

# Spatial Distribution of Urban Infrastructure Development Project under UIG Sub-mission, JnNURM in India

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**Abstract** - For the first time in India, government of India had launched Jawaharlal Nehru National Urban Renewal Mission (JnNURM) on 3<sup>rd</sup> December, 2005 to improve urban infrastructure facilities and housing for urban poor in 65 cities. This scheme has divided into two missions namely; (1) UIG sub-mission and (2) Basic Service to Urban Poor (BSUP) sub-mission. The UIG sub-mission is covered 11 project sectors such as water supply, water supply, waste water management, storm water and drainage, preservation of water body in urban areas, solid waste management, urban renewal, development of historical areas, urban transport. Identified of 65 cities under JnNURM had implemented different numbers of projects in different sectors of urban infrastructure development. This paper is presenting distribution of UIG projects in 65 cities across country. The research methodology was adopted from secondary data which is available to public domain.

**Keywords:** JnNURM, Urban Project, Water Supply, Urban Transport

commercial activities, which give rise to the development of the private sector [1]. India had reached population of 1027 million with approximately 28 percent or 285 million people lived in urban areas [2]. By 2025 India will be adding 215 million people to cities and towns across country as per estimated by Mckinsey Global Institute (2010). This rapid urbanization caused challenge for urban infrastructure development in small and medium towns in India. In this context, The JnNURM was a very unique scheme and opportunity to developed urban infrastructure facilities through renewal. This scheme has divided into two sub-missions namely; Urban Infrastructure and Governance (UIG) and Basic Service to Urban Poor (BSUP) (Fig. 1). The ministry of urban development is dealing the projects for eleventh sectors under GIG sub-mission whereas the BSUP sub-mission is monitoring by ministry of housing and poverty alleviation. The main focus of JnNURM projects was to encourage the state and urban local body level by assisting financial and reforms strategy.

## 1.INTRODUCTION

Urbanization in India began to gather speed after independence due to decentralization of industries and

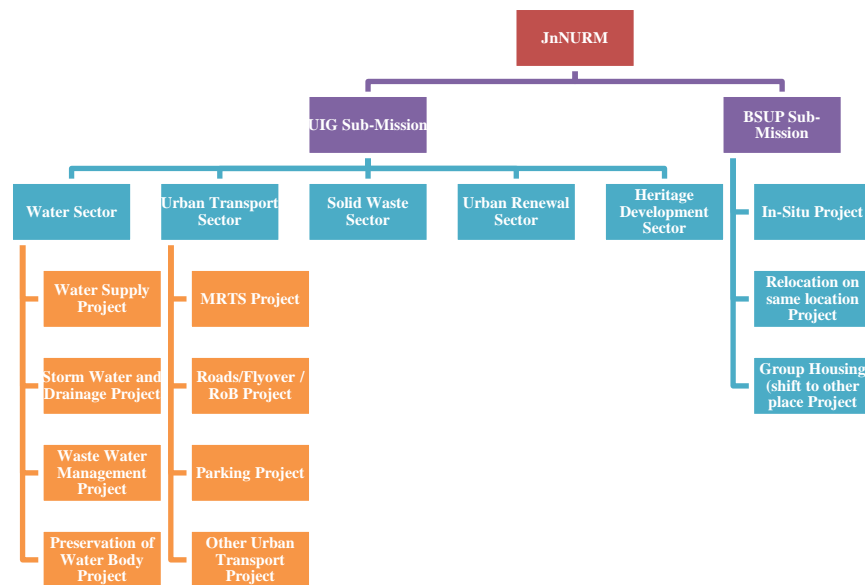


Fig. 1 Structure of JnNURM

The JnNURM cities had been divided into three categories based on the size of city population as per 2001 census. The first category includes cities includes Delhi, Mumbai, Ahmadabad, Bangalore, Chennai, Kolkata and Hyderabad cities which had a population of more 4 million plus. The second category cities which had a population of 1 million to 4 million such as Patna, Faridabad, Bhopal, Ludhiana, Jaipur, Lucknow, Madurai, Nashik, Pimpri Chinchwad (Pune), Cochin, Varanasi, Agra, Amritsar, Vishakhapatnam, Vadodara, Surat, Kanpur, Nagpur, Coimbatore, Meerut, Jabalpur, Asansol, Allahabad, Vijayawada, Rajkot, Dhanbad and Indore. The third category cities had a

population of below 1 million namely; Guwahati, Itanagar, Jammu, Rajkot, Panaji, Shimla, Ranchi, Thiruvananthapuram, Imphal, Shillong, Aizawl, Kohima, Bhubaneshwar, Gangtok, Agartala, Dehradun, Bodhgaya, Ujjain, Puri, Ajmer-Pushkar, Nainital, Mysore, Pondicherry, Chandigarh, Srinagar, Mathura, Haridwar, and Nanded. Based on the census 2011, there are 20 cities which had a population of more than 4 million, 34 cities (ranging from 1 to 4 million), and 11 cities in north east states and Jammu and Kashmir cities. Among north east cities, Gangtok and Itanagar cities were having less than 1 million and rest were between above 1 to 16 million populations (Fig.2).

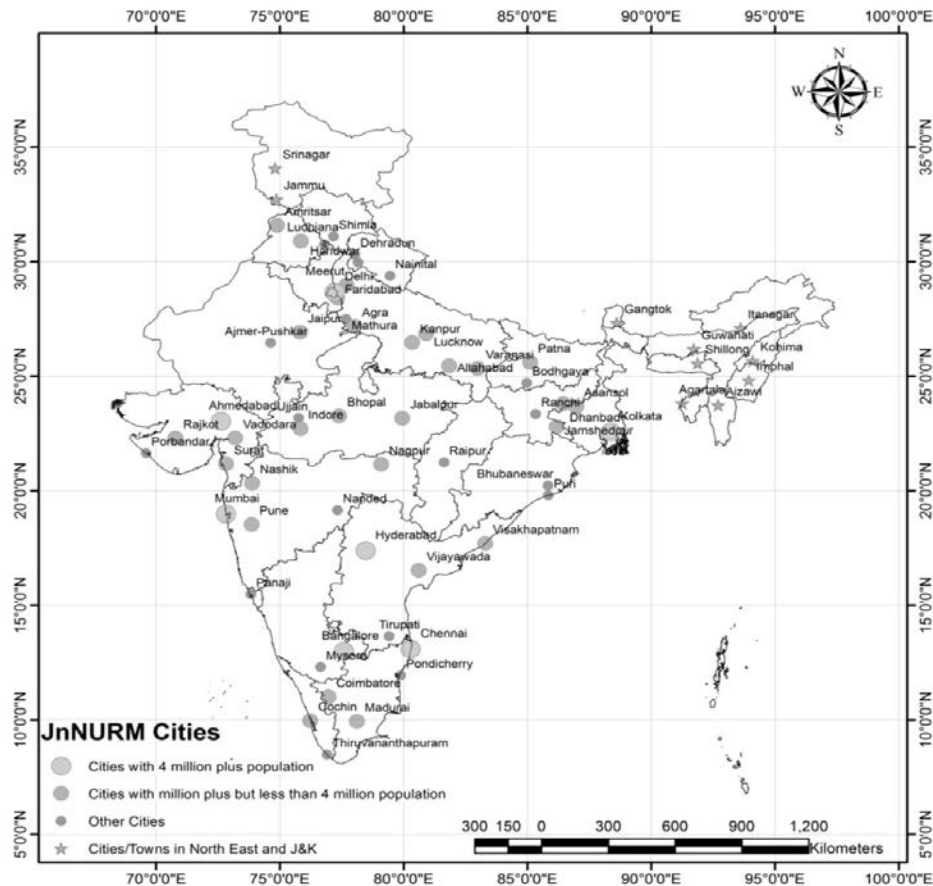


Fig.2 Identified JnNURM Cities, 2005

**II.HYPOTHESIS AND METHODOLOGY**

All identified city under JnNURM would have performed at different level due to nature and attitude of state and urban local body toward JnNURM scheme. The research methodology was adopted limited literature review and data processing is from secondary data which are public domain.

**III.RESULTS AND DISCUSSION**

Variety of UIG projects such as water supply (54 cities out of 65 cities), waste water management (47 cities out of 65

cities), storm water and drainage (32 cities out of 65 cities), preservation of water body (4 cities out of 65 cities) are dealing water issues in urban area. In the sector of solid waste management has covered 47 cities out of 65. In the sector of urban transport consist of parking (3 cities out of 65 cities), road/flyover/road (24 cities out of 65 cities), MRTS (10 cities out of 65 cities), and other urban transport (7 cities out of 65 cities) had implement. Urban renewal project was implementing only in 8 cities and heritage sector covered only 5 cities (Fig. 3). Highest percent city which has covered was water supply and followed by waste water management and lowest percent of city was in parking sector (Fig. 4).

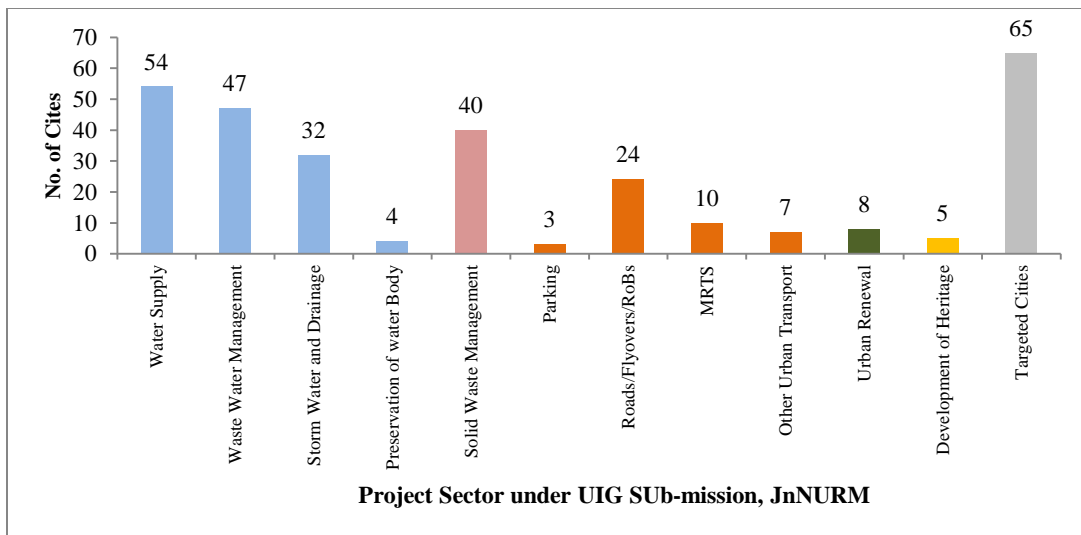


Fig. 3 Eleventh Sector of UIG Project Covered cities in India

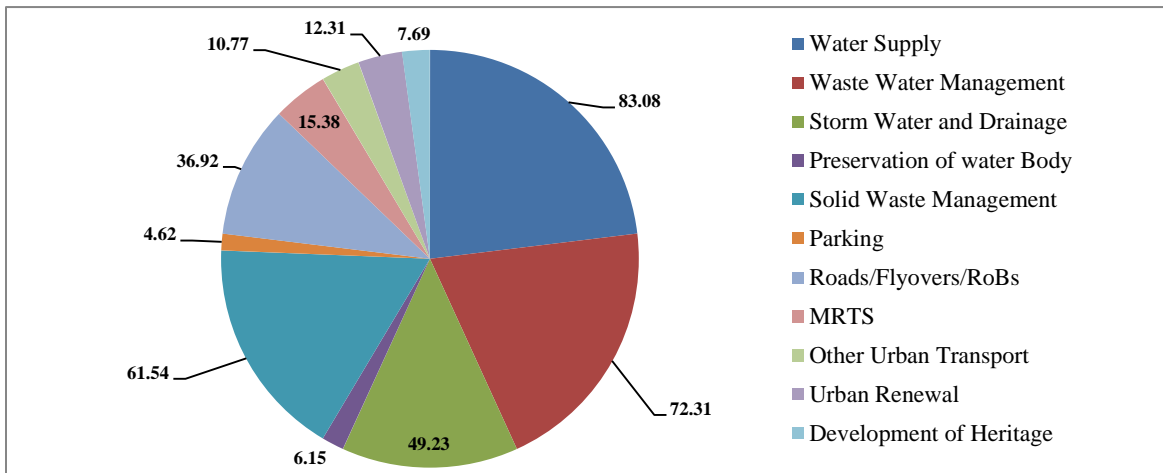


Fig. 4 City Covered variety of UIG Project in Percentage

In comparison of eleventh sectors of UIG project, water sector had shared 62.08 percent, the urban transport sector (26.65%), solid waste management (8.05%), urban renewal (1.97%) and least was in the heritage development (1.25%). In comparison of the all project components, 'water supply' shared maximum number of projects (28.26%), 'waste water management' share 20.04% projects, 'Roads/Flyover/RoB' shared 18% projects, 'storm water and drainage' shared 13.06% projects, 'solid waste management' shared 8.05% projects, 'MRTS' shared 3.76% projects, 'other urban transport' shared 3.04% projects, 'urban renewal' shared 1.97% projects, 'development of heritage areas' shared 1.25% projects, 'parking' shared 0.89% projects, and least no. of projects were shared by 'preservation of water body'(0.72%) (Fig. 5).

**UIG Project at City Level:** The total numbers of projects implemented under UIG mission were 599. The projects are distributed in 65 cities in eleven sectors: water supply (159 projects), waste water management (112 projects), storm water and drainage (73 projects), preservation of water body (4 projects), solid waste management (45 projects), other

urban transport (17 projects), roads/flyover/RoBs (106 projects), MRTS (21 projects), Parking (5 projects), Urban Renewal (11 projects), development of heritage areas (7 projects). The maximum number of 60 projects have been implemented in Kolkata city with maximum of these projects in water supply sector (24 projects), followed by storm water and drainage sector (12 projects). The sectors of water supply and storm water drainage together had reached highest number in the Kolkata city among the JnNURM cities.

Projects in 'other urban transport' sector of urban transport system had been implemented only in seven cities (Kolkata, Bangalore, Delhi, Greater Mumbai, Hyderabad, Mysore and Itanagar). The city of Bangalore had maximum number of projects (9 projects) followed by Mysore and Kolkata (2 projects each). The remaining four cities had one project each. In 'Roads / Flyovers / RoB' sector, 4 cities had executed projects namely; Delhi 19 projects, Bangalore (14 projects implemented), Kolkata (14 projects implemented), and Ahmadabad (10 projects implemented).

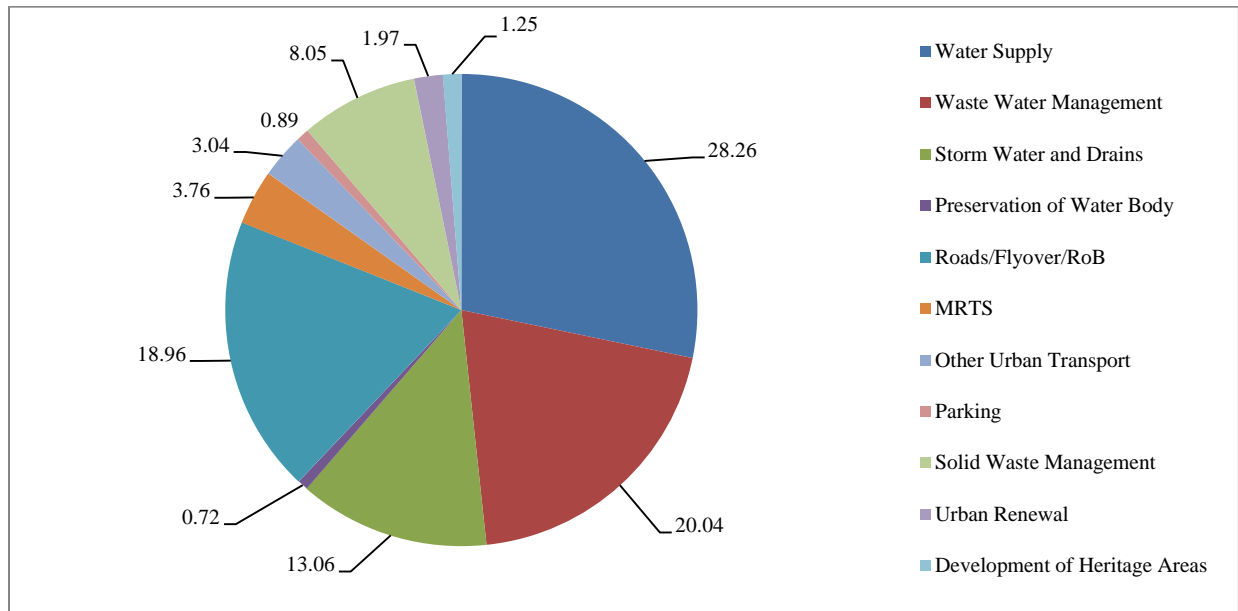


Fig. 5 UIG Projects Distribution in Percentage

Twenty one projects had been implemented in MRTS sector in 9 cities namely, Pimpri Chinchwad (Pune), Ahmadabad, Jaipur, Surat, Kolkata, Vishakhapatnam, Vijayawada, Bhopal, and Rajkot. Pimpri Chinchwad (Pune) city had implemented maximum number of projects (7 DPRs), Ahmadabad and Jaipur have implemented 3 projects each, Indore implemented 2 projects and remaining cities of Surat, Kolkata, Vishakhapatnam, Vijayawada, Bhopal and Rajkot implemented one project each. This was a fact that growing cities need a lot of urban infrastructure development and management of urban transport system. Therefore, the urban transport sectors were mainly focused in the growing cities and metropolitan cities only whereas the smaller and medium towns focused on the water supply and waste water management and storm water and drainage sectors. In fact, parking was another issue in the fast growing cities and parking projects were executed in cities of Delhi (3 projects), Indore (1 project) and Kohima (1 project). In case of urban renewal sector under UIG submission, eight cities have executed projects. Cities of Hyderabad, Jaipur and Bhopal had two projects each, and remaining five cities of Kolkata, Delhi, Kochi, Ajmer and Bhubaneswar had implemented one project each. In heritage development sector, cities of Chennai, Ahmadabad, Nanded, Mysore, Nainital, Ujjain and Panaji had

implemented one project each, while remaining cities have not implemented any project (Table 1).

#### IV.CONCLUSION

UIG project under JnNURM was distributing scattered across India. The water sector has been implementing maximum number of project at maximum number cities whereas development of heritage area. Preservation of water body is one sector covered by least number of cities. The solid waste management is one sector among which had implement at maximum number of cities.

#### REFERENCES

- [1] Deepika, V. Munir, A. Spatial Analysis of Urbanization in Western Uttar Pradesh, India, British Journal of Advance Academic Research, 2013, 2 (1) 29-42
- [2] Ministry of Urban Development. Overview of JnNURM, Ministry of Urban Development, Government of India, 2005
- [3] Mckinsey Global Institute. India's Urban awakening: Building Inclusive cities, Sustaining economic growth, Mckinsey Global Institute, 2010
- [4] Ministry of Urban Development. JnNURM Project Status Report, 2012, Ministry of Urban Development, Government of India, Delhi, 2012

TABLE I NUMBER OF UIG PROJECTS, JNNURM

Sl. No	State	City	Eleven Sectors of Urban Infrastructure											Total No. of Projects
			1	2	3	4	5	6	7	8	9	10	11	
			Water Supply	Waste Water Management	Storm Water and Drains	Preservation of Water Body	Solid Waste Management	Other Urban Transport	Roads/Flyover / RoB	MRTS	Parking	Urban Renewal Development of Heritage Areas		
1	West Bengal	Kolkata	24	4	12	0	2	2	14	1	0	1	0	60
2	Karnataka	Bangalore	2	6	7	0	0	9	14	0	0	0	0	38
3	Tamil Nadu	Chennai	13	12	4	0	2	0	3	0	0	0	1	35
4	Delhi	Delhi	0	3	1	0	0	1	19	0	3	1	0	28
5	Maharashtra	Greater Mumbai	8	9	4	0	2	1	2	0	0	0	0	26
6	Gujarat	Ahmadabad	1	6	4	0	1	0	10	3	0	0	1	26
7	Gujarat	Surat	5	9	3	0	1	0	6	1	0	0	0	25
8	Andhra Pradesh	Hyderabad	8	3	5	0	0	1	3	0	0	2	0	22
9	Maharashtra	Pimpri Chinchwad (Pune)	2	2	5	0	1	0	3	7	0	0	0	20
10	Maharashtra	Nagpur	11	1	0	0	0	0	5	0	0	0	0	17
11	Andhra Pradesh	Vishakhapatnam	8	2	3	0	0	0	0	1	0	0	0	14
12	Gujarat	Vadodara	4	2	1	1	1	0	4	0	0	0	0	13
13	Andhra Pradesh	Vijayawada	2	4	3	0	1	0	2	1	0	0	0	13
14	West Bengal	Asansol	6	1	0	0	1	0	3	0	0	0	0	11
15	Maharashtra	Nanded	2	4	1	0	0	0	3	0	0	0	1	11
16	Madhya Pradesh	Indore	1	1	0	0	1	0	4	2	1	0	0	10
17	Rajasthan	Jaipur	0	2	0	1	1	0	0	3	0	2	0	9
18	Karnataka	Mysore	3	0	1	0	1	2	1	0	0	0	1	9
19	Tamil Nadu	Madurai	5	1	1	0	1	0	0	0	0	0	0	8
20	Uttar Pradesh	Lucknow	2	3	1	0	1	0	0	0	0	0	0	7
21	Madhya Pradesh	Bhopal	3	0	1	0	0	0	0	1	0	2	0	7
22	Uttar Pradesh	Kanpur	2	3	0	0	1	0	0	0	0	0	0	6
23	Kerala	Kochi	1	1	1	0	1	0	1	0	0	1	0	6
24	Bihar	Patna	4	0	0	0	2	0	0	0	0	0	0	6
25	Maharashtra	Nashik	1	2	1	1	1	0	0	0	0	0	0	6
26	Uttar Pradesh	Varanasi	3	1	1	0	1	0	0	0	0	0	0	6
27	Gujarat	Rajkot	1	1	1	0	1	0	1	1	0	0	0	6
28	Tamil Nadu	Coimbatore	2	1	1	0	1	0	0	0	0	0	0	5
29	Kerala	Thiruvananthapuram	1	2	1	0	1	0	0	0	0	0	0	5
30	Punjab	Amritsar	2	1	0	0	1	0	1	0	0	0	0	5
31	Uttarakhand	Dehradun	1	2	0	0	1	0	1	0	0	0	0	5
32	Uttarakhand	Haridwar	1	2	0	0	1	0	1	0	0	0	0	5
33	Himachal Pradesh	Shimla	1	1	0	0	2	0	1	0	0	0	0	5
34	Uttar Pradesh	Agra	1	2	0	0	1	0	0	0	0	0	0	4
35	Haryana	Faridabad	1	1	1	0	1	0	0	0	0	0	0	4
36	Madhya Pradesh	Jabalpur	1	2	1	0	0	0	0	0	0	0	0	4
37	Uttar Pradesh	Allahabad	2	1	0	0	1	0	0	0	0	0	0	4
38	Uttarakhand	Nainital	1	1	0	0	1	0	0	0	0	0	1	4
39	Rajasthan	Ajmer	2	1	0	0	0	0	0	0	0	1	0	4
40	Mizoram	Aizawl	1	0	0	0	0	0	3	0	0	0	0	4
41	Uttar Pradesh	Meerut	1	1	0	0	1	0	0	0	0	0	0	3
42	Jammu & Kashmir	Srinagar	2	1	0	0	0	0	0	0	0	0	0	3
43	Chandigarh	Chandigarh	3	0	0	0	0	0	0	0	0	0	0	3
44	Orissa	Bhubaneswar	0	1	1	0	0	0	0	0	0	1	0	3
45	Andhra Pradesh	Tirupati	0	0	2	0	1	0	0	0	0	0	0	3
46	Uttar Pradesh	Mathura	0	1	1	0	1	0	0	0	0	0	0	3
47	Manipur	Imphal	0	0	1	1	1	0	0	0	0	0	0	3
48	Nagaland	Kohima	0	0	1	0	0	0	1	0	1	0	0	3

Sl. No	State	City	Eleven Sectors of Urban Infrastructure											Total No. of Projects
			1 Water Supply	2 Waste Water Management	3 Storm Water and Drains	4 Preservation of Water Body	5 Solid Waste Management	6 Other Urban Transport	7 Roads/Flyover / RoB	8 MRTS	9 Parking	10 Urban Renewal	11 Development of Heritage Areas	
49	Arunachal Pradesh	Itanagar	1	0	0	0	1	1	0	0	0	0	0	3
50	Jharkhand	Dhanbad	1	0	0	0	1	0	0	0	0	0	0	2
51	Jharkhand	Ranchi	1	0	0	0	1	0	0	0	0	0	0	2
52	Assam	Guwahati	1	0	0	0	1	0	0	0	0	0	0	2
53	Pondicherry	Pondicherry	0	1	0	0	1	0	0	0	0	0	0	2
54	Jammu & Kashmir	Jammu	0	2	0	0	0	0	0	0	0	0	0	2
55	Madhya Pradesh	Ujjain	1	0	0	0	0	0	0	0	0	0	1	2
56	Bihar	Bodhgaya	1	1	0	0	0	0	0	0	0	0	0	2
57	Tripura	Agartala	1	1	0	0	0	0	0	0	0	0	0	2
58	Meghalaya	Shillong	1	0	1	0	0	0	0	0	0	0	0	2
59	Gujarat	Porbandar	1	1	0	0	0	0	0	0	0	0	0	2
60	Orissa	Puri	1	0	1	0	0	0	0	0	0	0	0	2
61	Goa	Panaji	1	0	0	0	0	0	0	0	0	0	1	2
62	Sikkim	Gangtok	1	1	0	0	0	0	0	0	0	0	0	2
63	Punjab	Ludhiana	0	1	0	0	0	0	0	0	0	0	0	1
64	Jharkhand	Jamshedpur	0	0	0	0	1	0	0	0	0	0	0	1
65	Chhattisgarh	Raipur	1	0	0	0	0	0	0	0	0	0	0	1
Total			158	112	73	4	45	17	106	21	5	11	7	559

Source: Based on JnNURM Projects Status, 2012