximately 140 kg. per day, though no separate storage space for collection of MSW was provided. Municipal Solid Waste without segregation is dumped at dhalao, designated place provided by Municipal Corporation, on regular basis. The Solid Waste Generation is more than 100 kg. and therefore, Shyam Lal College, Shahdara, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends that letter be issued to college for ensuring (i) Segregate solid waste collection at source as per SWM Rules, 2016, and (ii) providing training to staff working at canteen staff and sanitary workers.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I.

3.3.4 Dr. Bhim Rao Ambedkar College, University of Delhi

Date of Inspection: 28.02.2017
No. of Students : 2665
MSW Generation : 50 kg/day
WW Generation : 20 KLD
Untreated WW : 20 KLD

Dr. Bhim Rao Ambedkar College came into existence in 1991 during the birth centenary year of Bharat Ratna Baba Saheb Bhim Rao Ambedkar. It is a constituent college of University of Delhi and is sponsored by Delhi Government. There is no residential hostel accommodation exist within the premises of the college. Around 2,600 students have been enrolled for under graduation courses. The total plot area of the college is approximately 9.0 acres with 45 classrooms. However, no information in respect of built up area could be reported as Sanctioned Building Plan was not available, at the time of inspection, with college authorities. The canteen in the college premises, having only one kitchen, was being run by the private vendor for students. Housekeeping of the college was found satisfactory. The rain water harvesting system has been provided in the college premises. Photographs taken during the visit is enclosed as Annexure-3.3.4.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the college was found approximately 20 kilo litres per day. The waste water from toilets etc. was being discharged into septic tank which is cleaned as and when required. The overflow from septic tank is discharged into storm water drain and septage is used as manure. No separate waste water treatment was noticed in the premises. Moreover, no oil and grease trap at

canteen was provided. The onsite horticulture waste processing compost pits were there but found poorly maintained.

Solid Waste Generation: The total quantity of Municipal Solid Waste generated was approximately 50 kg. per day, though no separate storage space for collection of MSW was provided. During the visit of the canteen, it was noticed that the waste was being stored in single bin system without segregation. MSW segregation at source was not being done inconsonance of SWM Rule, 2016. Dr. Bhim Rao Ambedkar College, Main Wazirabad Road, Delhi is not a Bulk Waste Generator as per definition defined in SWM Rule, 2016.

Observations and recommendations-: This committee recommends that issue letter be issued to college for ensuring (i) Segregate solid waste collection at source as per SWM Rules, 2016, and (ii) providing training to staff working at canteen staff and sanitary workers.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I.

3.4 Mall/Commercial complexes

3.4.1 M/s V3S East Centre Mall, Laxmi Nagar, District Centre, Delhi

Date of Inspection : 13.02.2017
No. of Shops : 180
MSW Generation : 120 kg/day
WW Generation : 160 KLD
Untreated WW : nil

M/s V3S Mall is built in area of 12540 sq. meters and built up area is of 36000 sq. meter consists of 180 shops. It was established in 2007-2008 after obtaining environmental clearance under the EPA, 1986 and Consent to Establish under water Act, 1974 and Air Act, 1981. The mall has single bin system for collection of solid waste at shops, Corridors. It was observed during the inspection that mall has installed ETP of 165 KLD capacity but need proper maintenance. Operators of ETP required training. The mall has not maintained the log book of discharge of treated/untreated waste water. It was reported that the treated waste water is used for the Horticulture purpose. The Floor sweeping of the mall was found satisfactorily as no spillage, pooling of water/waste water, and no littering of waste was found in the mall.

The mall has installed bio-digester of capacity 60 kg/batch and it was reported that bio digesting process was not done properly. It was found that the compost plant was also not working properly. The storage of solid waste was not proper and causing foul smell. It was reported that the same was given to the vendor without knowing their permits/authorization from EDMC and their final disposal practices.

During the inspection it was observed that there was no separate bin for domestic Hazardous Waste, no separate collection of C & D and horticulture waste. And the quantity of mixed waste generated was 120kg/day but no record was maintained by the mall.

Observations and recommendations-The committee recommends issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to improvement of waste management practices as per SWM Rules, 2016 in corridors and restaurants, Proper operation of STP, Proper storage of waste with wash water collection provision, proper operation and maintenance of STP and Sludge disposal.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.4.1

3.4.2 M/s Cross River Mall (EPMS), Shahdara, Delhi

No. of Shops : 120
MSW Generation : 950 kg/day
WW Generation : 52 KLD
Untreated WW : nil

The Mall was inspected on 13.02.2017. The Mall having total area of 250000 sq. feet and built up area of 457000 sq. feet consists of 123 shops. It was established in 2007 after obtaining environmental clearance under EPA, 1986 and Consent to Establish under water Act, 1974 and Air Act, 1981. The mall has single bin system for collection of solid waste at shops, corridors etc. It was reported that the 60-70 KLD of water was consumed and source of which was outside tankers. The mode of discharge of treated waste water was storm water drain. The mall is treating about 45 KLD of waste water and Septic condition was observed in the ETP during the inspection. The Floor sweeping of the mall was found satisfactorily as no spillage, pooling of water/waste water, and no littering of waste was found in the mall. Also the fire safety measures were also adopted by the mall.

The mall has Temporary waste storage area which was enclosed and covered but requires improvement. It was found that no compost plant and bio-digester were installed by the mall. It was reported that the solid waste was disposed through vendor and final disposal of which was not known.

The temporary waste storage area is located within the premises provided with proper ventilation and there was no wash water collection system connected to sewer lines/ETP. The quantity of mixed waste generated was 150 kg/day but no record was maintained by the mall.

Observations and recommendations-This committee recommends for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to improvement of waste management practices as per SWM Rules, 2016, proper operation and maintenance of STP, provision of pull cart / trolley for waste transfer to temporary collection area and installation of compost plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure3.4.2

3.4.3 M/s Aggarwal Fun City Mall, Shahdara, Delhi

Date f Inspection	: 14.02.2017
No. of Shops	: 4 shops 2500 visitors
MSW Generation	: 400 kg/day
Kitchens/Restaurants	: 6 nos
WW Generation	: 32 KLD
Untreated WW	: nil

M/s Aggarwal Fun City Mall has a plot area of 10000 sq. meter and built up area of 30,000 sq. meter consists of 04 shops and 2500 visitors visit per day as informed by the contacted person. The mall was established in 2008. The mall has valid consent to operate which is valid up to 21.08.2017. The quantity of segregated wet and dry waste generated was 300kg/day and 100 kg/day respectively. The mall has not installed composting plant. Temporary storage area was not found covered during the inspection. Solid waste was disposed-off nearby dhallao through vendors. A measure taken for safety of sanitation workers was found satisfactorily.

The mall has installed STP of capacity 100 KLD. The sewage generated was first treated and then re-used for gardening and cooling purposes. The waste water generated by the mall was 32 KLD. The

mall have 3 D.G sets, two of 1500 KVA and one of was 500 KVA. The mall has installed fume hoods and ducting system which has stack height of 20 meters from ground level and 5 meters approx. from the roof level for emission control.

Observations and recommendations-This committee recommends for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to installation of bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, Improving operation of STP, training to the sanitary workers and STP operator

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.4.3

3.4.4 M/s DLF Galleria, Mayur Vihar Ph-I Extension

Date of Inspection : 15.02.2017
No. of Shops : 113/ 12,000 visitors
MSW Generation : 175 kg/day
WW Generation : 40 KLD
Restaurants : 01
Untreated WW : nil

The Mall having totalled built up area of 170000 sq. feet consists of 113 shops. It was established in 2006 after obtaining environmental clearance under the EPA, 1986. The mall has installed STP of 45 KLD consist of Collection tank, primary settling tank and aeration tank. It was reported that the 50-60 KLD of water was consumed and source of water is outside tankers. The treated waste water is re-used for gardening and cooling purposes.

The mall has temporary waste storage area which was found covered. It was found that no compost plant and bio-digesters were installed by the mall. It was reported that the solid waste is disposed through vendor in the nearby dhallao. The temporary waste storage area was located within the premises provided with proper ventilation. The mall has not provided two bin systems for collection/segregation of solid waste. The quantity of mixed waste generated was 150-200kg/day.

Observations and recommendations-This committee recommends for issuance of letter for improvements of existing practices with respect to bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016 and regular training to the sanitary workers and STP operator.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.4.4

3.4.5 M/s Star City, Mayur Vihar Ph-I Extension

Date of Inspection : 15.02.2017
No. of Shops : 40 shops
MSW Generation : 250 kg/day
No of Restaurants : 04
WW Generation : 25 KLD

Untreated WW : 25 KLD

This Mall having total area of 5680 sq. meter and having built up area of 12326 sq. meter consists of 30-35 shops. As informed the total number of visitors per day is 250 approx. The mall has installed STP of 25 KLD but was not found operating during the inspection. It was reported that the 7.5 KLD of water was consumed and source of which is outside tankers. The mall has also 5 bore wells. The treated waste water was re-used for horticulture purposes. The mall has three banquet halls.

The Municipal solid waste and temporary waste was found stored in open area. About 250 Kg/day of Municipal solid waste was generated by the mall. It was reported that the solid waste was disposed through vendor in the nearby dhallao. The mall has provided single bin systems for collection/segregation of solid waste.

Observations and recommendations-This committee recommends for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to provision of bins system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, provision of waste collection point, ensure proper operation of STP and provision of training to the sanitary staff and STP operators.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.4.5

3.4.6 M/s Parsvnath Commercial Complex, Seelampur, Delhi.

Date of Inspection : 28.02.2017
No. of Shops : 02 (wholesale market & a shop)
Total plot area : 51, 240 Sq.m
Built-up area : 96813 Sq.m
No.of Visitors : 1000
MSW Generation : 320 Kg/day
WW Generation : 60 KLD
Untreated WW : 50 KLD

M/s Parsvnath Commercial Complex was built in an area of 51240 sq. meter and having built up area of 96813 sq. meter. As informed, the total number of visitors per day is 1000 approx. They have obtained environmental clearance under the EPA, 1986 and Consent to operate under water Act, 1974 and Air Act, 1981 and which is valid up to 03.03.2020. The mall has installed STP of 60 KLD but was not found operating during the inspection. The STP was under repair and waste water was disposed off into the drain without treatment.

The temporary waste was found stored in covered area and as informed 320 Kg/day of Municipal solid waste is generated by the mall. It was reported that the solid waste was disposed through vendor without knowing the final disposal. The quantity of segregated wet and dry waste generated was 15-20kg/day and 300 kg/day respectively. The mall has not installed composting plant. The mall has provided single bin systems for collection/segregation of solid waste.

This committee recommends for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to provision of bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, augmenting and re-commissioning the STP, regular training to the sanitary workers and STP operators.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.4.6

3.5 Railway Stations

3.5.1 Shahdara Railway Station

Date of Inspection: 14/02/2017
No. of trains : 200 per day
No. of Passengers: 25000 per day
MSW Generation : 800 kg/day
WW Generation : 200 KLD
Untreated WW : 200 KLD

Shahdara Railway Station is a very old Railway Station having 4 platforms, covering an area of about 1.5 km². It caters 200 trains and 25000 passengers per day. The Railway Station has one restaurant run by IRCTC. Sh. Om Parkash Sharma, Superintendent of railway station present during inspection.

Waste Water Management - The station has two bore wells and OHT of 225 lakh capacity. Liquid waste generated is reported to be 200 KLD. No treatment plant is provided for treatment of liquid waste. The untreated waste is discharged into city sewerage system.

Waste Management - Housekeeping was very poor. Approach to the railway station was found dirty and unhygienic condition and waste was found scattered all over the outside premises. Daily waste generation from station premises is reported to about 800 kg. There were no dust bins on platform and station premises. Waste is collected from sweepings and stored in open. The solid waste is not segregated and there is no provision for storing the waste. Animals and rodents were seen at waste storage site under the bridge. Sanitation conditions were poor. Overall, the collection and storage of waste is not as per SWM rules 2016. The stored solid waste is disposed off at nearest dhalao (waste pick-up point) of EDMC by the staff engaged for sanitation.

Observations and recommendations- The house keeping was poor. Collection, segregation and storage was not as per SWM rules 2016. There are no facilities for treatment of wastewater. It is recommended that directions be issued to Railways authorities to augment the facilities in time bound manner for collection segregation, storage and transfer of waste through authorised waste pickers. Two bins system form collection of dry and wet wastes should be implemented. It is also required to impart training to housekeeping staff by Indian Railways. A sewage treatment plant needs to be installed with provision for re-use of treated water. Washable aprons should be provided for railway tracks at station premises.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.5.1

3.5.2 Vivek Vihar Railway Station

Date of Inspection : 14-02-2017.
No. of trains : 31 trains per day
No. of Passengers : 1200
SW Generation : 50Kg/day
WW Generation (one tube well) : Records not available
Untreated WW : Records not available

Vivek Vihar Railway Station is having 2 platforms covering an area of about 0.25 km². It caters 1200 passengers. The Railway Station has no restaurant or canteen. Sh. SS Shakdore, charge of railway station was present during inspection.

Waste Water Management - The station had no record of arrangement of water and disposal of liquid waste generated. Station has one tube-well to meet water requirements. There is no specific discharge point for wastewater generated from station premises.

Solid Waste Management - No bin system is found during visit. Solid waste is swept from platform periodically and disposed in open adjacent to platform. The waste was found littered in open in and around the railway station. There was no system of waste segregation and waste collection. No record of waste generated is available. Daily waste generated is reported to about 50 kg. No provision of collection and storage space. Information regarding disposal of solid waste was not provided.

Observations and recommendations - The house keeping was poor. Collection, storage and disposal of solid waste were not as per SWM rules 2016. It is recommended that directions be issued to railway authorities for proper upkeep of railway Station and to implement solid waste management as per SWM rules, 2016.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.5.2

3.5.3 Anand Vihar Railway Station

Date of Inspection : 14-02-2017
No. of trains : 20
No. of Passengers : 60000 per day
MSW Generation : 2 TPD
WW Generation : 100 KLD
Untreated WW : 100 KLD

Anand Vihar Railway Station has 7 platforms covering an area of about 100 acre. About 15-20 trains originate or terminate at this Station. There are multiple stalls/eateries in Station premises. Sh. SK. Chopra, Superintendent was present during inspection.

Wastewater Management - The station is receiving water from one rainy well (infiltration gallery) installed at Mandawali. This railway station has its own Sewage treatment Plant of 110 KLD capacity, but STP was found not operated properly and partially treated sewage was being discharged into open drain. No sludge was found at ETP, which indicates that ETP has not been operated properly.

Solid Waste Management - The railway station was found clean and in hygienic condition compared to other railway stations in Eastern Delhi. Multiple bins were provided all throughout the station. The tracks have washable aprons and were found washed at the time of inspection. Daily waste generated is reported to about 2000 kg. The mixed solid waste is segregated manually from the waste collection point in effective manner. An NGO named Chintan was working in segregation of waste and re-use of recyclables from collection point of the railway station. The open collection point has no access control for animals. Un-usable solid waste fraction is sent for disposal at Ghazipur dumpsite. The over-all housekeeping was found satisfactory.

Observations and recommendations - It is recommended that a letter be issued Railway Authorities to operate the sewage treatment plant properly and treated waste water needs to re-used for horticulture, washing of tracks etc. to reduce groundwater extraction. The existing bins should be replaced with two bin system to achieve segregated collection of solid waste from station premises as per SWM Rules, 2016. Regular monitoring by railway authorities and training to housekeeping staff is required. ETP should be run and maintained properly.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.5.3

3.5.4 Mandawali Railway Station

Date of Inspection : 28-02-2017
No. of trains : 22 (stoppage)
No. of Passengers : 500 to 600 per day
MSW Generation : Not provided
WW Generation : Not provided

Mandawali Railway Station is having 2 platforms covering an area of about 0.75 km². It has 22 train stoppage and about 500-600 passengers travel daily. The Railway Station has no restaurant or canteen. Sh. Rahul, Station Master was present during visit and briefed about the station operations.

Waste water management - The station has water supply from Delhi Jal Board. No records of water usage and disposal of waste water generation were available. Wastewater is discharged into open drainage.

Solid Waste Management - The railway Station has no arrangement of cleaning. No bin system is found during visit. The waste was found to be littered in open, in and around the railway station. No system for waste segregation and collection. No record of daily waste generation is maintained. However, daily waste generated is reported to about 500 kg. No provision of storage space exists. The solid waste was dumped along railway station in low lying area. The people living in JJ cluster close to railway station were dumping their waste within station premises. There was no separate staff for housekeeping, resulting in unhygienic and bad sanitary conditions in the station premises.

Observations and recommendations - It is recommended that directions be issued to Railway Authorities to make arrangements for cleaning of Railway Station. Collection, segregation and disposal of solid waste should be done as per SWM Rules, 2016. The solid waste thrown in low lying area needs to be lifted and disposed off through authorised waste pickers. Regular cleaning and safe disposal of waste as per SWM rules 2016 is required to maintain cleanliness in the station area.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure-3.5.4

3.6 Bus Terminals

3.6.1 Anand Vihar ISBT

Date of Inspection : 14-02-2017
No. of buses : 3000
No. of Passengers : 152000 per day
MSW Generation : 1000 Kg/day
WW Generation : 24 KLD
Untreated WW : 24 KLD

Anand Vihar Bus Terminal was commissioned in the year 1996, it is spread in an area of about 21 acre. It has 160 bays and caters 3000 buses and caters to about 1.5 – 2 lakhs passengers.

Waste Water management - The station has 4 bore wells for extraction of ground water is about 30 KLD. There is no ETP for treatment of wastewater generated from the premises. Untreated sewage generated is discharged into drain without any treatment. There was accumulation of untreated sewage in open ditches/low-lying area within bus-station remises.

Waste Management – The eateries/shops inside the bus terminal have provided bins in front of their shops. Single bins were also provided by in the premises of bus terminal; however, the number of such bins is not adequate. The waste was not segregated. The waste was collected and stored in open area in scattered manner and there was no access control for stray animals. The waste from collection point is disposed off at nearest dhalao of EDMC. No record of daily waste generation was available. However, daily waste generated is reported as about 2000 kg.

About 46 housekeeping staff is deputed for looking after cleaning of bus terminal, however housekeeping was poor and needs improvement. People were found defecating and urinating in open, thus creating unhygienic conditions. Public toilet system provided was not adequate.

Observations and recommendations - Regular monitoring by higher authorities and training to housekeeping staff by Delhi Transport Corporation is required. It is required to replace the existing waste bins into two bin system as required under SWM Rules, 20-16. A captive compost plant should be provided. It is required to install sewage treatment plant and treated wastewater should be re-used within bus-terminal, so as to reduce extraction of ground water.

The Committee recommends for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements with respect to bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, Up gradation of sanitary conditions, Installation of STP, Installation of compost plant, augmenting waste collection point and regular training to the sanitary workers is required to be organised by the DTC to improve waste management and housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure – 3.6.1

3.6.2 Shahdara Bus Terminal

Date of Inspection : 14-02-2017
No. of buses : 200
No. of Passengers : 10000
MSW Generation : 50 – 60 kg/ day
WW Generation : 800 litres per day
Untreated WW : nil

Shahdara Bus Terminal is spread in an area of about 5000 m², it is run by Delhi Transport Corporation. This terminal was commissioned in the year 1990. It has 4 bus bays and caters 200 -250 buses and about 10,000 passengers per day. Sh. Ram rattan Singh is in charge of bus terminal was present at the time of inspection.

Waste Water Management - The bus terminal has no arrangement of public toilets. The Sulabh Shochlaya adjacent to bus terminal is used for the purpose. The station has arrangement of municipal water. About 800 litres of water is used per day. Wastewater generated from the premises is reported to be discharged into public sewer.

Waste management - Single bins provided in Bus-terminal were not adequate in number. No record of daily waste generation was available. However, daily waste generated is reported to be about 50 – 60 kg. The solid waste is not segregated. No provision was made for waste collection point. The waste is collected from bins was being transferred in trolleys and disposed off in nearest Dhalao.

Observations and recommendations - Housekeeping needs improvement. Solid waste collection and segregation should be ensured as per the provisions under SWM rules, 2016. Regular monitoring by higher authorities and training to housekeeping staff by Delhi Transport Corporation is required. Quantity of wastewater generation was less, therefore, separate STP may not be required, and the same may be discharged through public sewerage system leading to STP.

The Committee Recommends for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements with respect to bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016, Up-gradation of sanitary conditions, discharge of wastewater into public sewerage network connected to terminal STP and training to the sanitary workers is required to be organised by the DTC to improve waste management and housekeeping.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure – 3.6.2

3.7 Wastes to Energy Plants

3.7.1 M/s EDWPC Pvt Ltd., Ghazipur

Date of Inspection : 13.02.2017
Capacity : 12 MW
Processing Capacity : 2000 TPD (permitted 1300 TPD)
RDF Production : 550 TPD
No o Boilers : 01
Average – 8 MW generations

The Waste to energy plant was inspected on 13.02.2017. The plant has been installed after obtaining environmental clearance under the EPA, 1986 and Consent to Establish under water Act, 1974 and Air Act, 1981. Mixed solid waste is received at the plant site which is segregated into different categories i.e compostable waste, RDF, inert material, plastic, metals etc. The plant has mechanical segregation facility. The plant has capacity to generate 12MW electricity and solid waste processing about 1300 metric tonnes. At present about 08 MW electricity is generated. It was informed that discussions are going on for processing the waste 2000 metric tonnes per day.

The plant is equipped with online monitoring system for measurement of let out emissions. The pollutants from the emissions of boiler are treated in the reactor by using lime and activated carbon slurry and followed by trapping the pollutants in the bag filters. The leachate treatment plant has been installed to treat the leachate and the treated leachate is used in the process. The plant is using treated effluent from the sewage treatment plant in its process.

Fly Ash generated from the process is re-utilized for manufacturing of bricks, blocks etc. compostable waste is sent to its compost plant and inert material to C&D waste processing plant. The bottom ash was being sent for disposal in Ghazipur dumpsite

This committee recommends for augmenting the capacity of Waste to Energy and Waste processing Plants is required to address entire waste generated from EDMC area.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.7.1.

3.8 Residential Apartments

3.8.1 Milan Vihar, Plot No. 72, IP Extension, Delhi-110 092

Date of Inspection : 20.02.2017
No. of Flats : 370
Plot Area : 6.5 Acres
Built up area : 50 -60 %
MSW : 500 to 600 kg/day
Water consumption : 240 KLD
WW Generation : 190 KLD

About Milan Vihar Co-operative Group Housing Society, I.P. Extension, Delhi: Milan Vihar Co-operative Group Housing Society is a seven story residential housing society having 399 nos. of flats out of which approximately 370 are occupied. The total built up area is approximately 12,000 sqm in a plot area of 6.5 acres. However, no exact information in respect of built up area could be obtained as Sanctioned Building Plan was not available, at the time of inspection, with the management committee. The rain water harvesting system was found installed. Photographs taken during the visit is enclosed as Annexure-8.1.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the housing society is approximately 260 kilo Litre per day. The waste water from toilets, kitchens and washrooms etc. is being discharged into sewer line provided by Delhi Jal Board.

Solid Waste Generation: The quantity of Municipal Solid Waste, which is being disposed of without segregation at nearby dhalao on daily basis, has been reported to be generated approximately 500-600 kg. per day. The mixed garbage is collected through chute system in each Block. Milan Vihar Cooperative Group Housing Society, I.P. Extension, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends for issuance of letter to the Milan Vihar CGHS for (i) Segregate solid waste at source and provide two Bin systems for collection, setup in house unit of composting plant in accordance of waste generation and handover non-biodegradable waste to East Delhi Municipal Corporation, use of chute only for the dry waste and (ii) Providing training to sanitary staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.8.1.

3.8.2 MayurDhwaj, Plo No. 60, IP Extension, PatparGanj, DELHI-110 092

Date of Inspection: 20.02.2017
No. of Flats : 300
Plot Area : 5 Acres
Built up area : 40 %
MSW : 500 kg/day
Water consumption : 190 KLD
WW Generation : 150 KLD

About Mayur Dhwaj Co-operative Group Housing Society, I.P. Extension, Delhi: Mayur Dhwaj Co-operative Group Housing Society is a seven story residential housing society having 300 nos. of flats. The total built up area is approximately 4,000 sqm. in a plot area of 5 acres. However, no exact information in respect of built up area could be obtained as Sanctioned Building Plan was not available, at the time of inspection, with the management committee. No rain water harvesting system was there. Photographs taken during the visit is enclosed as Annexure-8.2.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the housing society is approximately 250 kilo litres per day. The waste water from toilets, kitchens and washrooms etc. is discharged into sewer line provided by Delhi Jal Board.

Solid Waste Generation: The quantity of Municipal Solid Waste, which is being disposed of without segregation at nearby dhalao on daily basis, has been reported to be generated approximately 500-600 kg. per day. The mixed garbage is collected through chute system in each Block. Mayur Dhwaj CGHS, I.P. Extension, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends issuance of letter to the Mayur Dhwaj CGHS for ensuring segregate solid waste at source, provide two Bin systems for collection, setup in house unit of composting plant, use of chute only for the dry waste and Providing training to sanitary staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.8.2.

3.8.3 Amrapali Apartment, IP Extension, Patpar Ganj, DELHI-110 092

Date of Inspection	: 20.02.2017
No. of Flats	: 302
Plot Area	: 5 Acres
Built up area	: 40 -50 %
MSW	: 500 Kg/day
Water consumption	: 225 KLD
WW Generation	: 200 KLD

About Amrapali Apartment, I.P. Extension, Delhi: Amrapali Apartment is a three story residential housing society having 300 nos. of flats. The total built up area is approximately 4,000 sqm. in a plot area 5 acres However, no exact information in respect of built up area could be provided as Sanctioned Building Plan was not available, at the time of inspection, with the management committee. No rain water harvesting system has been installed.

Water consumption, Wastewater generation and wastewater treatment and disposal: The water consumption of the housing society is approximately 220 kilo litres per day. The waste water from toilets, kitchen and washroom etc. was being discharged into sewer line provided by Delhi Jal Board.

Solid Waste Generation: The quantity of Municipal Solid Waste, which is being disposed of without segregation at nearby dhalao on daily basis, has been reported to be generated approximately 500-600 kg. per day. The mixed garbage is collected through chute system in each Block. Amrapali CGHS, I.P. Extension, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends issuance of letter to Amrapali Apartment CGHS for ensuring segregate solid waste at source, installation of in house unit of composting unit and provide training to sanitary staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.8.3.

3.9 Mandi/Markets

3.9.1 M/s Flower Mandi, Ghazipur, Delhi.

Date of Inspection : 27.02.2017
No. of Shops : 411
Plot Area : 9.9 Acres
Built up area : 1.5 Acres.
SW : 3 TPD
Wastewater generation: No data

The Phool Mandi, Ghazipur has been developed in Ghazipur area in the year 2015. It spreads in 3.7 acre area and 180 shops have been leased out to private vendors for trading flowers. Fruit and vegetable mandi, Ghazipur is being managed by Secretary, Agriculture Produce Marketing Committee.

Water consumption, Wastewater generation and wastewater treatment and disposal: The exact information regarding water consumption was not available. No waste water treatment facility like, ETP or STP has been installed. The waste water without treatment was being discharged directly into Storm Water drain.

Solid Waste Generation: Separate waste storage facility for collection of flower waste has been provided without enclosure within the mandi premises. The total quantity of Municipal Solid Waste generated is approximately 3000 kg. per day. The un-segregated waste is collected and transported by East Delhi Municipal Corporation for dumping at Sanitary Landfill Site (SLF), Ghazipur. MSW segregation at source was not being followed by APMC in consonance of SWM Rule, 2016. Phool (Flower) Mandi, Ghazipur, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends for issuance of direction for ensuring time bound action plan to the Agriculture and Market Produce Committee for covering waste storage area, ensure disposal of segregated waste on daily basis, segregation of dry and wet waste to be followed by the shops for segregation as per SWM Rules, 2016, and installation of compost / biomethanation plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.9.1.

3.9.2 M/s Subji Mandi of Agricultural Produce Marketing Committee, Ghazipur, Delhi.

Date of Inspection : 27.02.2017
No. of Shops : 468 (small 180, large 288)
Plot Area : 37 Acres
MSW : 3 TPD

About Fruit and Vegetable Mandi, Ghazipur, Delhi: The Fruit and Vegetable Market Committee, Shahdara was established in the year 2001 and was shifted to present premises at Ghazipur in the year 2015. It spreads in 15 acre area and 288 shops have been leased out to private vendors for trading fruits and vegetables. Fruit and Vegetable Mandi, Ghazipur is being managed by Secretary,

Agriculture Produce Marketing Committee. Photographs taken during the visit is enclosed as Annexure-1.

Water consumption, Wastewater generation and wastewater treatment and disposal: The exact information regarding water consumption was not available. No waste water treatment facility like, ETP or STP has been installed. The waste water without treatment was being discharged directly into Storm Water drain.

Solid Waste Generation: Separate waste storage facility for collection of fruits and vegetables waste has been provided at three different locations with enclosures within the Mandi premises. The total quantity of Municipal Solid Waste generated is approximately 10-12 tonnes per day. The un-segregated fruit and vegetable waste is collected and transported by East Delhi Municipal Corporation for dumping at Sanitary Landfill Site (SLF), Ghazipur. MSW segregation at source was not being followed by APMC in consonance of SWM Rule, 2016. Fruit and Vegetable Mandi, Ghazipur, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends for issuance of directions for ensuring time bound action plan for providing covered waste storage area, ensure daily disposal of segregated non-recyclable waste, ensue segregation of dry and wet waste as per SWM Rules, 2016 and installation of compost / biomethanation plant.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.9.2.

3.10 Office Complex

3.10.1 SCOPE Complex, District Centre, Laxmi Nagar, Delhi

Date of Inspection : 17.02.2017
Officer Complexes : Major ONGC-10 floors, HPCL-03 floors & SAIL-05 floors
Waste Generation : 1450 Kg/day
Water consumption : No data

SCOPE Minar, Laxmi Nagar, Delhi a multi-storey structure located at Laxmi Nagar District Center primarily constructed to accommodate the offices of Public Sector Undertakings, Govt. of India. As of now, 36 offices are functioning from the premises most of the offices does not have canteen facility, however, it was informed that three canteens had been operating by ONGC, HPCL and SAIL office. However, no information in respect of total plot area and built up area could be obtained due to non availability of documents with the maintaining agency.

Water consumption, Wastewater generation and wastewater treatment and disposal: The exact information regarding water consumption was not available with the maintaining agency. No waste water treatment facility like, ETP or STP has been installed. No consent to operation from DPCC was obtained. The waste water without treatment was being discharged directly into Storm Water drain.

Solid Waste Generation: Separate waste storage facility for collection of municipal waste has been provided outside the building premises. The total quantity of Municipal Solid Waste generated was approximately 1450 kg. per day. The garbage is disposed of without segregation at nearby dhalao, designated place provided by the East Delhi Municipal Corporation. MSW segregation at source was not being followed by private operator in consonance of SWM Rule, 2016. SCOPE Minar, Laxmi Nagar, Delhi is a Bulk Waste Generator as per definition provided in SWM Rule, 2016.

Recommendation: This committee recommends for issuance of letter for improvements of existing practices with respect to on-site segregation of waste to be followed as per SWM Rules, 2016 by all offices, disposal of sewage into sewerage network connected to terminal STP, provision of training to sanitation and kitchen staff.

Summary observation, deficiencies and recommendations are given in the tabular chart given at Annexure-I. Photographs taken during the survey also annexed at annexure—3.10.1

3. Common Observations of Inspection

Following are the common observations of the Committee which are derived based on inspections of actual operation practices by bulk-waste generators in East Delhi Municipal Corporation area;

(i) Hospitals are aware of the requirement of following colour coded segregation and requirement of proper storage of biomedical waste prior to sending it to CBMWTF. Some of the hospitals still need improvement and awareness in this regard.

(ii) Most of STPs installed in hospitals are not functioning or not operated properly.

(iii) Only single bins were installed for collection of solid waste in Railways Stations, bus-stations, colleges, hotels, etc.

(iv) Some of the generators such as Hotels, Malls etc. have provided two bin system for collection of waste, but failing to practice good segregation practices

(v) Most of the generators were not providing separate collection of domestic hazardous waste, and also not aware of the requirement of providing wrapping bags for sanitary napkins, used diapers etc. (for disposal in dry-waste bins)

(vi) Though the hotels have provided two bins system in kitchen, they fail to provide similar two bin waste collection from their guest rooms. Moreover, most of the hotels are failing in effective segregation of waste in two bin systems installed.

(vii) Most of the bulk-waste generators are sending their waste through vendor without knowing how those vendors are disposing their waste ultimately (no proper arrangement for backward linkage).

(viii) None of the waste pickers / waste collectors (vendors engaged by bulk waste generators) are authorised/registered by Municipal Corporation (as required under SWM Rules, 2016) to conduct their business.

(ix) STPs have been installed in most of the hotels, malls, hospitals except in colleges, bus terminals, railway stations etc. However, most of these STPs were found defunct and not operated and maintained properly.

(x) Most of the STPs installed by bulk-waste generators were found to be defunct and non-operational.

(xi) The committee observed that there is a lack of awareness among the staff about the solid waste, bio-medical waste, e-waste and hazardous waste management rules.

(xii) The type of waste collection bins and equipment used for collection and transfer of waste are not adequate. Mechanised equipment such as pull-cart trolleys, wheel trolleys are yet to be installed.

(xiii) The committee has observed that sanitation conditions in public utilities such as Bus Terminals and local train stations are very poor and needs immediate attention.

(xiv) On-site waste processing facilities such as bio-digesters, compost pants, vermicomposting plants etc.

5. Category-wise Recommendations of Bulk-Waste Generators

5.1 Hospitals

The committee observed that there are some common deficiencies and non-compliances on part of Health Care facilities. Committee therefore recommendations the following to ensure compliance with BMW Rules, and guidelines;

- Need improvement in on-site collection, handling and storage prior to handling over the waste to CBMWTFs
- Improvement in segregation of biomedical waste as per the colour coding
- STPs were not installed in some of the hospitals, installation of the same needs to expedited
- Almost all hospitals should have dedicated trained staff for operation and maintenance of ETPs and to ensure compliance to discharge standards.
- 10% sodium hypochlorite solution is not commercially available; moreover it is difficult to handle such high concentration liquid. In this regard, hospitals may continue to sterilise the wastes at concentrations as specified in earlier BMW rules, 1998. Meanwhile a clarification in this regard may be obtained from MoEF&CC.
- Hospitals should ensure that spent hypo solution generated form X-Rays should be given to only the actual user, who has authorisation from SPCBs/PCCs.
- Hospital should install two bins for collection of dry and wet solid waste as per the provisions under SWM rules, 2016. Separate bins should also be installed for domestic hazardous wastes.
- Separate storage provision should also be made for other wastes such as used batteries, E-Waste, CFLs, etc.
- It is practically not possible to ensure no-chlorinated plastics in medical treatment (which are used in such as gloves, blood bags, vaccine vials etc.); however health care facilities should take every measures to minimise use of non-chlorinated plastics. Further, every hospital should ensure use of non-chlorinated plastic bags for disposal as required under BWM rules, 2016. Use of limited quantity of chlorinated plastics may not cause environmental concern as long as the standards already notified for hydrogen chloride and Dioxins in incinerator emissions are met. In this regard, clarification may be sought from MoEF&CC
- Regular training should be imparted to nursing staff, medical attendants, housekeeping staff and others involved in generation, handing and disposal of wastes (biomedical and other wastes) generated in hospital premises.
- HCF should ensure disposal of bio-medical waste through CBWTF in holidays also as per BMWM Rules.
- Every hospital should ensure pre-treatment of laboratory waste and contaminated/date-expired blood bags.
- Hospitals should engage trained staff for operation of STPs. Installation of flow meters, periodic testing of treated wastewater quality, records of wastewater treated, disposed or utilised, sludge generated etc. should be maintained. In case of Hospitals not having STPs, the same may be installed in time bound manner.
- Every hospital should ensure better housekeeping and sanitary conditions the premises.

- Temporary storage area for BMW should have proper ventilation and have restricted access. There should be a provision for washing of containers with provision of drainage connected to STP.
- Waste collection area should have proper signage for identification and easy access for collection of waste by CBMWTF operator.
- All the Hospitals should initiate action for implementing bar-coding system.
- Hospitals should ensure that used linen and mattresses are disposed as per BMW Rules,
- Closed trolleys should be used for handling waste within the hospital premises.
- Hospitals should ensure that acidic and alkali discharge from laboratory is segregated, collected separately for neutralisation prior to mixing the same rest of the discharge for treatment in STP.
- DPCC should provide a checklist on implementation of BMW Rues to every hospital, and each hospital should display the same on Notice Board at the entrance.

5.2 Hotels / Banquet Halls

The committee observed that there are some common deficiencies and non-compliances on part Hotels and Banquet halls. This committee therefore recommendations the following to ensure compliance of these bulk waste generators as required under SWM rules, 2016;

- All hotels and Banquet halls should install two bin system to in their guest rooms
- Every hotel and Banquet hall should provide wrapping bags in toilet kits for disposal of sanitary napkins, diapers, etc for disposal of the same along with dry waste s required under SWM rules, 2016
- Every hotel and banquet hall should provide regular training to kitchen and other staff on segregation of solid waste in separate bins at the point of generation.
- Every bulk-waste generator should install compost plant or ensure sending their wet-waste to a common compost facility. However larger hotels should ensure operation of captive compost plant.
- Every hotel and banquet hall should ensure installation of STP
- Proper operation of the same by trained and dedicated staff.
- The treated water should be tested regularly. Records of wastewater consumed, generated, treated, re-used and disposed should be maintained.
- There should be temporary waste storage area where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, Used batteries, used oils, spent solvents from laundry, horticulture waste, C&D waste, and other wastes.
- The committee appreciates the measures taken by some hotels for providing cold storage rooms for putrescible wet-wastes. All hotels may initiate similar provisions to improve sanitary conditions.
- Efforts should be taken for recycling of treated wastewater for horticulture, toilet flushing, cooling tower etc. In case of toilet flushing, the treated wastewater should be disinfected with appropriate methods.
- Hotels and banquet should ensure that the vendors providing waste disposal services are registered with Municipal Corporation. They should also be aware of the methods of waste

disposal being practiced by these vendors. Hotels should take responsibility for proper disposal of their wastes by vendors engaged by them.

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5.3 Colleges

The committee observed that there are some common deficiencies and non-compliances on part Colleges, it recommendations the following to ensure compliance as required under SWM rules, 2016;

- Install two bin systems at all waste collection points i.e. in-front of class rooms, corridors, restaurants etc.
- The restaurants operating in campus should provide regular training to kitchen and other staff on segregation of solid waste in separate bins at the point of generation.
- Wastewater should be discharge into public sewerage network connected to terminal STP.
- There should be temporary waste storage area where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, Used batteries, used laboratory chemicals, horticulture waste, C&D waste, and other wastes.
- It shall be ensure that the vendors providing waste disposal services are registered with Municipal Corporation. They should also be aware of the methods of waste disposal being practiced by these vendors.
- Student awareness campaign should be organised.
- Regular training to the sanitary workers is required to be organised by college

5.4 Malls and Commercial Complexes

The Committee observed that there are some common deficiencies and non-compliances on part Malls / Commercial Complexes. This committee therefore recommendations the following to ensure compliance of these bulk waste generators as required under SWM rules, 2016;

- Install two bin system at all waste collection points and in-front of shops
- The restaurants operating at food courts should provide regular training to kitchen and other staff on segregation of solid waste in separate bins at the point of generation.
- Every Mall should ensure installation of STP and ensure proper operation of the same by trained and dedicated staff.
- The treated water should be tested regularly. Records of wastewater consumed, generated, treated, re-used and disposed should be maintained.
- There should be temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, Used batteries, used oils, horticulture waste, C&D waste, and other wastes.
- Efforts should be taken for recycling of treated wastewater for horticulture, toilet flushing, cooling tower etc. In case of toilet flushing, the treated wastewater should be disinfected with appropriate methods.
- Every Mall should ensure that the vendors providing waste disposal services are registered with Municipal Corporation. They should also be aware of the methods of waste disposal being practiced by these vendors. Hotels should take responsibility for proper disposal of their wastes by vendors engaged by them.

5.5 Railway Stations

The Committee observed that sanitary conditions in railway stations and Bus terminals were are far from satisfactory, however, the conditions were better in case of Anand Vihar railway station. The following are common recommendations to ensure compliance by Railway Stations as required under SWM rules, 2016;

- Install two bin systems for collection of dry and wet waste from railway platforms, in-front of the stalls, restaurants etc. as required under SWM Rules, 2016. The colour of wet waste bin may be green and while blue bin may be kept for recyclable wastes.
- The restaurants operating in station premises should provide regular training to kitchen and other staff on segregation of solid waste in separate bins at the point of generation.
- Large railway stations, and coach cleaning yards should ensure installation of STP and also ensure proper operation of the same by trained and dedicated staff. The treated water should be tested regularly. Records of wastewater consumed, generated, treated, re-used and disposed should be maintained.
- Wastewater should be discharge into public sewerage network connected to terminal STP.
- There should be a temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, plastic waste, Used batteries, C&D waste, and other wastes.
- Efforts should be taken for recycling of treated wastewater for horticulture, toilet flushing, cooling tower etc.
- It should be ensured that the vendors providing waste disposal services are registered with Municipal Corporation. Railways should also be aware of the methods of waste disposal being practiced by these vendors. Railways should take responsibility for proper disposal of their wastes by vendors engaged by them.
- In case of smaller stations, railways should ensure that the wastewater from the premises is disposed through public
- Railways should up-gradation of sanitary conditions.
- All major railway stations should provide washable aprons for railway tracks at station premises.
- Regular training to the sanitary workers is required to be organised by the Indian railways.
- Railways should engage adequate sanitary workers for maintenance of the railway stations.

5.6 Bus Terminals

The Committee observed that conditions in bus terminals were very poor especially due to poor sanitary conditions. The following are common recommendations to ensure compliance by Bus terminals;

- Bus-terminals should up-gradation of sanitary conditions, public utilities such as toilets, urinals should be provided at number of locations. Adequate number of sanitation staff should be engaged to maintain the same.

- Install two bin systems for collection of dry and wet waste the premises of bus-terminals, bus-bays, in-front of the stalls, restaurants etc. as required under SWM Rules, 2016. The colour of wet waste bin may be green and while blue bin may be kept for recyclable wastes.
- The restaurants operating in bus-terminals should provide regular training to kitchen and other staff on segregation of solid waste in separate bins at the point of generation. Further, training to the sanitary workers should also be organised by the Transport Corporation.
- Inter-State Bus terminals should ensure installation of STP and also ensure proper operation of the same by trained and dedicated staff. The treated water should be tested regularly. Records of wastewater consumed, generated, treated, re-used and disposed should be maintained.
- In case of smaller Bus-terminals wastewater should be discharge into public sewerage network connected to terminal STP
- There should be a temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, plastic waste, Used batteries, C&D waste, and other wastes.
- Inter-State Bus-terminals may install captive compost plants within its premises.

5.7 Waste to Energy Plant, EDMC

The committee observed that W to E plant at Ghazipur has been commissioned and operation of the same is being stabilised. The committee recommends the following;

- Enhancement of capacity of Waste to Energy and Waste processing Plants is required to address entire waste generated from EDMC area.
- Verification of emission compliance by DPCC
- The operator of the W t E plant may explore the possibility of utilising bottom ash.

5.8 Apartment Complex

The Committee observed that Residential complexes are not aware of their responsibilities under WM Rules, 2016. They continue to operate the way, they have been practicing in earlier years, with the primary objective is sending the mixed waste to Dhalaos. The committee recommends the following in respect of residential complexes;

- Two Bin system for collection of solid waste need to be followed in each household as required under SWM Rules, 2016.
- Domestic hazardous wastes should be collected separately, and the same should be handed over to authorised waste pickers of Municipal Corporation.
- Door to door collection should be practiced for collection of wet and dry wastes. In complexes where common chute exists, the use of the same should be restricted for only the dry waste.
- Every complex should install captive compost plant for segregated wet wastes.
- There should be a temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, plastic

waste, Used batteries, C&D waste, domestic hazardous waste, horticulture waste, and other wastes. And arrangements with local bodies should be made for collection and disposal of such segregated wastes.

5.9 Mandis / Markets

The Committee observed that Mandis and Markets are not aware of their responsibilities under WM Rules, 2016. No initiatives have been taken by market committees to provide necessary infrastructure for waste management. The committee recommends the following in respect of markets and Mandis;

- All markets and Mandis should ensure segregation of dry and wet waste as required under SWM Rules, 2016
- They shall ensure installation of on-site compost plant or bio-methanation plants (with energy or fuel recovery)
- There should be a temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, packaging waste, C&D waste, and other wastes. And arrangements with local bodies should be made for collection and disposal of such segregated wastes.
- Mandis and markets should ensure disposal of segregated waste on daily basis to minimise odour problems.

5.10 Office Complex

The committee recommends the following in respect of Office Complexes;
Recommended for issuance of letter for improvements of existing practices with respect to;

- Two Bin system for collection of solid waste need to be followed in each household as required under SWM Rules, 2016.
- Large new office complexes should ensure installation of STP and also ensure proper operation of the same by trained and dedicated staff. However, In case of older complexes, sewage may discharge into public sewerage network connected to terminal STP
- Domestic hazardous wastes should be collected separately, and the same should be handed over to authorised waste pickers of Municipal Corporation.
- Door to door collection should be practiced from each office of the complex for collection of wet and dry wastes.
- There should be a temporary waste storage area, where separate collection bins should be provided in separate covered spaces for wet solid waste, dry solid waste, E-Waste, plastic waste, used batteries, C&D waste, domestic hazardous waste, horticulture waste, and other wastes. And arrangements with local bodies should be made for collection and disposal of such segregated wastes.

6 Common Recommendations

Segregation at Source – Every bulk waste generator should ensure segregation of solid waste generated in their premises. Two bin waste collection systems should be implemented for all sources of waste collection i.e. households, guest rooms, hospital wards, banquets, bus-terminals, railways stations etc. If required suitable notices / placards should be placed near bins to educate users.
(ii) Collection areas at Source of Generation– Separate space with covered shed or room should be provided for storing the segregated waste generated from the premises of a bulk-waste generator. There should be arrangement for proper ventilation, provision for container washing, drainage for collection of wash water from storage space, etc. In case of hotels and commercial kitchens, installation of cold storage rooms may be considered as an option to control odour from stored putrescible material prior to collection and also to maintain better sanitary conditions. Further, storage area should have partitioned spaces or separate rakes or suitable bins to keep dry-waste, wet-waste, domestic-hazardous-waste, E-waste and used batteries.

Engaging authorised waste pickers – Bulk-waste generators should ensure that waste pickers or waste collectors, the person or agency (vendors) engaged by them are authorised by local body or entity as defined under Rule 2 of Solid Waste Management Rules, 2016. Rules stipulates that such vendors shall be authorised to facilitate segregation, sorting and recovery of recyclables from various components of waste before the waste is delivered or taken up for its processing or disposal by authorised facilities (authorised by DPCC) or handed over to work force engaged by the local body for the purpose.

Training to ETP/STP operators – Most of the operators of ETPs/STPs are not aware of the science and engineering of wastewater treatment. Bulk-waste generators should ensure that STP operators are given practical training by suitable agency or professional organisation.

On-site vermicomposting / bio-digesting of organic waste – Solid Waste Management Rules, 2016 stipulate that segregated bio-degradable waste shall be processed treated and disposed-off through composting or bio-methanation within the premises as far as possible. Such compost facilities may be commissioned especially in 4 star hotels, 5 star hotels and large commercial kitchens such as banquet halls.

PPEs to the workers handling solid waste: Necessary Personal protection Equipment such as Gloves, face mask, gumboots, should be provided to all the works handling waste including operators of sewage treatment plant and compost plant.

(vii) Utilization of old landfill material for road construction – A portion of solid waste (old digested material) dumped at Ghazipur landfill site can be mined to retrieve sub-grade material for use in road construction.

Collection, Transportation and Disposal of Segregated Waste – The authorised waste pickers engaged by Municipal Corporation should ensure that segregated wastes are collected in separate vehicles and transported to waste processing facilities (Compost or Bio-methanation Plant / C&D Recycling facility / W to E plant / Sanitary Landfill / Treatment Storage and Disposal facility for hazardous wastes / Common Biomedical Waste Treatment Facility / RDF plant / Waste Sorting facility etc.)

7. Recommended action

A summary of observations made, short-comings and recommendations in respect of 48 bulk waste generators inspected by the Sub-Committee –IV is given at Annexure-I. Based on degree of non-compliance observed, this committee recommends **following action against the bulk-waste generators;**

A. Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following bulk-waste generators or hospitals;

1) Ginger Hotels Vivek Vihar, East Delhi
2) Golden Palm, Patparganj
3) Park Inn By Radison, PatparGanj
4) JP Hotel & Resort, PatparGanj, IP Extension, Delhi
5) Fraser Suites, Mayur Vihar Phase-I, Delhi
6) Hall Mark Banquet , KarKar Duma Metro Station, Delhi
7) Orchid Grand (Banquet Hall), KarKar Duma Metro Station, Delhi

B. Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements in respect of following bulk-waste generators or hospitals;

1) Institute of Human Behaviour and Allied Sciences, Dilshad Garden, Delhi- 110 095
2) Rajiv Gandhi Super Speciality Hospital, Dilshad Garden, Delhi- 110 095
3) Park Plaza, Plot No. 32, CBD, Behind KarKar Duma Court, East Delhi.
4) Golden Petal Hotel & Banquet, Shiv Puri, Geeta Colony
5) V3S East Centre Mall, Laxmi Nagar, District Centre, Delhi
6) Cross River Mall (EPMS), Shahdara, Delhi
7) Aggarwal Fun City Mall, Shahdara, Delhi
8) Star City, Mayur Vihar Ph-I Extension, Delhi
9) Parsvnath Commercial Complex, Seelampur, Delhi.
10) Mandawali Railway Station, Delhi
11) Indira Gandhi ESI Hospital, Jhilmil Colony, Delhi
12) Swamy Dayanand Hospital (Re-visit), Dilshad Garden, Delhi
13) LalBahadur Sastry Hospital Khichripur, Delhi
14) Chacha Nehru BalChikistalayaGeetha Colony, Delhi
15) Dharamshila Cancer Hospital and Research Institute, Vasundhara Enclave, Delhi
16) Shahdara Railway Station

17) Vivek Vihar Railway Station
18) Anand Vihar ISBT
19) Shahdara Bus Terminal
20) Flower Mandi, Ghazipur, Delhi.
21) SubjiMandiOf Agricultural Produce Marketing Committee Ghazipur, Delhi.

C. Recommended for issuance of letter for improvements of existing practices in respect of following bulk-waste generators or hospitals;

1) Max Super Speciality Hospital, Patparganj, Delhi
2) Dr.HedgewarArogyaSamsthan. Near KarKar Duma Court,
3) GTB Hospitals, Dilshad Garden, Delhi.
4) Jag Pravesh Chandra Hospital, Shastri Park, Delhi.
5) The Leela Ambience Convention Hotel, Surajmal Vihar, Delhi
6) Holiday Inn, Mayur Vihar, Delhi.
7) Crown Plaza, Mayur Vihar, Delhi.
8) ShaheedSukhdev College of Business Studies, Vivek Vihar
9) VivekanandMahila College, Vivek Vihar, Delhi
10) ShyamLal College, Shahdara, Delhi
11) Dr.Bhim Rao Ambedkar College, University of Delhi
12) DLF Galleria, Mayur Vihar Ph-I Extension, Delhi
13) Anand Vihar Railway Station, Delhi
14) Milan Vihar, Plot No. 72, IP Extension, Delhi-110 092
15) MayurDhwaj, Plo No. 60, IP Extension, PatparGanj, DELHI-110 092
16) Amrapali Apartment, IP Extension, PatparGanj, DELHI-110 092
17) SCOPE District Centre Laxmi Nagar, Delhi

Others

The Waste to Energy Plant, Ghazipur may take appropriate action as per the recommendations of this committee given at Annexure-I;

	Name of Unit	Recommendation
1	Waste to Energy Plant, Ghazipur (12 MW capacity)	- Enhancement of capacity of Waste to Energy and Waste processing Plants is required to address entire waste generated from EDMC area. - Explore the possibility of utilising bottom ash. - Verification of emission compliance by DPCC / CPCB

The following units were not inspected in detail by the committee;

1	Lemon Tree Hotels, East Delhi Mall	Visited the unit as per the list provided by EDMC. However, it was found that this Hotel falls under the purview of the UP State hence, detailed inspection was not made.
2	Hotel De Aqua, Shastri Park, Delhi	Building structure exist but not operational. Hence no specific recommendations were made

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Annexure-I

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
1.1	Max Super Speciality Hospital, Patparganj No. of Beds : 400 BMW Generation : 406 kg/day WW Generation : 180 KLD Untreated WW : nil	(i) Segregation of bio-medical waste (BMW) is practiced as per BMWM Rules, 2016 (ii) Pre-treatment of BMW is practiced (iii) Temporary waste storage is provided. (iv) BMW is disposed through CBWTF located at Nilothi. (v) Installed ETP and operating properly. Dual plumbing system exists.	(i) Bin system for MSW is not followed in accordance with the SWM Rules, 2016.	Recommended for issuance of letter for improvements of existing practices in respect of the following: (i) Bin system to be followed in accordance with the MSWM Rules, 2016. (ii) Regular training to the sanitary workers is organised by the Hospital.
1.2	Dr.Hedgewar Arogya Samsthan. Near KarKar Duma Court, E.Delhi No. of Beds : 200 BMW Generation : 140 kg/day WW Generation : 100 KLD Untreated WW : nil	(i) Segregation of bio-medical waste (BMW) is practised as per BMWM Rules, 2016. (ii) Pre-treatment of waste is done by autoclaving. (iii) BMW is disposed through CBWTF located at Nilothi. (iv) Installed STP	(i) STP needs proper operation and maintenance. (ii) Operator of STP requires training on O & M of STP. (iii) Bin system for MSW is not followed in accordance with the SWM Rules, 2016.	Recommended for issuance of letter for improvements of existing practices; (i) Proper operation and maintenance of STP. (ii) Two bin system to be followed for segregated collection of solid waste as per SWM Rules, 2016.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
				(iii) Disposal of fixer hypo solution only through the registered recyclers. (iv) (iv)Disposal of bio-medical waste through CBWTF in holidays also as per BMWM Rules.
1.3	IG ESI Hospital Jhil Mill Colony, E. Delhi No. of Beds : 300 BMW Generation : 50 Kg/day WW Generation : 60 KLD Untreated WW : 60 KLD	(i) BMW is disposed through CBWTF (ii) No ETP/STP installed (iii) 4 bin system exists	(i) Segregation of bio-medical waste (BMW) is not practised as per BMWM Rules, 2016. (ii) Bins are not labelled with Bio-hazard symbol (iii) No STP installed. (iv) Bins not adequate (v) Temporary waste storage area needs improvement (vi) No washing platform for bins/waste containers (vii) No pre-treatment of BMW is practiced. (viii) Electrical needle cutter is not in working condition (ix) Staff is not aware about BMWM Rules, 2016. (x) Disposal of fixer hypo solution Is not through registered recycler	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements: (i) To comply with the provisions of BMWM Rules, 2016 and SWM Rules, 2016. (ii) Improvement of segregation practices (iii) Pre-treatment of lab waste (iv) Installation of STP in a time bound manner. (v) Training to staff periodically on waste management aspect is essential. (vi) Disposal of fixer hypo solution only through the registered recyclers. (vii) Disposal of bio-medical waste through CBWTF in

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			(xi) Housekeeping is very poor	holidays also as per BMWM Rules. (viii) Housekeeping requires improvement
1.4	GTB Hospitals, Dilshad Garden, Delhi. No. of Beds : 1500 BMW Generation : 1135 kg/day WW Generation : 640 KLD Untreated WW : nil	(i) BMW is disposed through CBWTF (ii) Separate colour coded bins exists (iii) STP installed (iv) Pre-treatment of BMW is practiced (v) Adequate waste storage facility (vi) ETB sludge is used as manure	(i) Segregation is not done as per BMWM Rules, 2016 (ii) Operation of STP requires improvement. (iii) STP is not provided with flow meter (iv) Hypo fixer solution is sold to unauthorised recycler.	Recommended for issuance of letter for improvements of existing practices; (i) Training to STP operator (ii) Training to staff on segregation (iii) Installation of flow meters and maintenance of O&M records of STP. (iv) Hypo solution is required to be sold only to the registered recycler
1.5	Swamy Dayanand Hopsital Dilshad Garden, Delhi No. of Beds : 350 BMW Generation : 370 kg/day WW Generation : 260 KLD Untreated WW : 260 KLD	(i) Member of a CBMWTF (ii) Segregation of bio-medical waste (BMW) is practiced as per BMWM Rules, 2016 and still scope for improvement. (iii) Single bin system for Solid waste (iv) Pre-treatment for lab waste given (v) Solid waste picked by MCD (vi) Trolley used	(i) STP is not installed (ii) There is a scope for improvement of segregation. Bio-hazard symbol to be used on trolleys (iii) Solid waste not segregated (iv) Hypo fixer solution needs to be sold only to the registered recyclers. (v) 1 % Hypo solution is used for pre-treatment of waste	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; (i) Installation of STP (ii) Pre-treatment of BMW (iii) Training to staff (iv) Segregation of solid waste in bins in accordance with the SWM Rules, 2016.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			(vi) Pre-treatment of lab waste to be done as per BMWM Rules, 2016 (vii) Storage requires improvement	
1.6	Jag Pravesh Chandra Hospital Shastri Park, Delhi. No. of Beds : 210 BMW Generation : 80 kg/day WW Generation : 90 KLD Untreated WW : 90 KLD	(iv) Bio-medical Waste is disposed off through CBMWTF located at Nilothi (v) STP Installed (vi) Segregation of bio-medical waste (BMW) is practiced as per BMWM Rules, 2016.	(i) Pre-treatment of lab waste not done (ii) STP not operated properly (iii) Needs improvement in segregation of Bio medical waste by way of training to staff. (iv) waste transfer records not maintained properly (v) Pre-treatment of waste is not practiced. (vi) Sludge generated from STP is not handled properly. (vii) Two bin system for solid waste not provided.	Recommended for issuance of letter for improvements of existing practices; (i) Proper operation and maintenance of STP as well as enhancement of wastewater treatment capacity; (ii) (ii) Training to all the staff to improve segregation of bio medical waste in colour coded bins specified as per BMWM Rules; (iii) Segregation and disposal of solid waste as per SWM Rules, 2016 (iv) Pre-treatment of lab waste as per BMWM Rules, 2016; (v) Chemical disinfection using 10 % Sodium hypochlorite solution as required under the BMWM Rules.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
1.7	Lal Bahadur Sastry Hospital Khichripur, Delhi No. of Beds : 100 BMW Generation : 70 kg/day WW Generation : 80 KLD Untreated WW : nil	(i) Member of CBMWTF (ii) STP installed. (iii) Partial Segregation of bio-medical waste (BMW) is practiced.. (iv) Single bin system for Solid waste (v) Pre-treatment for lab waste given (vi) Solid waste picked by MCD (vii) Trolley used	(i) Segregation of bio-medical waste (BMW) is not practised as per BMWM Rules, 2016. (ii) No record shown for disposal of BMW. (iii) STP not operated properly. (iv) Collection and storage of sludge generative from STP not provided. (v) Shredder not working. (vi) Temporary waste storage area for BMW needs improvement. (vii) Two bin system for solid waste not provided. (viii) Very poor housekeeping.	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; (i) Segregation of bio-medical waste (BMW) needs to be practised as per BMWM Rules, 2016. (ii) Needs proper record for disposal of BMW. (iii) To operate and maintain STP properly. (iv) Proper collection and storage of sludge generative from STP. (v) To put the shredder in operation. (vi) Temporary waste storage area needs improvement. (vii) Two bin system for solid waste needs to be practised. (viii) Requires improvement in housekeeping.
1.8	Chacha Nehru BalChikistalaya	(i) Member of CBMWTF (ii) STP installed.	(i) STP under renovation. (ii) Bin system for solid	Recommended for issuance of directions for ensuring time

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Geeta Colony, Delhi No. of Beds : 220 BMW Generation : 110 kg/day WW Generation : 135 KLD Untreated WW : 135 KLD	(iii) Segregation of bio-medical waste (BMW) is practiced. (iv) Single bin system for Solid waste (v) Pre-treatment for lab waste given (vi) Solid waste picked by MCD (vii) Single bin system for solid waste. (viii) Trolley used	waste is not provided.	bound action plan for installation of adequate facilities and to carry out improvements; (i) To restore STP on priority basis, since untreated effluent being discharged directly into the sewer. (ii) and also for enhancement of existing STP suitably; (iii) Bin system needs to be practised for MSW. (iv) Training to staff for further improvement of disposal of Bio Medical Waste and MSW in accordance with Rules.
1.9	Dharamshila Cancer Hospital and Research Institute, Vasundhara Enclave, Delhi No. of Beds : 200 BMW Generation : 140 kg/day WW Generation : 100 KLD Untreated WW : nil	(i) Member of CBMWTF (ii) STP installed. (iii) Segregation of bio-medical waste (BMW) is practiced. (iv) Single bin system for Solid waste (v) Trolley used	(i) Pre-treatment for lab waste is not given. (ii) Label for cytotoxic waste not provided (iii) STP is not operated properly. (iv) Collection and storage of sludge generated from STP is not provided. (v) Needles not destroyed	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; (i) Pre-treatment for lab chemical waste; (ii) Segregation of sharp waste as per BMWM Rules; (iii) (iii)Storage of BMW requires improvement

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			properly and stored in open container. (vi) Lab chemicals used being discharged directly without any pre-treatment. (vii) Two bin system for solid waste not provided. (viii) Bins washing not proper.	w.r.to wash water collection provision; (iv) Provision of container washing facility; (v) To operate and maintain STP regularly; (vi) Provision of energy meter to the STP (vii) Provision for collection and storage of sludge generated from STP needs to be improved; and (viii) Bin system for solid waste as per SWM Rules needs to be provided.
1.10	Institute of Human Behaviour and Allied Sciences Dilshad Garden, Delhi-110 095 No. of Beds : 365 BMW Generation : 31Kg/day WW Generation : 330 KLD Untreated WW: 330 KLD	(i) Member of CBMWTF (ii) STP installed. (iii) Segregation of bio-medical waste (BMW) is practiced. (iv) Single bin system for Solid waste (v) Closed Trolley used (vi) Housekeeping is good	(i) Pre-treatment for lab waste is practiced but records not maintained. (ii) STP is not operating properly. (iii) Lab chemicals used being discharged directly without any pre-treatment. (iv) Bin system for solid waste is not practiced. (v) Display Board at pre-treatment area not provided	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; (i) Pre-treatment for Chemical lab waste. (ii) To operate and maintain STP regularly. (iii) Bin system for solid waste needs to be provided as per SWM Rules, 2016.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			(vi) Linen and mattresses stored more than 48 hours	(iv) Disposal of linen and mattresses in accordance with BMWM Rules, 2016 (v) Proper record maintenance for pre-treatment of bio-medical waste.
1.11	Rajiv Gandhi Super Speciality Hospital Dilshad Garden, Delhi-110 095 No. of Beds : 650 BMW Generation: 35 Kg/day. WW Generation : 60 KLD	(i) Member of CBMWTF (ii) STP installed. (iii) Single bin system for Solid waste (iv) Closed Trolley used	(i) Segregation of bio-medical waste (BMW) is not practiced properly. (ii) Only yellow colour colour coded bag is used for segregation of all categories of bio-medical waste (iii) Pre-treatment for lab waste is practiced but no records not maintained. (iv) STP is not operating properly and no log book maintained. (v) Lab chemicals used being discharged directly without any pre-treatment. (vi) Bin system for solid waste is not practiced. (vii) Waste in temporary waste storage area is stored haphazardly	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; (i) Segregation of BMW at source as per colour coding stipulated under BMWM Rules, 2016. (ii) Lab. Chemicals needs to be pre-treated as per BMWM Rules, 2016 (iii) To operate and maintain STP regularly and to maintain the records as per BMWM Rules, 2016. (iv) Log book for pre-treatment of waste as per BMWM Rules. (v) Disposal of BMW in accordance with the

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
				BMWM Rules, 2016. (vi) Bin system for solid waste needs to be provided as per SWM Rules, 2016. (vii) Improvement of housekeeping.
	Hotels /Banquet Hall			
2.1	The Leela Ambience Convention Hotel, Surajmal No. of Rooms : 480 MSW Generation : 200 kg/day WW Generation : 460 KLD Untreated WW : nil	(i) Two bins system of segregation of municipal solid waste exists (ii) Segregation practices are satisfactory. (iii) Installed ETP and treated water is re-used for horticulture, cooling tower and toilet flushing. (iv) Dual plumbing system installed for reuse of treated wastewater. (v) Wet waste stored in cold room (vi) Compost plant installed	(i) There is a scope for further improvement in training/practices. (ii) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (iii) Compost plant is not operated properly	Recommended for issuance of letter for improvements of existing practices; - Bin system to be implemented in hotel rooms also - Regular training to kitchen and other staff - Proper operation of compost pant
2.2	Ginger Hotels Vivek Vihar, East Delhi No. of Rooms : 80 WW Generation : 28 KLD Untreated WW : 28 KLD	i. Single bin system for solid waste collection from all over the hotel ii. STP installed	(i) STP found to be defunct during visit. (ii) Segregation of municipal solid waste in accordance with SWM Rules, 2016 is not practiced. (iii) Mixed waste is collected in single bin against the SWM Rules, 2016.	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; - Improvement of waste management practices as per SWM Rules, 2016

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			(iv) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices.	- proper operation and maintenance of STP - Installation of compost plant
2.3	Park Plaza, Plot No. 32, CBD, Behind KarKar Duma Court, East Delhi. No. of Rooms : 90 MSW Generation :Not provided WW Generation : 56 KLD Untreated WW : nil	(i) STP installed and treated water is re-used for horticulture, cooling tower. (ii) Segregated collection of solid waste	(i) STP is not operating properly. (ii) Needs improvement in waste segregation in two bins. (iii) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (iv) No compost plant (v) Waste stored on floor but not in Bins within the temporary waste storage area.	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; i. Improving operation of STP ii. Two bin system to be provided in rooms also iii. Training to staff on segregation iv. To install on-site compost plant
2.4	Golden Palm, Patparganj No. of Rooms : 50 MSW Generation : No records WW Generation : 30 KLD	i. Two bin system for solid waste collection in kitchen and single bin in rooms. ii. STP installed	(i) Waste segregation not satisfactory. Storage bins over-flowing. (ii) Solid waste collected in open without cover/shed (iii) STP installed but was not in operation.	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; - Improvement of waste management practices as per

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Untreated WW : 30 KLD		(iv) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (v) No compost plant	SWM Rules, 2016 - proper operation and maintenance of ETP - To provide waste collection shed - Installation of compost plant
2.5	Lemon Tree Hotels, East Delhi Mall	-	-	Visited the unit as per the list provided by EDMC It was found that this Hotel falls under the purview of the Uttar Pradesh State as per the proof shown by the hotel authorities.
2.6	Park Inn By Radisson, PatparGanj No. of Rooms : 76 MSW Generation : 30 Kg/day WW Generation : 20 KLD Untreated WW : 20 KLD	(i) Two bin system for waste collection in kitchen. (ii) Installed STP (iii) Solid waste is given to vendor (iv) Provided waste collection room (v) E-waste is sold to the e-waste recycler	(i) Segregation of waste not done properly in two bin system. (ii) STP found defunct (iii) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (iv) Compost plant does not exist	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; - Improvement of waste management practices as per SWM Rules, 2016 - proper operation and maintenance of STP - Installation of compost plant
2.7	JP Hotel & Resort PP Ganj, IP Extension,	(i) Single bin system for waste collection.	(i) Segregation of waste not done properly in two bin	Recommended for imposing environmental compensation or

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Delhi No. of Rooms : 50 MSW Generation ; 35 Kg/day WW Generation : 16 KLD Untreated WW : 16 KLD	(ii) Installed STP (iii) Solid waste is given to vendor	system. (ii) STP not operating properly (iii) Solid waste stored in open without cover/ shed (iv) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (v) Compost plant does not exist	fine for grossly non-complying / violations in respect to following action points; - Improvement of waste management practices as per SWM Rules, 2016 - proper operation and maintenance of ETP - Provision of shed for waste collection point - Installation of compost plant
2.8	Holiday Inn, Mayur Vihar, Delhi. No. of Rooms : 190 MSW Generation : 450kg/day WW Generation : 120 KLD Untreated WW : nil	(i) Two bins system of segregation of solid waste exists for all areas except guest rooms. Segregation practices were satisfactory. (ii) Installed STP and operating satisfactorily. Disinfection done by UV lamp system. (iii) Dual plumbing system installed for reuse of treated wastewater for flushing. (iv) Solid waste is given to vendor for final disposal (v) Wet waste is stored in cold room (vi) Vermi-Compost plant installed for converting food & veg. waste into manure and operating	(i) There is a scope for further improvement in training/practices for segregation of solid waste. (ii) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices.	Recommended for issuance of letter for improvements of existing practices; - Bin system to be implemented in hotel rooms also - Regular training to be given to kitchen and other sanitary staff

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
		satisfactorily. Manure is used for gardening (vii) Cold room for wet waste storage		
2.9	Crown Plaza, Mayur Vihar, Delhi. No. of Rooms : 160 MSW Generation ; 400 Kg/day WW Generation : 80 KLD Untreated WW : nil	(i) Two bins system of segregation of solid waste exists for all areas except guest rooms. (ii) Installed ETP (iii) Dual plumbing system installed for reuse of treated wastewater. (iv) Solid waste is given to vendor (v) Wet waste stored in cold room (vi) Vermi-Compost plant installed (vii) Dual plumbing system exists and treated water used in flushing (viii) Cold room for wet waste storage	(i) Segregation of waste is not practiced in rooms. (ii) There is a scope for further improvement in training/practices for segregation of solid waste. (iii) Operation of ETP needs improvement (iv) House-keeping around compost plant needs improvement (v) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices.	Recommended for issuance of letter for improvements of existing practices; - Waste management practices needs improvement in accordance with the SWM Rules, 2016 - Bin system to be implemented in hotel rooms also - Regular training to the kitchen and STP and other staff is required
2.10	Fraser Suites Mayur Vihar Phase-I, Delhi No. of Rooms : 90 MSW Generation : 50 kg/day WW Generation : 40 KLD	(i) Single bin systems in all areas including guest rooms. (ii) Solid waste is given to vendor (iii) Waste storage room provided	(i) Segregation of waste was not practiced as per SWM Rules, 2016. (ii) Wastewater was being by-passed without treatment. (iii) STP was under maintenance (iv) No compost plant	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; - Improvement of waste management practices as per

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Untreated WW : 40 KLD		(v) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices.	SWM Rules, 2016 - STP is required to be restored in a time bound manner. - Proper operation and maintenance of STP is required by giving training to the concerned staff - Installation of compost plant
2.11	Golden Petal Hotel & Banquet Shiv Puri, Geeta Colony No. of Rooms : 15 MSW Generation : 80 kg/day WW Generation : no record Untreated WW : no record	(i) 15 Rooms with Banquet Hall (ii)	(iii) Segregation of waste is not practiced as per SWM Rules, 2016. (iv) No temporary solid waste storage provision made (v) Solid waste is conveyed in trolley and disposed off in nearby Dhalao. (vi) Sewage generated is directly discharged into open drain. (vii) Best waste management practices are not being followed.	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Obtain consent from DPCC - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Install STP - Covered shed for waste collection point - Regular training to the sanitary workers is required to be organised by Hotel Authority.
2.12	**Hotel De Aqua** Shastri Park	i) Building structure exist but not operational	- Building structure exist but not operational	None

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Delhi			
2.13	**Hall Mark Banquet** KarKar Duma Metro Station Delhi	i. Single bins provided ii. ETP installed	i) ETP was not found functioning properly. ii) Bin system not practiced as per SWM Rules. iii) No separate room provided for storage of solid waste. Solid waste stored near the gate in open bins. iv) Foul smell was observed near ETP and solid waste disposal area. v) Housekeeping very poor.	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; i) Bin system needs to be practiced as per SWM Rules. ii) ETP is required to be restored in a time bound manner. iii) Provide separate room for storage of solid waste. iv) Housekeeping need to be improved.
2.14	**Orchid Grand (Banquet Hall)** KarKar Duma Metro Station Delhi	1. ETP installed 2. Few waste bins provided	i) ETP installed but not operational. ETP was in defunct condition. Untreated effluent is by-passed. ii) Bin system not practiced as per SWM Rules. iii) No separate room provided for storage of solid waste. iv) Mixed waste was being segregated by local vendor in the back side(car parking	Recommended for imposing environmental compensation or fine for grossly non-complying / violations in respect to following action points; i) Proper operation of STP ii) Two bin system for collection of segregated waste iii) Provision of separate room for storage of solid waste. iv) On-site segregation v) Control of bad odour.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			area) v) Foul smell was observed. vi) Housekeeping very poor.	ii.) Improvement in House keeping
	Colleges			
3.1	Shaheed Sukhdev College of Business Studies, Vivek Vihar No. of Students: : 1200 MSW Generation : 30 kg/day WW Generation : 100 KLD Untreated WW : 100KLD	i) Hostel is not attached with the College. ii) Bins provided	i) Segregation of waste is not practiced as per SWM Rules, 2016. ii) No temporary waste storage provision. iii) No segregation of waste iv) Solid waste is conveyed in trolley and disposed off in nearby Dhalao. v) Sewage generated is directly discharged into open drain.	Recommended for issuance of letter for improvements of existing practices; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Regular training to the sanitary workers is required to be organised by college.
3.2	VivekanandMahila College Vivek Vihar No. of Students: : 2200 MSW Generation : 100 kg/day WW Generation : 20 KLD Untreated WW : 20 KLD	i) Hostel is not attached with the College ii) Bins installed iii) Compost plant installed iv) Solid waste is conveyed in a trolley and disposed off in nearby Dhalao.	(i) Segregation of waste is not practiced as per SWM Rules, 2016. (ii) Vermi compost requires improvement. (iii) No designated waste storage provision for temporary waste storage. (iv) Sewage generated is directly discharged into drain.	Recommended for issuance of letter for improvements of existing practices; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Regular training to the sanitary workers is required to be organised by college

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
3.3	ShyamLal College, Shahdara No. of Students: : 6000 MSW Generation : 140 kg/day WW Generation : 90 KLD Untreated WW : 90 KLD	i) Hostel is not attached with the College. ii) Paper waste is segregated and fresh paper is obtained from the vendor. iii) Bins provided iv) Solid waste is disposed off in nearby Dhalao.	i) Segregation of waste is not practiced as per MSWM Rules, 2016. ii) No temporary waste storage provision. iii) Sewage generated is collected in a tank and then pumped directly into open drain.	Recommended for issuance of letter for improvements of existing practices; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Regular training to the sanitary workers is required to be organised by college.
3.4	Dr.Bhim Rao Ambedkar College University of Delhi No. of Students: : 2665 MSW Generation : 50 kg/day WW Generation : 20 KLD Untreated WW : 20 KLD	(i) Hostel is not attached with the College. (ii) Septic tank for wastewater treatment then discharge into drain (iii) Bins installed	(i) Segregation of waste is not practiced as per MSWM Rules, 2016. (ii) No designated place for temporary waste storage provision. (iii) Solid waste is disposed off through MCD.	Recommended for issuance of letter for improvements of existing practices; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Regular training to the sanitary workers is required to be organised by college.
	Mall/Commercial complexes			
4.1	V3S East Centre Mall, Laxmi Nagar, District Centre, Delhi No. of Shops : 180 MSW Generation : 120	(i) Single bin system for collection of waste at shops, corridors (ii) Partial segregation practices were satisfactory. (iii) Installed compost plant (iv) Installed STP and treated water is	(i) Installed STP but needs proper maintenance. Operator of STP requires training. (ii) No public litter bins (iii) Storage of Solid waste is not	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points;

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	kg/day WW Generation : 160 KLD Untreated WW : nil	re-used. (v) Solid waste is given to vendor.	proper and causing foul smell. (iv) Compost plant is not working properly. (v) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices.	- Improvement of waste management practices as per SWM Rules, 2016 in corridors and restaurants. - Proper operation of STP - Proper storage of waste with wash water collection provision - Training for proper operation and maintenance of STP - Sludge disposal
4.2	Cross River Mall (EPMS), Shahdara, Delhi No. of Shops : 120 MSW Generation : 950 kg/day WW Generation : 52 KLD Untreated WW : nil	(i) Single bin system for collection of waste at shops, corridors (ii) Partial segregation practices. (iii) Temporary waste storage area. (iv) Installed STP. (v) Solid waste is given to vendor. (vi) Manual waste transfer to temporary collection area.	(i) Installed STP but not operating properly. (ii) Inadequate public litter bins (iii) Solid waste is given to vendor, without knowing their permits/authorisation from EDMC and their final disposal practices. (iv) No trolley for solid waste collection. (v) Sewage is discharged in storm water drain.	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Improvement of waste management practices as per SWM Rules, 2016. - Proper operation and maintenance of STP. - Install compost plant - Needs pull cart / trolley for waste transfer to temporary collection area.

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
4.3	Aggarwal Fun City Mall, Shahdara No. of Shops : 4 shops /2500 visitors MSW Generation : 400 kg/day WW Generation : 32 KLD Untreated WW : nil	i) STP provided and treated water is reused for gardening and cooling. ii) Bins provided by restaurants	i) Segregation of waste is not practiced as per SWM Rules, 2016. ii) MSW is stored in temporary waste storage area not covered and there was no access control. iii) Operation of STP was not satisfactory iv) Solid waste is disposed off nearby Dhalao through vendor.	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Improving operation of STP - Regular training to the sanitary workers and STP operator is required to be organised by Mall authority.
4.4	DLF Galleria, Mayur Vihar Ph-I Extension No. of Shops : 113/ 12,000 visitors MSW Generation : 175 kg/day WW Generation : 40 KLD Untreated WW : nil	i) STP provided and treated water is reused for gardening and cooling. ii) Waste collection bins provided	i) Segregation of waste is not practiced as per SWM Rules, 2016. ii) MSW is stored in temporary restricted waste storage area. iii) Solid waste is disposed off nearby Dhalao through vendor. iv) Sewage generated is treated and then reused for gardening and cooling.	Recommended for issuance of letter for improvements of existing practices; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Regular training to the sanitary workers and STP operator is required to be organised by Mall authority.
4.5	Star City,	i) Waste collection bins provided	i) Segregation of waste is not	Recommended for issuance of

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Mayur Vihar Ph-I Extension No. of Shops : 30 shops MSW Generation : 250 kg/day WW Generation : 25 KLD Untreated WW : 25 KLD	ii) Installed STP, claims that treated water being used for horticulture iii) Solid waste is disposed off nearby Dhalao through vendor.	practiced as per MSWM Rules, 2016. ii) MSW is stored in open waste storage area. No access control. iii) STP was not in operation during the visit. Sewage generated is treated batch-wise.	directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Provision of waste collection point with access control. - Improving operation of STP - Regular training to the sanitary workers and STP operator is required to be organised by Mall authority.
4.6	Parsvnath Commercial Complex Seelampur, Delhi. No. of Shops : 02 Total plot area: 51, 240 Sq.m Built-up area: 96813 Sq.m No.of Visitors: 1000 MSW Generation : 320 Kg/day WW Generation : 60 KLD	i.) Installed STP i.) MSW is stored in designated storage area ii.) Provision made for cleaning of bins iii.) Waste collection bins provided	i.) Segregation of waste is not practiced as per MSWM Rules, 2016. ii.) Solid waste is disposed off through vendor. iii.) STP was not in operation during the visit (under repair). iv.) Un-treated effluent discharge into drain.	Recommended for issuance of directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Augmenting and re-

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Untreated WW : 50 KLD			commissioning the STP - Regular training to the sanitary workers and STP operator is required to be organised by Mall authority.
	Railway Stations			
5.1	**Shahdara Railway Station** No. of trains : 200 No. of Passengers: 25000 MSW Generation : 800 kg/day WW Generation : 200 KLD Untreated WW : 200 KLD	(i.) Platform Sweeping (ii.) Solid waste is conveyed and disposed off in nearby Dhalao of EDMC through vendor.	(i) Segregation of waste is not practiced as per SWM Rules, 2016. (ii) The SW is collected and disposed off in open area (iii) All the rodents and animals are having access to the MSW presently stored improperly under the bridge. iv) Sewage generated is disposed directly into sewer. v) Housekeeping was very poor.	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Up-gradation of sanitary conditions - Installation of STP - Provide washable aprons for railway tracks at station premises. - Regular training to the sanitary workers is required to be organised by the Indian railways.
5.2	**Vivek Vihar Railway Station**	(i.) Sweeping of platform	i) Segregation of waste is not practiced as per SWM Rules, 2016.	Recommended for issuance of directions for ensuring time bound action plan for installation

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	No. of trains : 30 No. of Passengers: 1200 MSW Generation : no record WW Generation : No record (one t/well) Untreated WW : nil		ii) SW is swept and disposed off adjacent to platforms iii) All the rodents and animals are having access to the Solid Waste. iv) Sewage generated is disposed without any treatment. vi) Housekeeping is very poor.	of adequate facilities and to carry out improvements; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Up-gradation of sanitary conditions - Regular training to the sanitary workers is required to be organised by the Indian railways.
5.3	**Anand Vihar Railway Station** No. of trains : 20 No. of Passengers: 600000 MSW Generation : 2 TPD WW Generation : 100 KLD Untreated WW : 100 KLD	i) Housekeeping was satisfactory. ii) Adequate numbers of single bins were provided at all platforms and corridors. iii) On-site segregation at collection point for recovery of Plastics and Glass by an NGO 'Chintan' for recycling. iv) Regular sweeping of platform v) Installed STP for treatment of generated sewage.	(i) Segregation of waste is not practiced as per SWM Rules, 2016. (ii) Open type of temporary waste storage provision was provided. No access control was provided. (iii) Solid waste is conveyed and disposed off in Ghazipur through vendor. (iv) STP is not operated properly and untreated sewage is discharged.	Recommended for issuance of letter for improvements of existing practices; - Up gradation of sanitary conditions - Regular training to the sanitary workers is required to be organised by the Indian railways. - Proper operation of STP - Two Bin system and other necessary provisions to be implemented in accordance with the SWM Rules, 2016.
5.4	**Mandawali Railway**	i.) No effective measures were taken	(i) Segregation of waste is not	Recommended for issuance of

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	Station No. of trains: 22 (stoppage) No. of Passengers: 500 to 600 per day MSW Generation : Not provided WW Generation : Not provided		practiced as per SWM Rules, 2016. (ii) All the collected MSW is disposed off in open area adjacent to the railway platforms within station premises (iii) Sewage generated is disposed directly into the open drain. (iv) Housekeeping is very poor. (v) No sanitation staff were engaged	directions for ensuring proper treatment of wastewater and effective waste management with respect to following action points; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Up gradation of sanitary conditions - For lifting and disposal of MSW thrown in nearby area - To provide adequate sanitary workers for maintenance of the railway station.
	Bus Terminals			
6.1	Anand Vihar ISBT No. of buses : 3000 No. of Passengers: 152000 MSW Generation : 1 TPD WW Generation : 24 KLD Untreated WW : 24 KLD	(i) Waste collection bins in front of shops (ii) Single bins at various points within bus terminal (iii) Floor Sweeping (iv) Toilets (v) Open type waste collection point (vi) Solid waste is conveyed and disposed off in Ghazipur landfill site by vendor.	i) Segregation of waste is not practiced as per SWM Rules, 2016. ii) Temporary waste storage provision was in open with no cover and not having access control to stray animals iii) Adequate number of litter bins iv) No adequate public toilets	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016 for segregated waste collection. - Up gradation of sanitary

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
			v) Housekeeping is very poor vi) Sewage treatment plant was not installed	conditions - Installation of STP - Installation of compost plant - Augmenting waste collection point - Regular training to the sanitary workers is required to be organised by the DTC to improve waste management and housekeeping.
6.2	Shahdara Bus Terminal No. of buses : 200 No. of Passengers: 10000 MSW Generation : WW Generation : nil Untreated WW : nil	(i.) Single bins provided before each shop. (ii.) Sweeping at regular intervals (iii.) Solid waste is conveyed in a trolley and disposed off in nearby Dhalao. (iv.) Sewage generated is collected in a tank and then pumped directly into open drain.	i) Segregation of waste is not practiced as per SWM Rules, 2016. ii) No designated waste storage provision for temporary waste storage. iii) Adequate litter bins not provided	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities and to carry out improvements; - Bin system and other necessary provision to be implemented in accordance with the SWM Rules, 2016. - Up-gradation of sanitary conditions - Wastewater should be discharge into public sewerage network connected to terminal STP - Regular training to the sanitary workers is required to be organised by the DTC to

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
				improve waste management and housekeeping.
	Waste to Energy			
7.1	**Waste to Energy Plant Ghazipur (12 MW capacity) M/s ED** Average – 8 MW generation Date of Inspection : 13.02.2017 Capacity : 12 MW Processing Capacity: 2000 TPD (permitted 1300 TPD) RDF Production: 550 TPD No o Boilers : 01	i) MSW permitted processing capacity: 1300 TPD. ii) Energy production about 8.75 MW from MSW against 12 MW capacity. iii) Mechanical segregation facility is provided iv) Installed ETP for leachate treatment. v) Ash is utilised for brick making, cement kiln. vi) Installed APCD comprising of reactor followed by bag filter to achieve emission standards of DPCC vii) Online emission monitoring system installed.	i) Possibility of utilising bottom ash needs to be explored.	i) Enhancement of capacity of Waste to Energy and Waste processing Plants is required to address entire waste generated from EDMC area. ii) Explore the possibility of utilising bottom ash. iii) Verification of emission compliance by DPCC / CPCB
	Residential Apartments			
8.1	**Milan Vihar,** Plot No. 72, IP Extension, Delhi-110 092 No. of Flats: 370 Plot Area: 6.5 Acres Built up area: 50 -60 % **MSW**: 500 to 600 kg/day **Water consumption:** 240	i) Collection of Municipal solid waste through chute directly into the waste storage area. ii) About 17 sanitary workers engaged for collection and disposal of MSW. iii) Fire fighting provision provided. iv) Common waste chute v) Housekeeping was satisfactory. vi) The rain water harvesting system	i) Mixed waste is collected and no segregation of MSW at source followed. ii) Collected MSW is disposed in nearby MSW Dhalao at Hasanpur Depot. iii) Domestic waste water generated is discharged into the public sewer without any	Recommended for issuance of letter for improvements of existing practices; i. Two Bin system need to be followed as per SWM Rules, 2016 for segregation of waste at source. ii. Restrict use of common

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	KLD **WW Generation**: 190 KLD	was found installed	treatment.	chute for only dry waste. iii. Installation of compost plant iv. Arrangements with local bodies
8.2	**Mayur Dhwaj** Plot No. 60, IP Extension PatparGanj, DELHI-110 092 No. of Flats: 300 Plot Area: 5 Acres Built up area: 40 % MSW: 500 kg/day Water consumption: 190 KLD WW Generation: 150 KLD	i) Collection of Municipal solid waste through common chute directly into the waste storage area. ii) Fire fighting provision provided. iii) Collected MSW is disposed in nearby MSW Dhalao at Hasanpur Depot.	i) Mixed waste is collected and no segregation of MSW at source followed. ii) Foul smell was observed from waste storage area iii) Domestic waste water generated is discharged into the public sewer without treatment.	Recommended for issuance of letter for improvements of existing practices; i. Two Bin system need to be followed as per SWM Rules, 2016 for segregation of waste at source. ii. Restrict use of common chute for only dry waste. iii. Installation of compost pant iv. Arrangements with local bodies
8.3	**Amrapali Apartment** IP Extension PatparGanj, DELHI-110 092 No. of Flats: 302 Plot Area: 5 Acres Built up area: 40 -50 % MSW: 500 kg/day Water consumption: 225 KLD	i) Collection of Municipal solid waste on daily basis from the flats manually. ii) Fire fighting provision provided. iii) Collected MSW is disposed in nearby MSW Dhalao.	i) Mixed waste is collected and no segregation of MSW at source followed. ii) There is no temporary waste storage area. iii) Domestic waste water generated is discharged into the public sewer without imparting treatment.	Recommended for issuance of letter for improvements of existing practices; i. Two Bin system need to be followed as per SWM Rules, 2016 for segregation of waste at source. ii. Installation of compost plant iii. Arrangements with local bodies

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
	WW Generation: 200 KLD			
	Mandis / Markets			
9.1	**Flower Mandi** Ghazipur, Delhi**.** No. of Shops: 411 Plot Area: 9.9 Acres Built up area: 1.5 Acrtes. M**SW**: 3 TPD	(i) MSW is disposed at MCD Landfill site at Ghazipur but not on daily basis (ii) Segregated paper waste is sold to the paper waste recycler directly	(i) MSW Storage area was not properly installed (ii) Bad odour observed. (iii) Compost or bio-methanation plant not installed	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities; - For covered waste storage area - Disposal of segregated waste on daily basis - Segregation of dry and wet waste to be followed by the shops for segregation as per SWM Rules, 2016 - For installation of compost / biomethanation plant.
9.2	**Subji Mandi Of Agricultural Produce Marketing Committee** Ghazipur, Delhi**.** No. of Shops: 468 Plot Area:37 Acres M**SW**: 3 TPD	i. Separate waste storage points ii. MSW is disposed at MCD Landfill site at Ghazipur	(i) There was no propter MSW Storage area. MSW is stored in open areas at three temporary waste storage places. (ii) MSW is disposed at MCD Landfill site at Ghazipur but not on daily basis.	Recommended for issuance of directions for ensuring time bound action plan for installation of adequate facilities; - For covered waste storage area - Ensure daily disposal of segregated dry waste on daily basis - Segregation of waste to be followed by the shops for

S.No	Name of the Bulk Waste Generator/Hospital	Observations		Recommendations
	Hospitals	**Measures Taken**	**Short-comings / Deficiencies**	
				segregation as per SWM Rules, 2016 - For installation of compost / biomethanation plant.
	Office Complex			
10.1	**SCOPE District Centre** Laxmi Nagar Delhi ONGC-10 floors HPCL-03 floors SAIL-05 floors Waste Generation: 1450 Kg/day Water consumption: No data	i) Single bin system practiced ii) Housekeeping was satisfactory iii) Solid waste is given to the vendor	i) Single bin system in all the offices. ii) Solid waste is given to the vendor but disposal at end point is not known to management of offices exist in the scope tower. iii) Every agency has independent kitchen. Waste water is discharge along with the domestic sewage generated from the scope complex.	Recommended for issuance of letter for improvements of existing practices with respect to; i) On-site segregation of waste to be followed as per SWM Rules, 2016 by all offices ii) Disposal of sewage into sewerage network connected to terminal STP.

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