

### MADHYA PRADESH POLLUTION CONTROL BOARD

Paryawaran Parisar, E-5, Arera Colony, Bhopal-462016 Phone (0755)-2466191, 2464428, Fax (0755)-2463742, website-mppcb.nic.in

No.

/HO/MSW/MPPCB/2019

Bhopal, Date:

To,

The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, CBD cum office Complex, East Arjun Nagar Delhi – 110032

Sub:

Annual Report for the year 2018-2019 under Solid Waste Management Rules, 2016.

As per the provision of the Rule – 24 (3) of Solid Waste Management Rules, 2016, Please find enclosed herewith Annual Report for the year 2018-2019 under Solid Waste Management Rules, 2016 in from (V) for your information & necessary action please.

Encl: As above

(R.S.Kori) **Member Secretary** 

Endt.No.:-

No. 664 /HO/MSW/MPPCB/2019

Bhopal, Date: 27/ 7/ 19

Copy to :-

Principal Secretary, Urban Development & Housing Deptt. Govt. 1. of M.P. Mantralaya, Bhopal for information please.

IT M.P. Pollution Control Board Bhopal for upload the same on

Web Site of MPPCB

Encl: As above

(R.S.Kori)

**Member Secretary** 

# Form -V[See rule 24(3)]

Format of Annual Report to be submitted by the State Pollution Control Board to the Central Pollution Control Board Year - 2018-19

# PART A

To,

The Chairman
Central Pollution Control Board
Parivesh Bhawan, East Arjun Nagar
DELHI- 1100032

1.	Name of the State/Union territory	3	Madhya Pradesh
2.	Name & address of the State Pollution Control	*	M.P. Pollution Control Board, Paryawaran Parisar E-5 Arera Colony Bhopal – 462016
3.	Number of local bodies responsible for management of solid waste in the State under these rules	0.00	Urban Local Bodies – 378 Cantonment Board - 5 (List enclosed as Annex-I)
4.	No. of authorization application Received	ŝ	01
5.	A Summary Statement on progress made by local body in respect of solid waste management	**	The Action plan of Madhya Pradesh prepared by Urban Development & Housing Department is enclosed as Annexure-II.
6.	A Summary Statement on progress made by local bodies in respect of waste collection, segregation, transportation and disposal	••	Attached as Annexure-III.
7.	A summary statement on progress made by local bodies in respect of implementation of Schedule II	**	As per Annex-II
	te: 27/07/2019 ce: Bhopal	М	Member Secretary adhya Pradesh Pollution Control Board

## Towns/Cities

Total number of Towns/Cities	383
Total number of ULBs	Urban Local Bodies -378
	Cantonment Board -5
Number of class I & class II	Class I Cities -34
Cities/Towns	Class II Cities – 29
	Towns - 317
	Cantonment Board-05

# Authorization Status (Names/Number)

Number of application received	01[Jabalpur MSW P.ltd,Jabalpur]
Number of authorizations granted	Nil
Authorizations under scrutiny	As above 01

# SOLID WASTE Generation Status

Solid waste generation in the state (TPD)	8000 Approximately
Collected {	7500
Treated	6100
Landfilled	1400

Compliance to Schedule I of SW Rules (Number/Names of Towns/Capacity)

Activities	No of Cities/Towns	Remark
Good practices in cities/towns	194	Indore has been declared the cleanest city of the country for the last 3 years; Bhopal has been
House-to-house collection	364	declared cleanest capital in Swachh Survekshan  2019 and second cleanest city in India in 2017
Segregation	249	and 2018.
Storage	276	Among the Top 100 cleanest cities in India,
Covered transportation	364	Madhya Pradesh has 20 Cities in Swachh Survekshan 2019. Madhya Pradesh is declared as 100% Open Defecation Free (ODF) in urban areas with third party inspection by Quality Council of India. 44 cities of the State have been declared as ODF+ and 14 cities are declared as
		ODF++ by Government of India.



# Processing of SW (Number/names of towns/capacity)

# Solid Waste Processing facilities setup:

SI. No.	(No of Towns)	Vermi-composting (No of Towns)	Biogas (No of Towns)	RDF/Pelletization
	1. Bhopal 2. Ganjbasoda 3. Bairasia (Bhopal) 4. Sehore 5. Obedullaganj 6. Sarani (Betul) 7. Aathner (Betul) 8. Gairatganj (Raisen) 9. Kothari (Sehore) 10. Multai (Betul) 11. Udaypura (Raisen) 12. Shahganj (Sehore) 13. Rehati (Sehore) 14. Timarani (Harda) 15. Budhni (Sehore) 14. Timarani (Harda) 15. Budhni (Sehore) 16. Begamganj 17. Lateri (Vidisha) 18. Seoni-Malwa 19. Babai (Hoshngabad) 20. Jawar (Sihor) 21. Dewas 22. Rajgarh 23. Badnawar 24. Sardarpur 25. Manwar 26. Jhabua 27. Dhar	1. Bairasia (Bhopal) 2. Obedullaganj 3. Sarani (Betul) 4. Itarsi 5. Begamganj 6. Budhni (Sehore) 7. Timarani (Harda) 8. Rehati (Sehore) 9. Udaypura (Raisen) 10. Kothari (Sehore) 11. Shahganj (Sehore) 12. Seoni-Malwa 13. Jawar 14. Chhatarpur 15. Satna 16. Sailana	01 (Bhopal	[RDF-01 (Ujjain), MRF-17  1 Singrauli 2 Satna 3 Katni 4 Badwani 5 Khargone 6 Indore 7 Goutampura 8 Omkareshwar 9 Burhanpur 10 Ujjain 11 Dewas 12 Nagda 13 Gwalior 14 Bhopal 15 Betul 16 Betul Bazar 17 Multai  (List enclosed as Annex-IV)
	28. Indore 29. Maheshwar 30. Khargone 31. Pithampur 32. Rewa 33. Sagar CB 34. Singrauli 35. Ujjain 36. Gwalior	×		



# Processing facility Operational:

Sl. No.	Composting (No of Towns)	Vermi-composting (No of Towns)	Biogas (No of Towns)	RDF/Pelletization
1	36	16	01-[under trial]	RDF-01 ,MRF-17

# Processing facility under Installation/Planned:

Sl. No.	Composting	Vermi-composting	Biogas	RDF/Pelletisation
1	19	3 - 3	2 -	Gwalior RDF - 01
	1. Katni			
	2. Sagar		1. [7]	
	3. Dewas			
	4. Hoshangabad			
	5. Balaghat			
	6. Badwani		-	
	7. Betul			
	8. Bhind			
	9. Khandwa	4 1		
	10. Chhatarpur			
-	11. Chhindwara		22	
- 1	12. Damoh	2	1	
	13. Guna			
	14. Shahdol	- 1		
	15. Shajapur			
	16. Shivpuri			
	17. Singrouli			
	18. Vidhisa			
	19. Jabalpur Cluster			

# Waste-to-Energy Plants: (Number/Names of Towns/Capacity)

Sl. No.	Plant Location	Status of operation	Power generation (MW)	Remarks
1	Jabalpur	Operational	11.5 MW	400 TPD



# Disposal of solid waste (Number/Names of Towns/Capacity):

Activities	No of Cities/Towns	Names of ULBs
Landfill sites identified	378	E
Landfill constructed	04	1. Gwalior
		2. Indore
		3. Jabalpur
		4. Katni
Landfill under	14	1. Bhopal,
construction		2. Itrasi,
H .	-	3. Biaora,
		4. Shivpuri,
		5. Narshinggarh
		6. Ashoknagar,
		7. Mungaoli,
		8. Pachor,
		9. Sagar,
	0	10. Katni,
		11. Dabra,
*	×	12. Lahar,
	5	13. Gwalior,
		14. Joura
Landfill in operation	04	1. Jabalpur
		2. Indore
	140	3. Bhopal
	140	4. Katni
Landfill exhausted	0	
Land filled capped	0	-

# Solid Waste Dumpsites (Number/Names of Towns/Capacity):

Activities	No.of Towns	Remark
Total number of existing dumpsites	378	Reclaimed – 10
Dump sites reclaimed/capped	Reclaimed – 10	(Sailana, Nagada, Rampur
		Naikin, Indore, Panna,
Dumpsites converted to sanitary landfill	01 (Ujjain)	Hatod, Rau, Khand,
		Umariya Gautampura)

# Monitoring at Waste processing/Landfills sites:

Sl. No.	Name of facilities	Ambient air	Groundwater	Leachate quality	Compost quality	VOCs
1.	List Enclosed at Annexure -V	315	369	-	(A)	-

Status of Action Plan prepared by Municipalities:

Total number of municipalities: 378+05(CB)

Number of Action Plan submitted: Please refer Annex-II



# Annexure - 1

# List of ULBs of Madhya Pradesh

S.No	Name of ULBs
1	Bhopal
2	Gwalior
3	Indore
4	Jabalpur
5	Ujjain
6	Sehore
7	Hoshangabad
8	Itarsi
9	Vidisha
10	Betul
11	Dhar
12	Chhindwara
13	Dewas
14	Shivpuri
15	Guna
16	Datia
17	Morena
18	Bhind
19	Burhanpur
20	Khandwa
21	Khargone
22	Seoni
23	Katni(Murwara)
24	Pithampur
25	Rewa
26	Sagar
27	Damoh
28	Panna
29	Chhatarpur
30	Satna
31	Singrauli
32	Nagda
33	Neemuch
34	Ratlam
35	Mandsaur



37	Mandideep
38	Harda
<b>3</b> 9	Pipariya
40	Ganj Basoda
41	Sironj
42	Sarni
43	Shajapur
44	Shujalpur
45	Biaora
46	Ashoknagar
47	Raghogarh-Vijaypur
48	Dabra
49	Ambah
50	Gohad
51	Sheopur kalan
52	Barwani
53	Sendhwa
54	Gadarwara
55	Narsinghpur
56	Balaghat
57	1 Mandla
58	Sidhi
59	Khurai
60	Bina-Etawa
61	Tikamgarh
62	Shadol
63	Javra
64	Berasia
65	Nasrullaganj
66	Seoni-Malwa
67	Sohagpur
68	Baraily
69	Begamganj
70	Raisen
71	Amla
72	Multai
73	Damua
74	Donger Parasia
75	Pandhurna
76	Sausar
77	Khategaon
78	Alirajpur
79	Dhamnod (Dhar)



80	Kukshi
81	Manawar
82	Jhabua
83	Rajgarh
84	Narsinghgarh Narsinghgarh
85	Pachore
86	Rajgarh
87	Sarangpur
88	Karera
89	Aron
90	Chanderi
91	Mungaoli
92	Bhander
93	Bamor
94	Joura
95	Kailras
96	Sabalgarh
97	Lahar
98	Porsa
99	Mhowgaon
100	{ Rau
101	Nepanagar
102	Sanawad
103	Anjad
104	Badwaha
105	Maheshwar
106	Sihora
107	Gotegaon
108	<u> </u>
109	Panagar
110	Malajkhand
111	Nainpur
112	Waraseoni
113	Mauganj
114	Banda
115	Deori
116	Garhakota
117	Rahatgarh
118	Rehil
119	Chitrakoot
120	Hatta
121	Khajuraho
122	Maharajpur



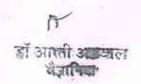
123	Niwari
124	Nowgong
125	Prithvipur
126	Maihar
127	Bijuri
128	Beohari
129	Dhanpuri
130	Kotma
131	Pasan
132	Umaria <u> </u>
133	Khachrodpop
134	Mahidpur
135	Badnagar
136	Agar
137	Manasa
138	A lot
139	Ichhawar
140	Kothri
141	Timarni
142	Obedullaganj
143	g Babai
144	Budni
145	Khirkiya
146	Rehti
147	Bankhedi
148	Badi
149	Gairatganj
150	Kurwai
151	Lateri
152	Shamshabad
153	Silwani
154	Sultanpur
155	Udaipura
156	Athner
157	Betul-Bazar
158	Bhainsdehi
159	Chicholi
160	Amarwara
161	Badkuhi
162	Chand
163	Chandameta-Butaria
164	Chaurai Khas
165	Harrai

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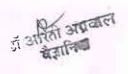


166	Junnardev Jamai	
167	Lodhikheda	
168	Mohgaon	
169	Neuton Chikhli Kalan	
170	Bagli	
171	Bhaurasa	
172	Hatpiplya	
173	Kannod	
174	Kantaphod	
175	Karnawad	
176	Maksi .	
177	Pipalrawan	
178	Satwas	
179	Sonkatch .	
180	Akodia	
181	Polaykalan	
182	Bhawra	
183	Dharampuri	
184	Jobat	
185	Mandav	
186	Meghnagar	
187	Petlawad	
188	Ranapur	
189	Thandla	
190	Badnawar	
191	Boda	
192	Jirapur	
193	Khilchipur	
194	Khujner	
195.	Kurawar	
196	Machalpur	
197	Suthaliya	
198	Talen	
199	Badarwas	
200	Kolaras	
201	Narwar	
202	Pichhore	
203	Chachaura-Binaganj	
204	Isagarh	
205 .	Kumbhraj	
206	Shadora	
207	Antari	
208	Badoni	

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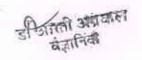


209	Bhitarwar
210	Bilaua
211	Indergarh
212	Pichhore
213	Jhundpura
214	Akoda
215	Alampur
216	Daboh
217	Gormi
218	Mau
219	Mehgaon
220	Mihona
221	Phuphkalan
222	Sewda
223	Badoda
224	Vijaypur
225	Betma
226	Depalpur
227	Hatod
228	Runji-Gautampura
229	Sawer
230	Bhikangaon
231	Chhanera
232	Mundi
233	Omkareshwar
234	Pandhana Pan
235	Shahpur
236	Kasrawad
237	Khetia
238	Mandleshwar
239	Palsud
240	Pansemal
241	Rajpur
242	Barela
243	Chichali
244	Katangi
245	Majholi
246	Patan
247	Saikheda
248	Salichauka
249	Shahpura
250	Tendukheda
251	Baihar



252	Bamhani
253	Bichhiya
254	Katangi
255	Lanji
256	Barghat
257	Lakhnadon
258	Barhi
259	Kymore
260	Chakghat
261	Baikunthpur
262	Churhat
263	Govindgarh
264	Gurh
265	Hanumana
266	. Majhauli
267	Mangawan
268	Naigarhi
269	Rampur Naikin
270	Semaria
271	Sirmour
272	Teonthar
273	Shahgarh
274	Shahpur
275	Mackronia
276	Hindoria
277	Patera
278	Patharia Patharia
279	Buxwaha
280	Tendukheda
281	Bada Malhera
282	Badagaon
283	Bijawar
284	AjayGarh
285	Amaganj
286	Devendra nagar
287	Pawai
288	Chandla
289	Garhi-Malhera
290	Dhuwara
291	Harpalpur
292	Jatara
293	Jeron Khalsa
294	Kari

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295	Khargapur
296	Laundi(Lavlkush Nagar)
297	Lidhora Khas
298	Orchha
299	Palera
300	Rajnagar
301	Satai
302	Amarpatan
303	Birshinghpur
304	Jaitwara
305	Nagod
306	New Ramnagar
307	Rampur Baghelan
308	Unchahara
309	Dindori
310	Shahpura
311	Anuppur
312	Burhar
313	Chandia
314	Khand
315	Nowrozabad
316	Pali
317	Unhel
318	Makdon
319	Tarana
320	Badod
321	Kanad
322	Nalkheda
323	Soyatkalan
324	Susner
325	Bhanpura
326	Garoth
327	Shamgarh
328	Suwasara
329	Narayangarh
330	Piplya Mandi
331	Jawad
332	Jiran
333	Kukdeshwar
334	Rampura
335	Namli
336	Sailana
337	Tal

1.

1



338	Sitamau
339	Jawar
340	Shahganj
341	Sanchi
342	Bichua
343	Piplanarayannwar
344	Loharda
345	Nemawar
346	Tonk Khurd
347	Pankhedi(Kalapipal)
348	Dahi
349	Sadarpur
350	Chhapiheda
351	Khaniyadhana
352	Bairad
353	Manpur
354	Karahi Padlya Khurd
355	Bhedaghat
356	Niwas
357	Vijayraghavgarh
358	Baldeogarh
359	Barigarh
360	Kakarhati
361	Tarichar Kalan
362	Kotar
363	Kothi
364	Amarkantak
365	Jaisinghnagar
366	Jaithari
367	Badagaon
368	Malhargarh
369	Singoli
370	Ratangarh
371	Diken
372	Athana
373	Nayagaon
374	Sarwania Maharaj
375	Badawada
376	Dhamnod (Ratlam)
377	Piploda
378	Nagri





# **ACTION PLAN**

&

**Present status** 

Of

# MUNICIPAL SOLID WASTE MANAGEMENT IN MADHYA PRADESH

(Revised October 2018)

URBAN DEVELOPMENT & HOUSING DEPARTMENT (UD&HD)

GOVERNMENT OF MADHYA PRADESH

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	16 Chhindwara Cluster	48
	17 Jabalpur Cluster	49
	18 Neemuch Cluster	50
	19 Ratlam Cluster	51
	20 Rewa Cluster	52
	21 Shahdol Cluster	53
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	24 Damoh Cluster	55
	25 Chhatarpur Cluster	55
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## 1. NEED FOR MUNICIPAL SOLID WASTE MANAGEMENT

#### 1.1 OVERVIEW

**Solid Waste Management (SWM)** is a part of public health and sanitation, and according to the Indian Constitution, falls within the purview of the State list. Since this activity is non-exclusive, non-rivalled and essential, the responsibility for providing the service lies within the public domain. The activity being of a local nature is entrusted to the Urban Local Bodies (ULBs) by 12<sup>th</sup> Schedule of 74<sup>th</sup> Amendment of the Constitution.

Supreme Court directed all the Urban Local Bodies (ULBs) to manage Municipal Solid Waste (MSW) in accordance with "MSW Management and Handling Rules 2000", hence all ULBs are obliged to carry out collection, transportation, segregation, processing and scientific disposal of MSW as per the mandated rules.

**Government of India (GoI)** has also framed **eight parameters asService Level Benchmarks(SLBs)** for MSW in 2009 and 13<sup>th</sup> Finance Commission links the disbursement of Performance Grant to ULBs with the level of achievement of SLBs, as specified in Chapter 10 of its report.

Importantly, **National Green Tribunal (NGT)** has stipulated ULBs to follow all environmental rules and norms in order to avoid adverse environmental effects of MSW activities.

#### SCIENTIFIC MANAGEMENT OF SMWM

The scientific management of Municipal Solid Waste Management includes:

- Waste minimization and reduction at source
- **Door to door collection** of waste from all residential, commercial, institutional establishments in covered vehicles in compliance with SWM Rules 2016 and in accordance with SLBs for MSW.

- 100% Segregation of waste at source in accordance with SWM rules 2016.
- Covered Bins for secondary collection in compliance with SWM Rules 2016.
- **Secondary collection and transportation** in covered vehicles in compliance with SWM Rules 2016.
- Covered waste transfer/storage stations in compliance with CPCB/SPCB norms, if required.
- Material recovery /recycling in accordance with SLBs for MSW.
- Scientific processing in compliance with SWM Rules 2016 and CPCB/SPCB norms.
- **Scientific disposal** of inert in compliance with SWM Rules 2016 and CPCB/SPCB norms.
- 100% cost recovery of Operation & Maintenance (O&M) expenses from user charges as mandatory urban reform stipulates and 90% collection efficiency of user charges in accordance with SLB for MSW.

#### 1.2 DIRECTIONS FROM HON'BLE NGT

**Hon'ble National Green Tribunal (NGT)** in OA No 199 of 2014 (Almitra H. Patel Vs Union of India) on 12<sup>th</sup> January, 2017 directed State Government to "file complete and detailed Action Plan and affidavits to show how the municipal solid waste in the State would be processed and degradation of environment and public health resulting here from would be prevented. As part of this Action Plan they would also be required to submit total solid waste generated and how that solid waste was required to be treated in a time bound manner in regard to these directions".

Madhya Pradesh Government had prepared an action plan in 2015 itself and had submitted it to Hon'ble Supreme Court. It was further updated and submitted to Hon'ble Tribunal.

#### 1.3 MADHYA PRADESH STORY

Madhya Pradesh is a state with a population of 73 million covering 9.5% of the total area of the country (308,000 Sq. Km.). The urban population of the state is across 378 ULBs which has increased to 21 million in 2011 from 16 million in 2001, growing at a CAGR of ~2.2%.

The high rate of urbanization has led to increased focus on urban infrastructure and municipal service delivery which has further led to increased investment requirement in the urban development. However, this rate of urbanization has resulted in generation of large quantities of Municipal Solid Waste in big cities as well as small towns also.

Thus, preparation of a time-targeted action plan, for management of Municipal Solid Waste (MSW), for each city and town in the state is essential in accordance with the population and developmental growth, so that environmental conditions improve and makes city liveable for every citizen.

# 2. PAST PREVAILING SITUATION OF MSWM & PRACTICE

The Solid Waste Management in all ULBs should have started as directed by the Hon'ble Supreme Court of India by 2005. But due to non-availability of trained and knowledgeable manpower, lack of financial resources, operational non viability because of inadequate quantity of waste generated in maximum number of ULBs, the complete management of MSW as per rules could not be implemented in any of ULBs.

However some of the bigger ULBs had started implementing it on a piece meal basis. Some examples are as follows:

1. Indore	Outsourced secondary collection and waste processing of 500 TPD to a private operator. But the result was not satisfactory because of many reasons.
2. Gwalior	It was the first town in Madhya Pradesh which got Sanitary Landfill constructed and started managing it. It also outsourced door to door collection (DTDC) to a private operator. All the operations stopped later on.
3. Ujjain	Have recently outsourced waste processing to private operator.  The complete results are yet to be assessed.
4. Rewa	It also outsourced secondary transportation of waste. But the results have not been satisfactory.

## 3. INITIATIVES OF STATE GOVERNMENT FOR ISWM

#### 3.1 ACTION PLAN FOR WASTE MANAGEMENT IN THE STATE

To comply with SWM 2016 rules, the State studied the urbanization pattern in MP and found it to be skewed, as shown in table below.

Table: Population range by ULBs

Population Range	Number of ULBs
<20,000	210
20,000 - 50,000	107
50,000 – 1,00,000	28
1,00,000 - 2,00,000	18
>2,00,000	15
Total	378

More than 90% ULBs with population of less than 1 lakh could not implement all its components because of reasons mentioned below:

- Not operationally viable for smaller ULBs because of very less quantity of waste being generated.
- Huge financial burden in setting up large facilities for treating waste.
- Most of the ULBs lack technical know-how and manpower.

Therefore, the state decided to form 'clusters' of ULBs for effective Integrated Solid Waste Management on Regional Landfill concept and implement the projects through Public Private Partnership (PPP) mode.

As a result, the state formed  $^{\sim}26$  clusters covering all the 378 ULBs of the state with total waste of around 150 TPD.

The cluster-based approach has been designed considering two factors:

- (1) For optimizing the waste
- (2) Logistics

#### INTEGRATED SOLID WASTE MANAGEMENT PROJECTS

The whole state has been divided into ~26 clusters for MSW management (details list towns in cluster is attached in Annexure A).

Table: Regional Integrated MSW facilities

1	Sagar Cluster (11 ULBs)	11	Chhatarpur Cluster (33 ULBs)	21	Vidisha Cluster (15 ULBs)
2	Katni Cluster (05 ULBs)	12	Damoh Cluster (07 ULBs)	22	Shajapur Cluster (26 ULBs)
3	Jabalpur City (01 ULBs) Jabalpur Cluster (15 ULBs)	13	Bhind Cluster (14 ULBs)	23	Ratlam Cluster (22 ULBs)
4	Bhopal Cluster (08 ULBs)	14	Singrauli Cluster (01 ULBs)	24	Chhindwara Cluster (20 ULBs)
5	Rewa Cluster (28 ULBs)	15	Betul Cluster (08 ULBs)	25	Barwani Cluster <sup>#</sup> (22 ULBs)
6	Indore Cluster (08 ULBs)	16	Balaghat Cluster (13 ULBs)	26	Ujjain Town* (01 ULBs)
7	Gwalior Cluster (16 ULBs)	17	Shahdol Cluster (16 ULBs)		
8	Khandwa Cluster (10 ULBs)	18	Shivpuri Cluster (11 ULBs)		
9	Dewas Cluster (24 ULBs)	19	Guna Cluster (10 ULBs)		
10	Hoshangabad Cluster (14 ULBs)	20	Neemuch Cluster (19 ULBs)		

Name of Clusters for Integrated Solid Waste Management on Regional Landfill approach

<sup>\*</sup>For Ujjain City – Solid Waste Management Project has been executed in 2016 by NN-Ujjain because of Simhasth Mela.

<sup>#</sup> As per the Feasibility Study Reports recommendations, some of the ULBs are re-clustered considering improved logistics of waste transfer. Also the earlier Mandsaur, Pithampur and Ratlam Clusters are rearranged to form Neemuch, Barwani and Ratlam Clusters. On rearrangement, Ratlam, at present, is Waste to Energy (WTE) or Waste to Fuel Cluster.

#### INVESTMENT REQUIREMENT AND PHASING

The total capital investment required for implementing Integrated Solid Waste Management in all 378 ULBs shall be around Rs. 2,950 crores.

Further, the investment required will be covered by a mix of Central Government grant, State Government grant and share of private operator.

The grant is being provided for reducing the concessionaire's investment so that tipping fee is reasonable. This will help in imposing affordable user charges on citizens.

The State Government intends to select the concessionaire for all projects by 31<sup>st</sup> August 2018. The target is to start all Waste to Compost (WTC) projects by October 2019 and all Waste to Energy (WTE) projects by March 2020.

#### KEY HIGHLIGHTS OF THE FINANCIAL MODEL



<sup>\*</sup> Assured payment of tipping fee with provision of annual revision. In case of default of Tipping fees, the GoMP shall deposit the tipping fees in Escrow account of the Project

<sup>\*\*</sup> PPA is to be executed between concessionaire and. Madhya Pradesh Power Management Com. Ltd. As levelized Power Tariff rate shall be INR 6.39 / Unit. for the concession period.

#### KEY FEATURES OF CLUSTER-BASED ISWM

- Larger ULB chosen as a lead member and smaller ULBs within a distance of 50-80 kms as cluster members.
- The Regional Landfill site to be situated in the lead member town.
- MSW to be transported from other ULBs for processing and disposal at the Regional Landfill site.
- Satellite waste storage and satellite processing facilities to be developed in each of the clusters if required. Waste to be brought from smaller ULBs to satellite stations in order to keep the transportation cost minimal.
- Each cluster will have a combination of ISWM Facility, satellite segregation-cumprocessing units (if required) and waste storage units.
- Private sector to carry out various activities of MSW management door to door collection, transportation, segregation, processing and disposal, in accordance with MSW Rules and relevant statutory requirements.
- Leverage the Technical as well as Operations & Maintenance (O&M) expertise of the Private Sector (PPP player).

In addition to the above, the following additional points have been considered while designing the projects.

- Clear work definition with existing workers: Existing sweepers will be used for sweeping, drain cleaning and specific area cleaning activities. Given the limited manpower available with ULBs, focussed street cleaning as well as drain cleaning will result in quality job.
- Bidding Parameter: SWM being a service delivery project the tipping fees was kept as a
  bidding parameter. This compels private operator to collect all waste generated in the
  project area as his returns are dependent on the quantity of waste collected and treated
  and disposed by him.
- Tipping Fee model allows the private operator to leverage on the O&M strength as well as bring in sustainable technological solutions.
- Affordable user charges: It is suggested to impose the user charges as mentioned below
  - Bigger Towns (Nagar Nigam and Nagar Palika):

- Above Poverty Line Households: Rs 60-80 / month / household
- Below Poverty Line Households: Rs 30-40 / month / household

#### Nagar Parishad

- Above Poverty Line Households: Rs 40 / month / household
- Below Poverty Line Households: Rs 20 / month / household
- Implementation Modality: The projects have been framed on Design, Build, Finance, Operate and Transfer (DBFOT) basis with a performance based O&M for 21 year concession period. Further the private operator is given the freedom to use appropriate technology for MSW processing, making the bids technology neutral.
- Payment Guarantee Mechanisms by GoMP: Full guarantee by GoMP will be provided
  for 'tipping fee' payment to Private Operator in case ULBs delay the payment of 'tipping
  fee' to the concessionaire, with a State intercept, wherein GoMP deducts the portion of
  payment from various devolutions already being done to ULBs and pay the
  concessionaire directly.
- Information, Education and Communication (IEC) activities and Environment Health and Social (EHS) Campaigns: The private operator will carry out IEC and EHS activities to educate citizens and ULB employees for their role in making the cities clean.
- Robust monitoring framework: A Monitoring Committee, comprising of Commissioners/CMOs of all participating ULBs, will be constituted to monitor the day to day activities, with the help of an agency (IE) selected through transparent bidding process.

Image: Images portray the system under proposed ISWM Projects













#### IMPACT OF SWM PROJECTS ON SERVICE LEVEL BENCHMARKS

The table below shows the impact that the proposed projects will bring after implementation in comparison to the Service Level Benchmarks laid down by Govt. of India.

Table: Impact of SWM Projects on Service Level Benchmarks

Parameters	SLBs	Effect on Project Scope
Household level coverage of solid waste management services	100%	100% Coverage of the project area in all ULBs.
Efficiency of collection of Municipal solid waste	100%	<ul> <li>100% Door to door collection and transportation in covered vehicles, preventing</li> <li>Spillage and consumption by stray animals</li> <li>Any MSW spillage/loss while transportation</li> </ul>
Extent of segregation of Municipal solid waste	100%	100% segregation of waste collected from all the ULBs through automatic segregators, along with deodorizing and waste spillage control mechanisms.
Extent of Municipal solid waste recovered	80%	Recyclable components will be reused, biodegradable will be scientifically processed and recovered as either manure, RDF etc., and the inert will be disposed in landfill site, hence encouraging more than 80% recovery and reuse of waste. In bigger clusters were waste quantity is large energy shall be produce.
Extent of scientific disposal of Municipal solid waste	100%	100% scientific disposal of the inert waste in the allocated landfill site, with proper leachate collection & drainage system.  Efficient gas collection system, odour control mechanism and proper green cover giving it an aesthetic look.
Efficiency in redressal of customer complaints	80%	A centrally located GPS tracker and customer care centre for quickly identifying the problematic area and service needs by directing the nearest vehicle/resource to the location, resulting in efficient and timely resolution of complaints.
Extent of cost recovery	100%	The cost recovery will be addressed through levying

in SWM services		of affordable user charges on citizens. (Rs 60-80 for APL & Rs 30-40 for BPL in Municipal Corporations and Municipal Councils and Rs 40 for APL and Rs 20 for BPL in Nagar Parishads)	
Efficiency in collection of SWM charges	90%	This will be achieved by rendering high quality service for initial years and once this is institutionalized, it is expected that user charges recovery will not be an issue.	

#### **IMPACT ON SLBS**

**Hazardous & e-waste disposal facilities:** Four hazardous and e-waste waste facilities are planned at zone level i.e. in Bhopal, Indore, Jabalpur, and Gwalior. The residential/industrial hazardous waste and e-waste will be transported to these facilities and will be processed and disposed by relevant technologies. These four projects will be planned as PPP projects with private operator responsible for collection, transportation, processing and disposal of waste.

#### 3.2 SHORT TERM PLAN

Selecting concessionaire, implementing the project and making it completely operational was time consuming and required at least 2-3 years.

Therefore, the State Government decided to give grant to ULBs so that vehicles for door-to-door collection can be purchased and deployed for achieving 100% door-to-door collection in all the 378 ULBs.

For bigger ULBs, grant for procuring Refuse Compactors and other required equipment were also sanctioned. Bigger corporations were asked to implement 100% door-to-door collection by supporting from their own resources.

1,782 Rickshaws, 2,296 Auto Tippers, 63 Backhoe Loaders and 17 Refuse Compactors were deployed for carrying out primary and secondary collection thus achieving 100% collection efficiently. All the ULBs are conducting IEC activities for the citizens, explaining importance of source segregation and not littering of waste on streets and public places.

As far as waste treatment and disposal is concerned, a big gap still persisted. However few smaller ULBs took the initiative and started producing the compost. Larger ULBs started planning for the treatment. As far as landfill operations are concerned it is still at a preliminary stage.

Because of these initiatives by ULBs under the guidance of State's Urban Development Department, Indore and Bhopal stood first and second respectively in the last year's 'Swachh Survekshan' conducted by the Central Government. In addition to Indore and Bhopal, 22 more ULBs of Madhya Pradesh were ranked among the top 100 cleanest towns of India.

In this year's Swachh Survekshan once again Indore and Bhopal have stood First and Second in national rankings. 19 more ULBs are in top 100. All other ULBs of the State have performed creditably in the zonal rankings. Madhya Pradesh as a whole has stood 4<sup>th</sup> amongst all States of India.

Another important achievement has been the increase in awareness among citizens about the importance of sanitation and waste management.

Image: Photographs represent present status of waste management in ULBs (2017-18)

#### A. Door to Door Collection



# B. <u>Processing:</u>



# C. Awareness Campaigns:



# 4. IMPLEMENTATION OF CLUSTER BASED ISWM PROJECTS

#### INITIALLY IMPLEMENTED PROJECTS

The Feasibility Study Report (FSR) for the first two projects namely Katni and Sagar was prepared by ICF-GHK, the consulting agency for DFID aided MP Urban Infrastructure Investment Programme (MPUIIP) of Urban Administration and Development Directorate, after collection of data and field visits.

The concept of the project along with the Feasibility Study Report (FSR) was explained to the citizens in open workshops conducted at all ULBs by UADD officials and consultants. After getting approval of ULBs through a resolution, the RFP documents for both the projects were prepared by the consulting teams and the approval of these documents was done by State Level Empowered Committee (SLEC for PPP Projects) headed by Chief Secretary, GoMP.

Transparent bidding process was conducted for both the projects. UADD provided support to ULBs in bidding and an expert team consisting of consultants, UADD officials, experts and ULB officials did the evaluation of bids.

The **Katni** project has become fully operational. In **Sagar**, the primary and secondary collection has been in operation since one and half years; however delay in environmental clearance (EC) has resulted in waste processing being delayed. Now EC has been obtained and the project is expected to be fully operational by December 2018.

Due to high efficiency of waste collection, transportation from all the towns of both the project area, all the cities are clean, littering of waste is minimal and there has been considerable improvement in environmental conditions, which is also shown in the charts for Jabalpur and Sagar (in subsequent sections). The citizens of these cities are not only satisfied with the projects but also cooperating and putting efforts towards success of the project.

An agency, InfraEn, Bangalore has been appointed as the Independent Engineer for monitoring of implementation and Operation & Maintenance (O&M) activities of both the projects.

#### BENEFITS FROM THE INITIATIVE

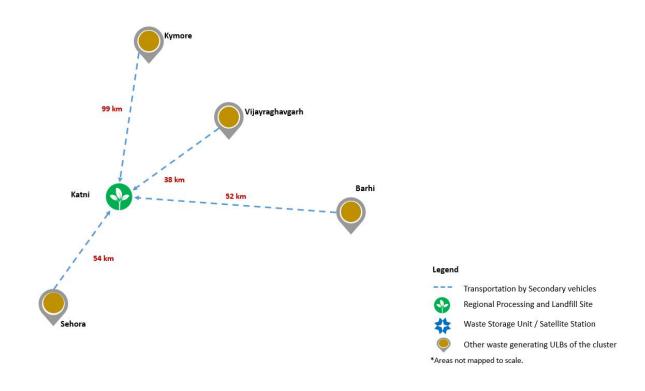
- Private investment shall increase employment opportunities.
- The drains are not choked thus reducing the generation of mosquitoes.
- Due to cleanliness, environmental conditions have improved and towns have become cleaner.

A brief descriptions of the projects which are operational and were implementation is underway, is being given in the following pages -

# CLUSTER: KATNI (WTC)

The image below shows the operational plan for Katni cluster. The proposed project caters to ~95 MT waste/day, collectively from Katni, Sihora, Kymore, Vijayraghavgarh and Barhi. The ISWM Facility is at Katni while the waste storage units are in Sihora, Kymore, Vijaygarhgarh and Barhi for temporary storage of waste (2-3 days) before transporting to ISWM Facility in Katni to minimize the transportation expenses.

#### KATNI



#### **CURRENT SCENARIO: KATNI - IN IMAGES**



# KEY FEATURES: KATNI

Coverage

State	Madhya Pradesh, India	District	Katni and Jabalpur		
Towns:	Katni, Sihora, Kymore, Sihora and Vijayraghavgarh	Population	320,000 (2014)		
Total MSW Generated (per day) ~ 95 MT					
	Salient Project Fe	atures			
Project Components	Door to Door Collection, Transportation, Segregation, Scientific treatment and safe disposal as per MSW Rules 2000 / SWM 2016; User Charge Billing and conducting IEC activities.	Project Cost (Approx.)	INR 35.39 Crores		
Implementation Modality	Public Private Partnership – Design, part-Finance, Build, Operate & Transfer	Concession Period	21 years including implementation		
Institutional Arrangement	All five ULBs entered into an inter ULB agreement authorizing the bigger ULB to act as lead member of the cluster.	Operational modality	A. A monitoring committee comprising of all Chief Executive Officers of ULBs was authorized through a resolution by ULBs to take all decisions which shall be implemented by the CEO of lead member i.e. Katni.		

B. To help and

activities of

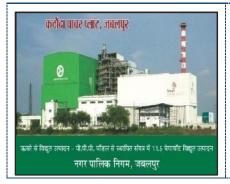
monitor day to day

			concessionaire, an agency to be appointed to act as Independent Engineer for the full Concession period.
Project OPEX	Private Operator	Payment Guarantee on Behalf of ULBs	Payment Guarantee from GoMP for payment of tipping fee to Concessionaire.
Waste Processing location	Katni	Land Fill Site (free of all encumbrances)	6.3 Hectare land in Katni
Potential Revenue Streams for Private Operator	Tipping Fee from implementing agency, Sale of products / by-products		

Project has become fully operational since December 2017 and people of towns are benefitted because of cleanliness of the town.

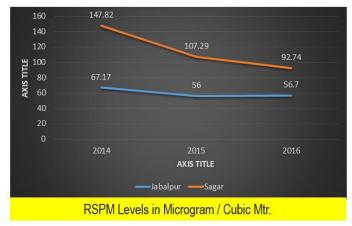
# CLUSTER: JABALPUR (WTE)

Collection, transportation, treatment and disposal of waste from the city have begun, and energy is being produced from the waste. The project is fully operational since December 2016 and around 7-8 MW of power is being generated daily.









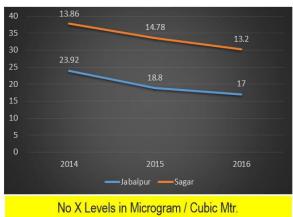
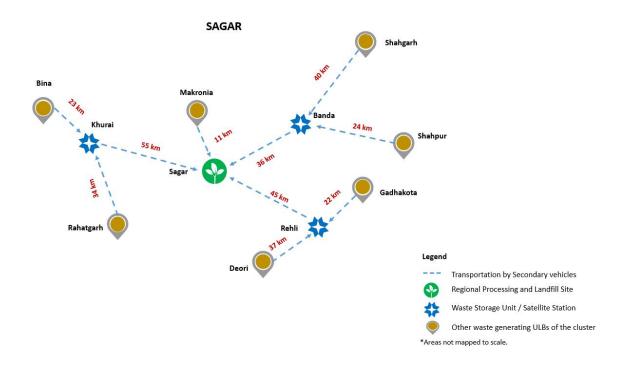


Image: RSPM and NOx Levels in Jabalpur and Sagar

# CLUSTER: SAGAR (WTC)

Further, for a cluster with ISWM Facility and Satellite Segregation-cum-Processing units, the image below shows the operational plan for Sagar cluster. The Sagar cluster covers the MSW management in 11 ULBs. In this cluster, an Integrated Solid Waste Management Facility has been planned in Sagar. This ISWM Facility will cater to the waste from Sagar. Further, satellite stations / waste storage facilities have been proposed at Khurai, Rehli and Banda where waste from the neighbouring ULBs will be collected and will be transported to Sagar for processing and scientific disposal. Waste storage units may be planned at each ULBs for temporary storage of waste before transporting it to ISWM facility/ Satellite unit. The estimated cost of the project is 70.54 crore.



C&T is operational in the project area and other components are in advance stages of implementation. The project may become fully operational by December 2018.

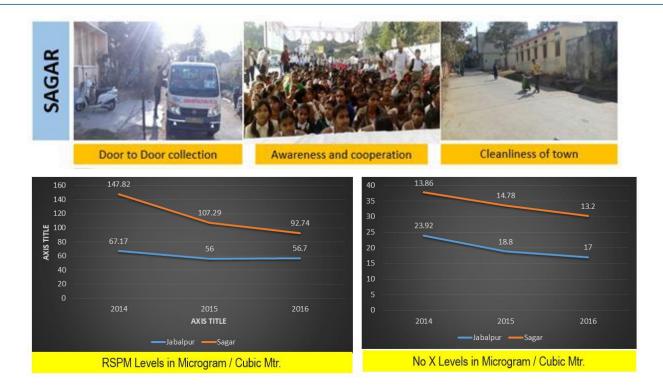
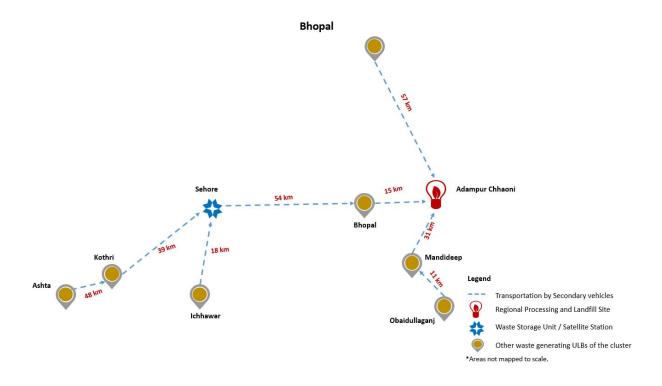


Image: RSPM and NOx Levels in Jabalpur and Sagar

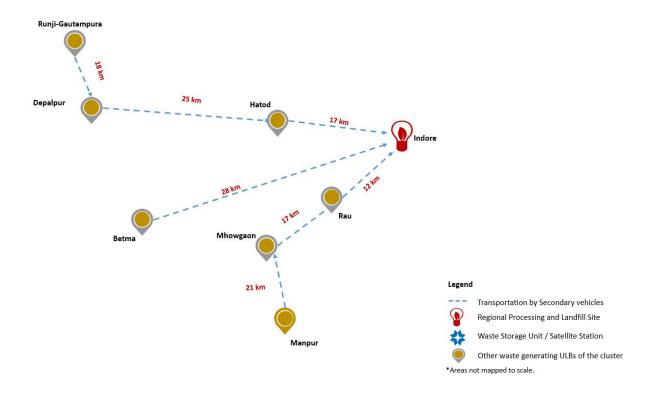
# CLUSTER: BHOPAL (WTE)

- Towns: Ashta, Berasia, Bhopal, Ichhawar, Kothri, Mandideep, Obedullaganj, Sehore
- Est. Project Cost. (Rs. Cr): 465.76
- Total MSW Generated (TPD): 1,060
- Concession Period: 21 years including implementation
- Implementation Modality: Public Private Partnership
- Institutional arrangement: An inter ULB agreement authorizing the biggest ULB to act as lead member of the cluster.
- Technology for Waste Treatment: Waste to Energy
- Location of ISWM Facility including Landfill site: Adampur Chawni



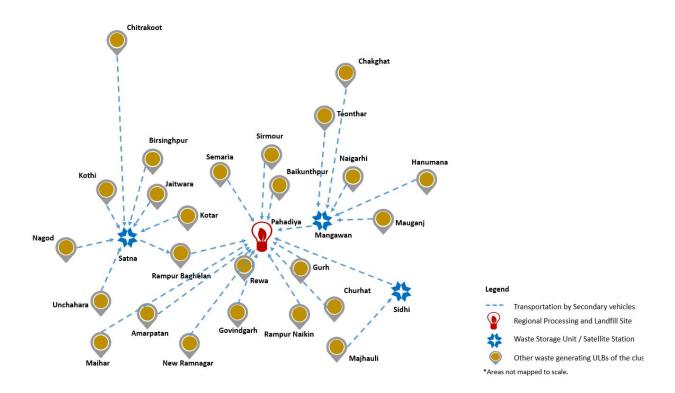
# CLUSTER: INDORE (WTE)

- Towns: Betma, Depalpur, Hatod, Indore, Manpur, Mhowgaon, Rau, Runji-Gautampura
- Est. Project Cost. (Rs. Cr): 470.0
- Total MSW Generated (TPD): 1,010
- Concession Period: 21 years including implementation
- Implementation Modality: Public Private Partnership
- Institutional arrangement: An inter ULB agreement authorizing the biggest ULB to act as lead member of the cluster.
- Technology for Waste Treatment: Waste to Energy
- Location of ISWM Facility including Landfill site: Vil. Devguradiya



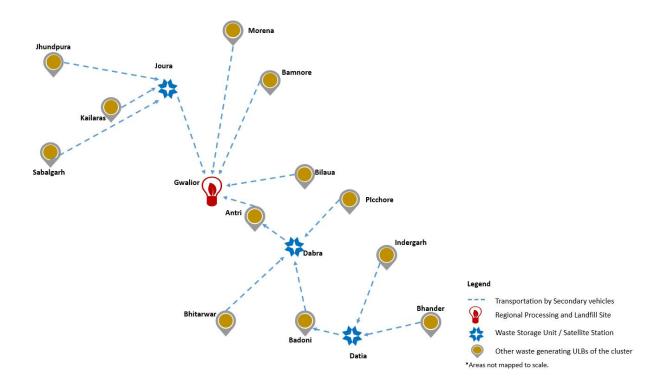
# **CLUSTER: REWA (WTE)**

- Towns: Amarpatan, Baikunthpur, Birsinghpur, Chakghat, Chitrakoot, Churhat, Govindgarh, Gurh, Hanumana, Jaitwara, Kotar, Kothi, Maihar, Majhauli, Mangawan, Mauganj, Nagod, Naigarhi, New Ramnagar, Rampur Baghelan, Rampur Naikin, Rewa, Satna, Semaria, Sidhi, Sirmour, Teonthar, Unchahara
- Est. Project Cost. (Rs. Cr): 158.0
- Total MSW Generated (TPD): 340
- Concession Period: 21 years including implementation
- Implementation Modality: Public Private Partnership
- Institutional arrangement: An inter ULB agreement authorizing the biggest ULB to act as lead member of the cluster.
- Technology for Waste Treatment: Waste to Energy
- Location of ISWM Facility including Landfill site: Vil. Padhadiya



# CLUSTER: GWALIOR (WTE)

- Towns: Antari, Badoni, Bhander, Bhitarwar, Bilaua, Dabra, Datia, Gwalior, Indergarh, Pichhore, Morena, Jhundpura, Sabalgarh, Bamor, Joura, Kailaras
- Est. Project Cost. (Rs. Cr): 254.0 Cr
- Total MSW Generated (TPD): 606
- Concession Period: 21 years including implementation
- Implementation Modality: Public Private Partnership
- Institutional arrangement: An inter ULB agreement authorizing the biggest ULB to act as lead member of the cluster.
- Technology for Waste Treatment: Waste to Energy
- Location of ISWM Facility including Landfill site: Vil. Kedarpur



#### OTHER ISWM PROJECTS

The feasibility study reports for Katni, Sagar, Bhopal and Rewa were prepared by the department with the support of DFID funded consulting teams. Later on, for remaining clusters, FSRs were prepared by various consulting agencies deployed by the State Mission Directorate - UADD for SBM.

Out of these 26 projects, energy may be generated in five projects (67-73 MW) and compost and other products may be produced in the remaining 21 projects. The estimated cost of the projects is 2,950.00 crore (approx.). Out of the total costs, more than 1,300 crore of private investments shall be done.

This innovative approach of the State Government was appreciated by the Central government by selecting it among the top 12 innovative projects (out of 830 entries across all sectors in a competition conducted by Prime Minister Office).

The State Government intends to operationalize the Integrated Solid Waste Management Projects in all ULBs by the end of December 2019. This will enable Integrated Solid Waste Management to be implemented in Urban Madhya Pradesh in an effective manner encompassing all components of Solid Waste Management as per SWM rules 2016.

This will result in enhancing cleanliness in the towns thus reducing the number of cases of vector-borne diseases which will eventually improve the quality of life.

Madhya Pradesh may become one of the cleanest States in India after all the cluster-based ISWM projects become operational by the end of December 2019, thus achieving a major objective of Swachh Bharat Mission launched in October 2014.

# 5. INSTITUTIONAL MECHANISM FOR IMPLEMENTATION OF PROPOSED ISWM PROJECTS

For each of the proposed cluster, an inter-ULB agreement is being signed among the participating ULBs, wherein the ULB contributing the maximum amount of waste and having the sanitary landfill site shall act as the lead ULB and take all steps for implementation of integrated solid waste management projects. The Lead ULB shall perform the following roles and responsibilities for successful execution of the project.

- Providing unencumbered land for landfill site.
- Facilitating the concessionaire with all the necessary clearances and approvals required for the implementation of the project.
- **AppointIndependent Engineer Unit** and arrange for payment of professional fee as per the monthly invoices.
- Interfacing between GoMP and participating ULBs.
- Managing special account created for SWM for all project related transactions with GoMP and participating ULBs.
- Managing escrow account with the concessionaire.
- Performance monitoring of concessionaire and the Management Unit.
- Convening regular meetings of **Monitoring Committee**.

#### PROJECT MANAGEMENT STRUCTURE

The Management structure comprises the following:

- 1) Monitoring Committee (MC) comprising the Chief Executive Officers of Parties to supervise contract management and monitor the performance of Concessionaire and Independent Engineer.
- 2) Independent Engineer (IE) a private consultancy organization identified through transparent competitive bidding process by Lead ULBs, for supervision of implementation, operation and maintenance of the Project on a daily basis.

# RESPONSIBILITY OF MC

#### 1) During Project Preparation Phase

- a) To ensure that lead ULBs share the signed Concession Agreement with the Parties.
- b) To ensure that Lead ULB shares the signed Contract Documents of IE and IE procured through transparent process.

#### 2) Project Implementation Phase

During the project implementation phase, MC shall do the following:

- a) Meet at least once in a month or more to review the project implementation process.
- b) Issue necessary instruction to Parties to this Agreement for compliance with the provision of Concession agreement from time to time.
- c) Issue necessary instructions/notices to Concessionaire in consultation with IE to ensure compliance with the provisions of this Agreement and Concession Agreement.
- d) Review the appraisal report prepared by IE of the Project Implementation and Operation Plan (PIOP) prepared by the Concessionaire and decide the actions to be initiated based on the recommendations of IE in line with the provision of Concession Agreement for its acceptability and financial implications.
- e) To approve all the payments to be made to concessionaire after IE's recommendations.

#### 3) Project Operation & Maintenance (O&M) Phase

- a) During project operation & maintenance Phase, MC shall meet once in a month and shall decide on following matters:
  - Providing concurrence on actual MSW transported by Concessionaire from the various ULBs Governed by Parties and deviation thereon.
  - Final Payment to be made by Parties and to be deposited in Escrow Account for onward payment to Concessionaire.
  - Taking appropriate action in case of default by either of Party.
  - Penalty or Incentive to be provided to Concessionaire as the case may be

b) MC can revise the Service Delivery Target provided, if it has been requested by the Party, however those Service Delivery Target cannot be changed if MC opines that those suggested changes will affect the Project performance; and to ascertain the acceptability of suggested changes IE may hire Expert services at its own cost;

# RESPONSIBILITY OF INDEPENDENT ENGINEER (IE) AGENCY

IE responsibility shall be the following:

#### 1) DURING PROJECT IMPLEMENTATION PHASE

IE shall undertake detailed appraisal of DPR submitted by Concessionaire and as the case may be, shall advice MC to issue instruction for corrective action to be taken by Concessionaire. IE may follow up for compliance of such instruction and action taken by Concessionaire. IE shall also monitor the implementation of the project as per approved DPR throughout the implementation period.

#### 2) PROJECT OPERATION & MAINTENANCE (O&M) PHASE

- a) IE will undertake routine monitoring of project performance against the Service Level Benchmark (SLB) set in Concession Agreement and achievement or non-achievement of those SLB shall be reported to MC; thus in turn penalty/incentive shall be imposed by MC in consultation with IE as per the Penalty or Incentive Structure set out in Concession Agreement.
- b) IE will review the financial plan, which would include capital investment required for improvement in service delivery, sources of proposed investments funding, estimates of revenue and expenditure for the O&M activities including the options for revenue improvement and expenditure minimization;
- c) IE shall advice MC to set out the payment mechanism thereon to Concessionaire for capital investments, O&M expanses and Tipping Fee payable;

# 6. PRESENT STATUS OF PROJECTS -

The following table provides status as well as timelines for each of the clusters.

Sr.No	Name of Cluster	No. of ULBs	Est. Waste Generation (TPD)	Type of Processing	Status	Timeline
1	Katni	5	95	Compost	Fully Operational	Since December 2017
2	Sagar	11	185	Compost	Under Implementation	Environmental Clearance received. To be fully operational by December 2018
3	Jabalpur (City)	1	400	Energy	Commissioned	Since December 2016
4	Ujjain (Town)	1	160	Compost	Fully Operational	Since 2016
5	Bhopal	8	1,060	Energy	Under Implementation	To be operational by December 2019
6	Rewa	28	340	Energy	Under Implementation	To be operational by October 2019
7	Indore	8	1,010	Energy	Under Implementation	To be operational by April 2020
8	Gwalior	16	606	Energy	Under Implementation	To be operational by October 2019
9	Khandwa	10	175	Compost	LOI Issued	To be operational by December 2019
10	Jabalpur Cluster	15	108	Compost	LOI Issued	To be operational by October 2019
11	Neemuch	19	103	Compost	LOI Issued	To be operational by December 2019
12	Singrauli	1	91	Compost	LOI Issued	To be operational by December 2019
13	Dewas	24	245	Compost	Retendered Live Tender	To be operational by December 2019
14	Hoshangabad	14	165	Compost	Retendered Live Tender	To be operational by December 2019
15	Balaghat	13	110	Compost	Live Tender	To be operational by December 2019
16	Barwani	22	189	Compost	Live Tender	To be operational by December 2019

17	Betul	8	83	Compost	Live Tender	To be operational by December 2019
18	Bhind	14	156	Compost	Live Tender	To be operational by December 2019
19	Chhatarpur	33	212	Compost	Live Tender	To be operational by December 2019
20	Chhindwara	20	167	Compost	Live Tender	To be operational by December 2019
21	Damoh	7	75	Compost	Live Tender	To be operational by December 2019
22	Guna	10	151	Compost	Live Tender	To be operational by December 2019
23	Ratlam	22	308	Energy / Fuel	Live Tender	To be operational by June 2020
24	Shahdol	16	120	Compost	Live Tender	To be operational by December 2019
25	Shajapur	26	165	Compost	Live Tender	To be operational by December 2019
26	Shivpuri	11	124	Compost	Live Tender	To be operational by December 2019
27	Vidisha	15	167	Compost	Live Tender	To be operational by December 2019
Total	378	6,770				

# 7. ANNEXURE A – CLUSTER LEVEL DETAILS

The compositions of Clusters, Population (Projected from Census 2011 data) and MSW generation is given herewith.

#### 1 HOSHANGABAD CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
1 Hoshangabad Cluster	Babai	18,078	5
	Budni	18,151	5
	Harda	80,201	23
	Hoshangabad	127,414	37
	Itarsi	107,265	31
	Khirkiya	24,553	7
	Nasrullaganj	25,688	7
	Pipariya	52,727	15
	Rehti	12,539	4
	Seoni-Malwa	32,505	9
	Shahganj	9,190	3
	Sohagpur	27,040	8
	Timarni	24,145	7
	Bankhedi	13,677	4
	Total	573,173	165

# 2 VIDISHA CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
2 Vidisha Cluster	Badi	21,169	6
	Baraily	37,432	11
	Basoda	84,543	24
	Begamganj	36,750	10
	Gairatganj	19,637	6
	Kurwai	16,724	5
	Lateri	20,349	6
	Raisen	47,690	14
	Sanchi	9,072	3
	Shamshabad	12,234	3
	Silwani	20,111	6
	Sironj	56,651	16
	Sultanpur	11,088	3
	Udaipura	19,693	6
	Vidisha	168,410	48
	Total	581,553	167

# 3 BHOPAL CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
3 Bhopal Cluster	Ashta	57,433	27
	Berasia	33,424	16
	Bhopal	1,941,873	907
	Ichhawar	16,437	8
	Kothri	11,367	5
	Mandideep	64,420	30
	Obedullaganj	24,670	12
	Sehore	117,835	55
	Total	2,267,459	1,060

# 4 SHAJAPUR CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
4 Shajapur Cluster	Agar	40,946	11
	Akodia	12,583	3
	Badagaon (465445)*	7,794	2
	Badod	14,939	4
	Biaora	53,015	14
	Boda	10,676	3
	Chhapiheda	9,180	3
	Jirapur	23,459	6
	Kanad	11,293	3
	Khilchipur		

	20,440	6
Khujner	11,647	3
Kurawar	24,215	7
Machalpur	10,233	3
Nalkheda	18,023	5
Narsinghgarh	34,912	10
Pachore	29,585	8
Pankhedi (Kalapipal)	3,876	1
Polaykalan	13,248	4
Rajgarh (465661)*	32,101	9
Sarangpur	40,426	11
Shajapur	74,796	20
Shujalpur	55,317	15
Soyatkalan	15,962	4
Susner	17,745	5
Suthaliya	11,442	3
Talen	11,427	3
Total	609,280	166

 $<sup>^{*}</sup>$  ULBs with similar names are now differentiated through PIN Codes in round brackets.

# 5 BETUL CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
5 Betul Cluster	Amla	32,629	9
	Athner	12,867	3
	Betul	111,585	29
	Betul-Bazar	11,479	3
	Bhainsdehi	12,917	3
	Chicholi	10,024	3
	Multai	32,371	9
	Sarni	93,023	24
	Total	316,895	83

# 6 GWALIOR CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
6 Gwalior Cluster	Antari	10,744	4
	Badoni	11,133	4
	Bhander	27,217	9
	Bhitarwar	20,622	7
	Bilaua	13,923	5
	Dabra	66,172	22
	Datia	108,295	36
	Gwalior	1,138,655	380
	Indergarh	24,886	8
	Pichhore (475115)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

	13,418	4
Bamor	35,461	12
Jhundpura	10,586	4
Joura	45,520	15
Kailaras	27,991	9
Sabalgarh	43,555	15
Morena	216,498	72
Total	1,814,676	606

# 7 BHIND CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
7 Bhind Cluster	Akoda	13,535	4
	Alampur	11,540	3
	Ambah	50,946	14
	Bhind	213,370	58
	Daboh	19,543	5
	Gohad	63,647	17
	Gormi	22,506	6
	Lahar	38,524	10
	Mau	21,756	6
	Mehgaon	23,039	6
	Mihona	18,288	5
	Phuphkalan	13,668	4
	Sewda	23,140	6
	Porsa	42,838	12
	Total	576,340	156

# 8 SHIVPURI CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
8 Shivpuri Cluster	Badarwas	14,655	4
	Badoda	19,910	6
	Karera	30,998	9
	Khaniyadhana	17,145	5
	Kolaras	21,361	6
	Narwar	20,934	6
	Pichhore (473995)	19,575	5
	Sheopur	77,699	22
	Shivpuri	194,355	55
	Vijaypur	18,319	5
	Bairad	4,098	1
	Total	439,049	124

# 9 GUNA CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
9 Guna Cluster	Aron	30,248	9
	Ashoknagar	88,365	26
	Chachaura-Binaganj	23,606	7
	Chanderi	35,724	11
	Guna	195,389	57
	Isagarh	13,588	4
	Kumbhraj	21,281	6

Mungaoli	28,284	8
Raghogarh -Vijaypur	67,129	20
Shadora	11,469	3
Total	515,083	151

# 10 INDORE CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
10 Indore Cluster	Betma	17,277	8
	Depalpur	18,870	8
	Hatod	11,258	5
	Indore	2,151,592	947
	Manpur	8,230	4
	Mhowgaon	32,410	14
	Rau	38,935	17
	Runji-Gautampura	15,749	7
	Total	2,294,321	1,010

# 11 KHANDWA CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
11 Khandwa Cluster	Bhikangaon	17,513	5
	Burhanpur	227,733	64
	Chhanera	23,814	7
	Khandwa	216,774	61

Mu	ındi	13,919	4
Nep	panagar	32,053	9
Om	ıkareshwar	10,867	3
Pan	ndhana	14,788	4
San	nawad	41,835	12
Sha	hpur (450445)	21,294	6
Tot	tal	620,590	175

# 12 BARWANI CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
12 Barwani Cluster	Anjad	28,389	9
	Alirajpur	30,775	9
	Barwaha	28,573	9
	Barwani	59,938	18
	Bhabra	11,844	4
	Dahi	9,189	3
	Dhamnod (454552)	34,657	10
	Dharampuri	17,670	5
	Jobat	12,933	4
	Karahi & Padlya Khurd	8,315	2
	Kasrawad	24,567	7
	Khargone	125,429	38
	Khetia	17,002	5
	Kukshi	30,594	9
	Maheshwar	26,361	8
	Manawar	32,821	10

Mandav	11,508	3
Mandleshwar	13,329	4
Palsud	10,921	3
Pansemal	13,138	4
Rajpur	22,620	7
Sendhwa	60,997	18
Total	631,570	189

# 13 DEWAS CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
13 Dewas Cluster	Bagli	11,134	3
	Bhaurasa	13,138	4
	Dewas	312,681	96
	Hatpiplya	18,811	6
	Jawar	8,862	3
	Kannod	19,162	6
	Kantaphod	11,236	3
	Karnawad	12,166	4
	Khategaon	27,443	8
	Loharda	9,937	3
	Maksi	21,693	7
	Nemawar	6,456	2
	Pipalrawan	10,423	3
	Satwas	15,235	5
	Sawer	17,440	5
	Sonkatch	17,867	5

Khachrodpop	34,191	10
Nagda	100,039	31
Unhel	14,744	5
Mahidpur	31,650	10
Makdon	11,658	4
Tarana	24,908	8
Badnagar	36,438	11
Tonk Khurd	8,616	3
Total	795,928	245

# 14 KATNI CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
14 Katni Cluster	Barhi	15,060	4
	Katni (MUrwara)	239,609	68
	Kymore	20,888	6
	Sihora	47,567	14
	Vijayraghavgarh	9,040	3
	Total	332,164	95

# 15 BALAGHAT CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
15 Balaghat Cluster	Baihar	17,980	6
	Balaghat	90,992	28
	Bamhani	11,086	3
	Bichhiya	11,260	3
	Dindori	23,026	7
	Katangi (481445)	17,436	5
	Lanji	14,641	5
	Malajkhand	36,906	11
	Mandla	59,537	18
	Nainpur	26,904	8
	Niwas	8,907	3
	Shahpura (481990)	11,873	4
	Waraseoni	29,690	9
	Total	360,238	110

# 16 CHHINDWARA CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
16 Chhindwara Cluster	Amarwara	15,271	4
	Badkuhi	10,685	3
	Barghat	13,067	3
	Bichua	1,445	-
	Chand	13,296	4
	Chandameta- Butaria	17,815	5
	Chaurai Khas	13,991	4
	Chhindwara	189,036	50
	DaMUa	26,633	7
	Dongar Parasia	46,204	12
	Harrai	11,879	3
	Jamai	24,387	6
	Lakhnadon	18,684	5
	Lodhikheda	10,745	3
	Mohgaon	10,701	3
	Neuton Chikhli Kalan	10,626	3
	Pandhurna	49,112	13
	Piplanarayanwar	9,282	2
	Sausar	29,653	8
	Seoni	110,519	29
	Total	633,031	167

# 17 JABALPUR CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
17 Jabalpur Cluster	Barela	13,628	4
	Bhedaghat	7,189	2
	Chichali	10,212	3
	Gadarwara	51,407	16
	Gotegaon	30,317	10
	Kareli	32,320	10
	Katangi (483105)*	20,561	6
	Majholi	14,265	4
	Narsinghpur	64,757	20
	Panagar	30,163	10
	Patan	15,792	5
	Saikheda	11,648	4
	Salichauka (Babai Kalan)	14,280	5
	Shahpura (483119)*	14,688	5
	Tendukheda (487770)*	14,122	4
	Total	345,349	108

<sup>\*</sup> ULBs with similar names are now differentiated through PIN Codes in round brackets.

# 18 NEEMUCH CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
18 Neemuch Cluster	Bhanpura	21,013	6
	Garoth	15,122	4
	Shamgarh	24,637	7
	Suwasara	13,304	4
	Malhagarh	8,332	2
	Narayangarh	10,191	3
	Piplya Mandi	15,070	4
	Singroli	9,523	3
	Ratangarh	7,994	2
	Diken	7,951	2
	Athana	6,456	2
	Jawad	17,129	5
	Nayagaon	6,699	2
	Sarwania Maharaj	6,737	2
	Jiran	11,518	3
	Neemuch	128,561	37
	Kukdeshwar	11,956	3
	Manasa	26,551	7
	Rampura	18,364	5
	Total	367,108	103

# 19 RATLAM CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
19 Ratlam Cluster	Alot	26,041	8
	Badawada	9,395	3
	Dhamnod (457001)	9,007	3
	Jaora	80,891	24
	Jhabua	38,609	11
	Meghnagar	13,962	4
	Namli	10,555	3
	Petlawad	16,386	5
	Piploda	8,957	3
	Ranapur	13,359	4
	Ratlam	286,077	85
	Sailana	12,947	4
	Tal	16,104	5
	Thandla	17,015	5
	Mandsaur	152,984	46
	Nagri	7,596	2
	Sitamau	15,179	5
	Pithampur	136,282	41
	Dhar	101,420	30
	Rajgarh (457001)	25,708	8
	Sadarpur	7,876	2
	Badnawar	22,588	7
	Total	1,028,938	308

# 20 REWA CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
20 Rewa Cluster	Amarpatan	20,960	7
	Baikunthpur	11,103	4
	Birsinghpur	15,485	5
	Chakghat	11,531	4
	Chitrakoot	25,179	8
	Churhat	16,157	5
	Govindgarh	11,390	4
	Gurh	15,775	5
	Hanumana	18,111	6
	Jaitwara	10,459	3
	Kotar	8,121	3
	Kothi	9,495	3
	Maihar	43,403	14
	Majhauli	12,842	4
	Mangawan	14,794	5
	Mauganj	28,531	9
	Nagod	24,371	8
	Naigarhi	11,235	4
	New Ramnagar	23,349	8
	Rampur Baghelan	14,728	5
	Rampur Naikin	12,890	4
	Rewa	254,480	83
	Satna	305,583	99

Semaria	14,520	5
Sidhi	58,671	19
Sirmour	12,827	4
Teonthar	18,400	6
Unchahara	19,915	6
Total	1,044,305	340

# 21 SHAHDOL CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
21 Shahdol Cluster	Amarkantak	9,088	2
	Anuppur	21,489	6
	Beohari	26,506	7
	Bijuri	35,293	10
	Burhar	20,830	6
	Chandia	17,160	5
	Dhanpuri	48,763	13
	Jaisinghnagar	8,891	2
	Jaithari	9,067	2
	Khand	11,504	3
	Kotma	32,077	9
	Nowrozabad	23,631	6
	Pali	24,107	6
	Pasan	30,720	8
	Shahdol	93,606	25
	Umaria	35,759	10
	Total	448,491	120

# 22 SINGRAULI CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
22 Singrauli Cluster	Singrauli	237,853	91
	Total	237,853	91

#### 23 SAGAR CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
23 Sagar Cluster	Banda	33,393	10
	Bina- Etawa	69,684	20
	Deori	27,680	8
	Garhakota	35,340	10
	Khurai	55,191	16
	Rahatgarh	34,056	10
	Rehli	32,752	9
	Sagar	296,490	86
	Shahgarh	17,602	5
	Shahpur (470669)*	14,760	4
	Makronia	23,861	7
	Total	640,809	185

<sup>\*</sup> ULBs with similar names are now differentiated through PIN Codes in round brackets.

# 24 DAMOH CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
24 Damoh Cluster	Damoh	150,710	43
	Hatta	35,059	10
	Hindoria	17,279	5
	Patera	10,720	3
	Patharia	22,706	7
	Buxwaha	10,216	3
	Tendukheda (470880)	15,549	4
	Total	262,239	75

# 25 CHHATARPUR CLUSTER

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
25 Chhatarpur Cluster	Bada Malhera	19,800	5
	Badagaon (471405)	10,024	2
	Baldeogarh	9,804	2
	Barigarh	9,630	2
	Bijawar	22,152	5
	AJAY GARH	16,656	4
	Amanganj	13,886	3
	Devendra nagar	12,785	3
	Kakarhati	8,452	2

Pawai	14,465	3
Panna	159,091	38
Chandla	13,864	3
Chhatarpur	153,482	36
Garhi - Malhera	14,713	3
Ghuwara	14,364	3
Harpalpur	20,009	5
Jatara	18,897	4
Jeron Khalsa	10,179	2
Kari	11,241	3
Khajuraho	26,437	6
Khargapur	15,996	4
Laundi	23,760	6
Lidhora Khas	14,010	3
Maharajpur	25,192	6
Niwari	25,619	6
Nowgong	43,822	10
Orchha	12,431	3
Palera	18,890	4
Prithvipur	29,031	7
Rajnagar	15,392	4
Satai	11,438	3
Tarichar Kalan	8,287	2
Tikamgarh	85,426	20
Total	909,225	212

## 26 JABALPUR CITY

Name of Cluster	Town	Population (2015)	MSW Generation in TPD (2015)
26 Jabalpur City	Jabalpur	1,154,715	400

Jabalpur City Project is Standalone project only for Jabalpur City. Cities of Jabalpur Cluster are formed into Jabalpur Cluster and Bid is invited

## GLOSSARY

S. No.	Term	Explanation	
1	APL	Above Poverty Line	
2	BPL	Below Poverty Line	
3	CAGR	Compound Annual Growth Rate	
4	СМО	Chief Municipal Officer	
5	СРСВ	Central Pollution Control Board	
6	DBFOT	Design, Build, Finance, Operate and Transfer	
7	DFID	Department for International Development	
8	DPR	Detailed Project Report	
9	DTDC	Door to Door Collection	
10	EC	environmental clearance	
11	EHS	Environment Health and Social	
12	FSR	Feasibility Study Report	
13	Gol	Government of India	
14	GoMP	Government of Madhya Pradesh	
15	IE	Independent Engineer	
16	IEC	Information, Education and Communication	
17	ISWM	Integrated Solid Waste Management	
18	MC	Monitoring Committee	
19	MPUIIP	MP Urban Infrastructure Investment Programme	
20	MSW	Municipal Solid Waste	
21	NGT	National Green Tribunal	
22	NN	Nagar Nigam	
23	O&M	Operations & Maintenance	
24	PIOP	Project Implementation and Operation Plan	
25	PPP	Public Private Partnership	
26	RDF	Refuse Derived Fuel	
27	SBM	Swaccha Bharat Mission	
28	SLB	Service Level Benchmark	
29	SLEC	State Level Empowered Committee	
30	SPCB	State Pollution Control Board	
31	SWM	Solid Waste Management	
32	TPD	Tonne Per Day	
33	UADD	Directorate of Urban Administration & Development	
34	ULBs	Urban Local Bodies	
35	VGF	Viability Gap Funding	
36	WTC	Waste to Compost	
37	WTE	Waste to Energy	

## Summary Statement on Progress made by Local Bodies in respect of Waste Collection, Segregation, Transportation and Disposal:-

In order to comply with the Solid Waste Management Rules, 2016 following steps have been taken by the state:-

Waste Collection: 100% door to door collection of the waste has been achieved in 364 ULBs and 14 ULBs are facilitating partial door to door collection of the waste.

<u>Waste Segregation:</u> 100% Segregation at source of waste has been achieved in 249 ULBs. However, for the remaining 129 ULBs, 100% segregation of waste from each house is yet to be achieved.

<u>Waste Transportation:</u> ULBs transporting the segregated waste in covered vehicles from transfer stations to the processing facilities.

Waste Processing/Treatment:- 26 clusters are proposed for the waste processing,out of them 05 clusters are based on "Waste to Energy generation" (67-73 MW target) and remaining 21 clusters are based on "Composting / Biomethanization".

Currently, 3 ISWM projects are operational in Katni, Jabalpur and Ujjain and 5 ISWM projects are in various stages of implementation (Bhopal, Rewa, Indore, Gwalior and Sagar), PPP Partners are appointed for 5 ISWM projects (Khandwa, Chhatarpur, Jabalpur (C&T), Neemuch and Singrauli)

Out of the remaining 13 ISWM projects, 4 ISWM projects are in 'Live Tender' stage (Shahdol, Betul, Damoh and Vidisha) and the tenders are yet to be floated for remaining 9 ISWM projects (Guna, Shivpuri, Balaghat, Badwani, Shajapur, Ratlam, Hoshangabad, Dewas, Bhind and Chhindwara).

<u>Waste Disposal:</u> Sites have been selected for common regional sanitary landfills for disposal of inert waste from the cities having population > 5.00 lakhs namely, Indore, Jabalpur, Ujjain, Bhopal and Gwalior. Out of 34 towns (population > 1.00 Lakhs), waste processing facilities are fully operational in 18 towns and partially operational in 16 towns.

Out of 344 ULBs (population <1.00 Lakhs), Geo-tagged composting facilities are operational in 145 ULBs and in rest of the ULBs, composting facilities are being improved. Material recovery is being done in all the ULBs and Permanent Material Recovery Facilities [MRFs] have been setup in 112 ULBs. Home composting is being done in 148716 households and ULBs across the State are selling 227 TDP of compost per day.

डॉ आश्रती अग्रवाल वैज्ञानिका <u>Legacy Waste:</u> Out of 378 identified dumping sites with an area of 407.80 acres, 33 dumping sites have been taken for bio remediation of legacy waste. 10 dumping sites at Sailana, Nagada, Rampur Naikin, Indore, Panna, Hatod, Rau, Khand, Umariya, Gautampura are completely cleared of their legacy waste and 187.9 acres of land has been reclaimed (45%).

<u>Policy & Bye-Laws:</u> The Urban Development & Housing Department of the State Government has notified "Solid Waste Management Policy-2018" on 05.09.2018 under Rule 11 (1)(a) of SWM Rules 2018. 310 ULBs have framed bye-laws under Rule 15 of Solid Waste Management Rules, 2016 and collected penalty of 1.66 Cr during 2018-19.

<u>Public Awareness:-</u> The State has adopted an inclusive strategic model for IEC-BCC initiatives to bring the desired changes in the community behavior and ensuring ownership among citizens and communities towards cleanliness. Our IEC-BCC initiatives target broader spectrum of cleanliness factors covering DTDC, source segregation, open defection, prevention of manual scavenging, hygiene practices, etc., and creating awareness on health and environmental benefits among masses.

The State's IEC-BCC Campaigns have targeted all the key stakeholders including Resident Welfare Associations (RWA), Educational Institutions, Businesses, Community Leaders, Sanitation Staff, Bulk Waste Generators, etc. The State has conducted 9 State-wide Campaigns in the year 2018.

The state is also taking sincere efforts to sensitize the students by conducting seminars, workshops and campaigns in every district covering approximately 25,000 school of the State. The State intends to create a healthy competition among the schools by declaring 6 Schools in every district as "Green Schools" on the basis of cleanliness maintained in the schools, waste management, water conservation techniques, plantation done, making and using eco-friendly items, reusing the old text books etc. A state level award has also been instituted for 3 best environment friendly schools under primary, middle and higher secondary categories respectively.

"Eco-club" has been constituted in 250 schools of every district i.e. 13,000 schools in the State. Environment related activities are conducted throughout the year in these schools with the help of the eco-clubs. The eco-clubs also act as the resource school for other schools in their vicinity.

<u>Committee</u>:- The State Government has constituted **State Level Advisory Body** (SLAB) as per Rule 23 (1) of Solid waste Management Rules 2016 vide letter dated 13.10.2017. The meetings of SLAB were held on 16.02.2018 and 11.09.2018 respectively.

The meeting of the Regional Monitoring Committee constituted under the Chairmanship of Justice Mr. K.K Trivedi was held on 07.02.2019.

डॉ अममी अप्रवास ध्रामण्ड Thereafter, the Hon'ble Tribunal vide its order dated 16.01.2019 modified the earlier directions with respect to Regional Monitoring Committee and reconstituted them as State Level Committees. The State Level Committee [SLC] was accordingly reconstituted vide order dated 27.03.2019. The SLC held its meetings under the Chairmanship of Justice Mr. K.K Trivedi on 15.02.2019 and 30.03.2019.

The Special Task Force was constituted in every district.

<u>Achievements</u>:- The Ministry of Housing and Urban Affairs, Government of India conducts nation-wide Swachh Survekshan survey under Swachh Bharat Mission. The efforts being taken by the State for effective disposal of waste and cleanliness, have been reflected in the rankings of Swachh Survekshan 2019, wherein Madhya Pradesh has been declared the Best Solid Waste Management State of India.

In addition, Indore has been declared the cleanest city of the country for the last 3 years; Bhopal has been declared cleanest capital in Swachh Survekshan 2019 and second cleanest city in India in 2017 and 2018.

Among the Top 100 cleanest cities in India, Madhya Pradesh has 20 Cities in Swachh Survekshan 2019. Madhya Pradesh is declared as 100% Open Defection Free (ODF) in urban areas with third party inspection by Quality Council of India. 44 cities of the State have been declared as ODF+ and 14 cities are declared as ODF++ by Government of India.

डॉ अस्ती अग्रवाल वैज्ञानिक

	Annex - IV
	MRF Facilities Operational
1	Singrauli
2	Satna
3	Katni
4	Badwani
5 //	Khargone
6	Indore
7	Goutampura
8	Omkareshwar
9	Burhanpur
_ 10	Ujjain —
11	Dewas
12	Nagda
13	Gwalior
14	Bhopal
15	Betul
16	Betul Bazar
17	Multai

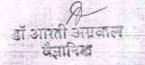


## Monitoring at Waste processing/Landfills sites

S.No.	Regional Office	Name of Sites/Facilities	Ambient Air (No. of Samples)	Ground water (No. of Samples)
1.	,,	Bhopal	02	
2.	Bhopal	Vidisha	02	01
3.	^	Ganjbasoda	01	01
4.		Sironi	01	01
5.		Kurwai	01	01
6.		Lateri	01	01
7.		Hoshangabad	03	01
8.		Seoni Malwa	03	01
9.	- F X	Itarsi #	03	01
10.		Pipariya	02	01
11:		Babai	-	01
12.		Betul	02	
13.		Amla	02	H 3
14.		Sami,	02	
15.	4	Bhensdehi	01	
16.	1 V , I ,	Chichouli	01	25.
17.	2	Multai	02	
18.		Betul Bazar	01	1.33
19.	1	Athner	- 01	
20.		Berasiya	02 ·	
21.	19 M 15	Sehore	01	01
22.		Aashta	01	01
23.		Budhni	01	01
24.		Jawar	02	0.1
25.	77	Ichhawar	02	01
26.	TE 154	Rehti	02	01
27.		Nasrullagani	02	01
28.	2	Kothri	02	01
29.		Shahganj	01	01
30.	1.00	Harda	01	
31.		Pachmarhi	S-0	01
32.		Raisen	01	
33.		Sathiya	01	-
34.		Mandideep	2	
35.		Shamshabad	1.	1
36.		Silwani	1	I
37.		Sanchi	2	1/*
38.	2 3	Begamganj	3	1
39.		Shahgani	1	-
40.		Obedullaganj	1	tis:
41.		Sultanpur	* 1 2	L.

ब्रॉ आस्ती अग्रवाल बैज्ञानिक

42.		Amarwara	3	2
43.	Chhidwara	Badkuhi	2	2
44.		Bichua	3	2
45.		Chand	2	2
46.		Chandameta-Butaria	2	2
47.	0	Chaurai Khas	2	2
48.		Chhindwara	4	2
49.		Damua	5	2
50.		Donger Parasia	2	2
51.		Harrai	1	2
52.	1 191	Junnardev Jamai	4	-2
53.		Lodhikheda	2	2
54.		Mohgaon	2	2
55.		Neuton Chikhli Kalan	2	2
56.		Pandhurna	4	2
57.		Piplanarayannwar	2	2
58.		Sausar	2	2
59.	Dhar	Thandla	2	1
60.		Jhabua	1	1
61.	11 1	Dhar	1	
62.	į.		0	3
63.	Dewas	Alirajpur Dewas	8	
64.				12
65.	Guna	Shajapur Biaora	5	7
66.		Rajgarh	2	2
67.	5 5 5	Badarwas	2	2
68.		Kolaras	+7	2
69.	# * * . ·	Shivpuri		2
70.		Aron	2	2
71.	12 51	Ashoknagar	-	2
72.		Chachaura-Binaganj	2	2
73.		Chanderi Chanderi	<u> </u>	2
74.		Guna	1 6	2
75.			2	2
76.		Isagarh Kumbbroi	*	2
77.		Kumbhraj	X,51.4	2
78.		Mungaoli	-	2
		Raghogarh-Vijaypur		2
79.		Shadora	<u> </u>	2
80.	3 V 5	Narwar	- , 5	2
81.	AND DESCRIPTIONS	Pichore	1 2 0 10	3

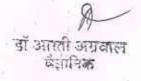


82.	Guna	Karera		3
83.		Khaniyadhana		3
84.		Bairad		2
85.		Sarangpur		3
86.		Jirupur		
87.	1	Khilchipur	-	2
88.		Machalpur	-	2
89.		Boda		2
90.		Talen		2
91.		Pachor	-	2
92.		Suthaliya		3
93.		Narsighgarh	· ·	1
94.		Khujner		2
95.		Chhapiheda	-	2
96.		Kurawar		2
97.		Antari		1
98.	Gwalior	Badoni	1	1
99.	-	Bhander	2	1
00.	-	Bhitarwar	1	1
01.	-	Bilaua	1	
102.		Dabra	1	1
03.	- '	Datia	1	1
04:		Gwalior	1	8112
05.			0	1
06.	+ -	Indergarh	2	2
07.	1	Pichhore	1	1
08.	-	Banmor	1	a lie
09.		Joura	0	1 -
10.		Kailras	1	1
11.	-	Morena	2	1
	-	Ambah	1	1
12.	- ×	Bhind		1
13.		Gohad	1	1
14.		Contanment Board	1	(8)
15.		Mau	1	1,4
16.		Mehgaon	0	1
17.	-	Sheopur kalan	2	1
18.		Vijaypur	2	1
19.	- 5	Sewda	1	1
20.		Sabalgarh	2	754
21.	1	Baroda	2	



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1	1.5	
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122.	Indore	Indore		
123.		Khandwa	6	36
124.	_	Bhurhanpur	0	1
125.		Khargon	0	1
126.		Badwani	1	1
127.		Badnawar	0	1
128.		Sihora	. 0	0
129.	Jabalpur		1	2
130.		Jabalpur CB	2	2
131.	1	Barela	1	2
132.		Bhedaghat		2
133.		Chichali	1	2
134.		Gadarwara	1	2
135,		Gotegaon	01	2
136.	_	- Kareli	_	1
37.		Katangi		
38.	-	Manjholi	01	02
39.		Narsinghpur	0	02
40.	- 1-	Panagar	I	2
41.	1 1 1	Patan	1	2
42.		Saikheda	0	2
13.		Salichauka	01	2
4.		Shehpura Bhitoni	0	2
5.		Tendukheda	0	2
6	-	Baihar	0	2
7.		Balaghat	0	2
3.		Bamhani Banjar	0	2
).		Bichhiya	0	2
100		Katangi	0	2
.1 30		Lanji	0	2
		Malajkhand	0	2
	te l	Mandla	3	2
		Nainpur	0	2
14.7		Niwas	0	2
		Waraseoni	0	2
		Barghat	0	2
-		Lakhnadon		2
		Seoni-	0	22
		Kathonda	0	2 .
			0	2



160.	Katni	Barhi		
161.			4	2
162.		Katni(Murwara)	4	2
163.		Kymore	4	2
164.		Vijayraghavgarh	4	2
	Satna	Satna	1	1
165.		Chitrakut	1	1
166.	33	Maihar	1	
167.		Birsinghpur	1	1
168.	İ	Jaitwara		1
169.		Kothi	1 1	1
170.		Nagod	1	1
171.		Amarpatan	1	1
172. 173.		Kotar	1	1
174.	1	Uchehra	1	1
175.		Ram Nagar	1	1
176.	Ujjain	Rampur Baghelan	1	1
177.	- jjum	Ujjain	4	- 1
178.		Khachrod	-	3
179.	E 12	<u>Nagda</u>	-	3
		Unhel	N 2	3
180.	-	Neemuch	3	2
181.	1 2	Agar	2	
182.	-1	Ratlam	5	1
183.		Mandsaur	4	1
184.		Gondiya		3
185.	11 15	Chakghat	1	1
186.	Rewa	Baikunthpur	1	2
187.	ie i	Churhat	1 1	2
88.	-	Govindgarh	1	2
89.	· ·		I	2
90.	-	Gurh	1	2
91.	- L	Hanumana	1	2
	_	Majhauli	1	2
92.	0	Mangawan	1	2
93.		Mauganj	1	2
94.	Pi .	Naigarhi	1	
95.	1	Rampur Naikin		2
96.		Rewa	1	2
97.	7.	Semaria	8	2
98.	v.	Sidhi	1	2
99.		Sirmour	8	2
00.			1	2
		Teonthar	1	2



201.	Pithampur	Pithampur		
202.	Sagar	Panna		4
203.			6	2
204.		Chhatarpur	.8	3 -
	-	Damoh	8	2
205.		Tikamgarh	10	2
206.		Sagar	2	
207.	Shahdol	Umariya		2
208.		Shahdol	4	2
209.		Anuppur '	4	2
210.	-	7.4	4	2
211.	Cin 11	Dindori	4	2
.11.	Singrauli	Singrauli	8	4
Total		315	369	

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