



SHELTER
ASSOCIATES



•Housing the Urban Poor



•Urban Sanitation



•Research & Documentation



•Poverty Mapping

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Methodology for mapping gaps in provision of adequate sanitation to slums as part of Nasik CSP

A Shelter Associates Presentation

Vigyan bhavan, 11th January 2011

Shelter Associates.....

- Indian NGO.
- Established in 1993.
- Architects, planners, and social and community workers.
- Pune, PCMC, Sangli , Aurangabad, Thane, CIDCO, Solapur and Nasik.
- Micro (slum) level to macro (city) level
- Works in collaboration with an informal federation of the poor called Baandhani.



Introducing Baandhani

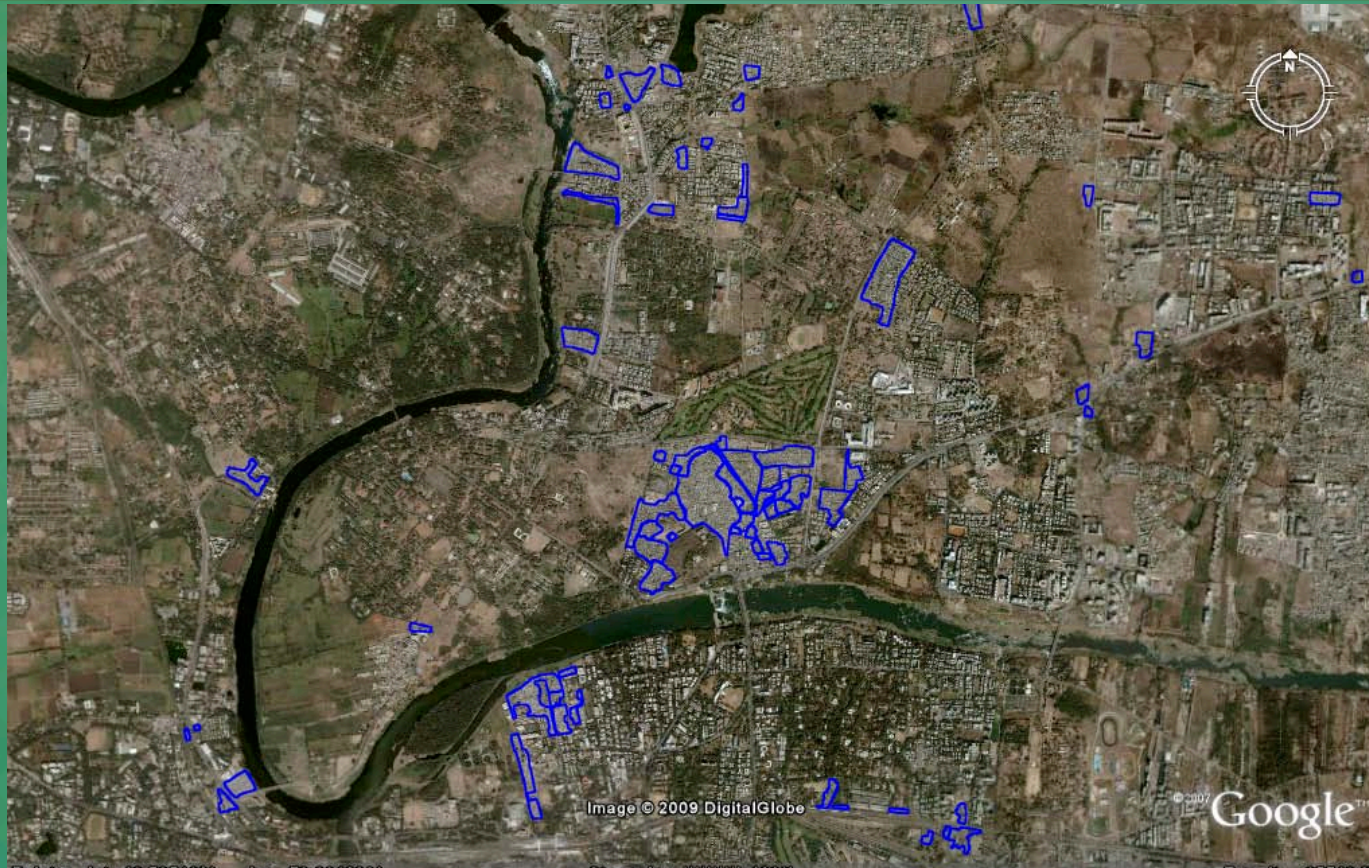
- Collective of women in slums.
- Working to empower poor communities.
- Focus on women.
- Taking charge of settlement and housing improvements.



Micro level work - building federations in settlements.



And at Macro level - Building information system about the city's poor using GIS and remote sensing images



Projects over the years.....



Between 1993 to 2011,
handled a range of projects
from smokeless chullahs to
resettlement



SA's approach to studying Nashik slums as part of CSP

To aim for a citywide approach in ascertaining gaps in service delivery to the slums in Nashik.

To conduct rapid appraisals of slums to capture the ground realities w.r.t existing infrastructure in a few slums in each administrative ward. At least 50% of the population should be covered in large towns.

In view of the tremendous apathy towards using technology that exists in most ULB's and severe manpower constraints, to adopt technology that could be easily transferred to the ULB for at least viewing and updating spatial data.

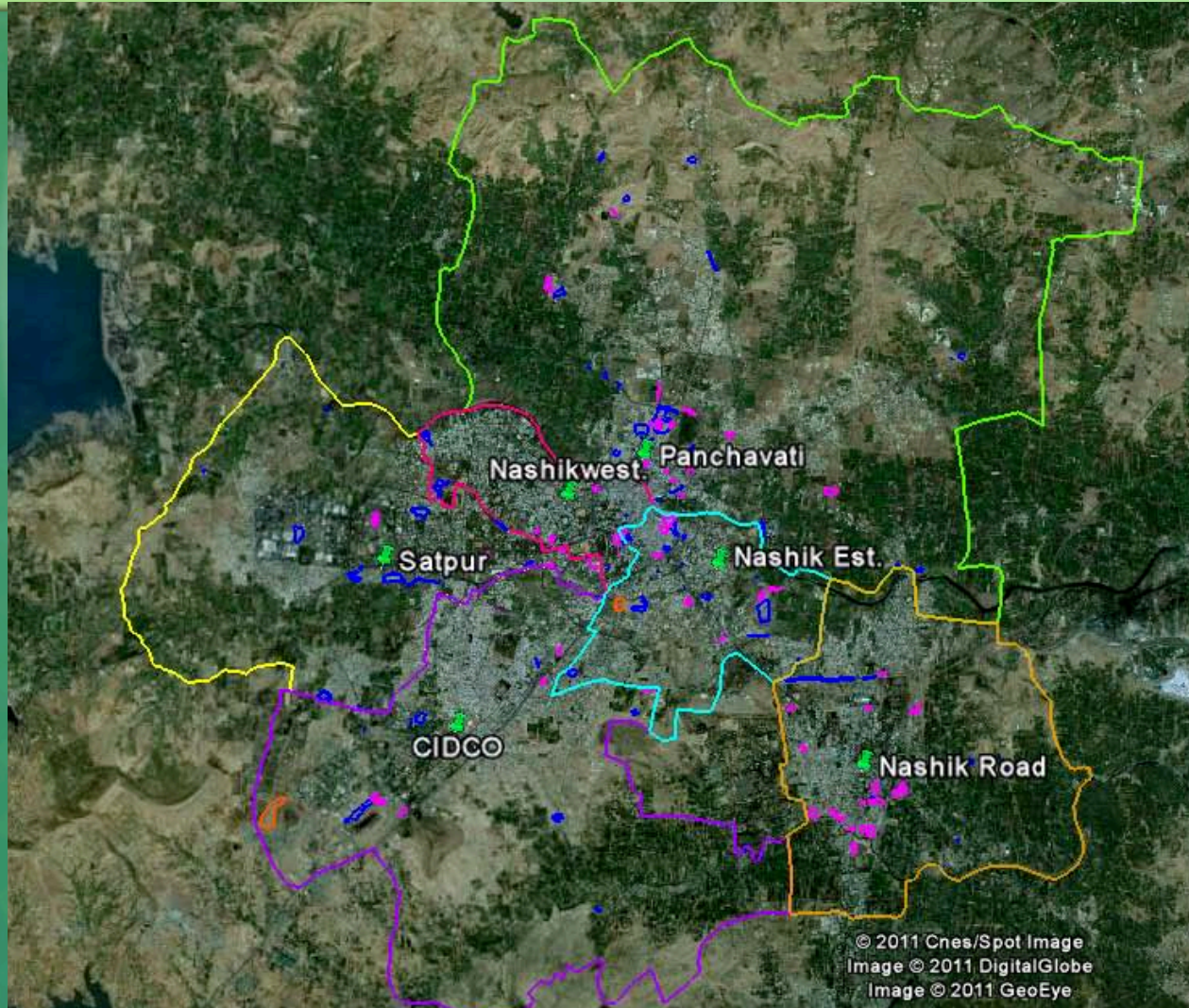
Effective use of spatial mapping to establish transparency and accountability regarding number of slums and their boundaries within the city. In Nashik the number of slums jumped from 104 to 159 after the surveys.

Methodology adopted for studying Nashik slums as part of CSP

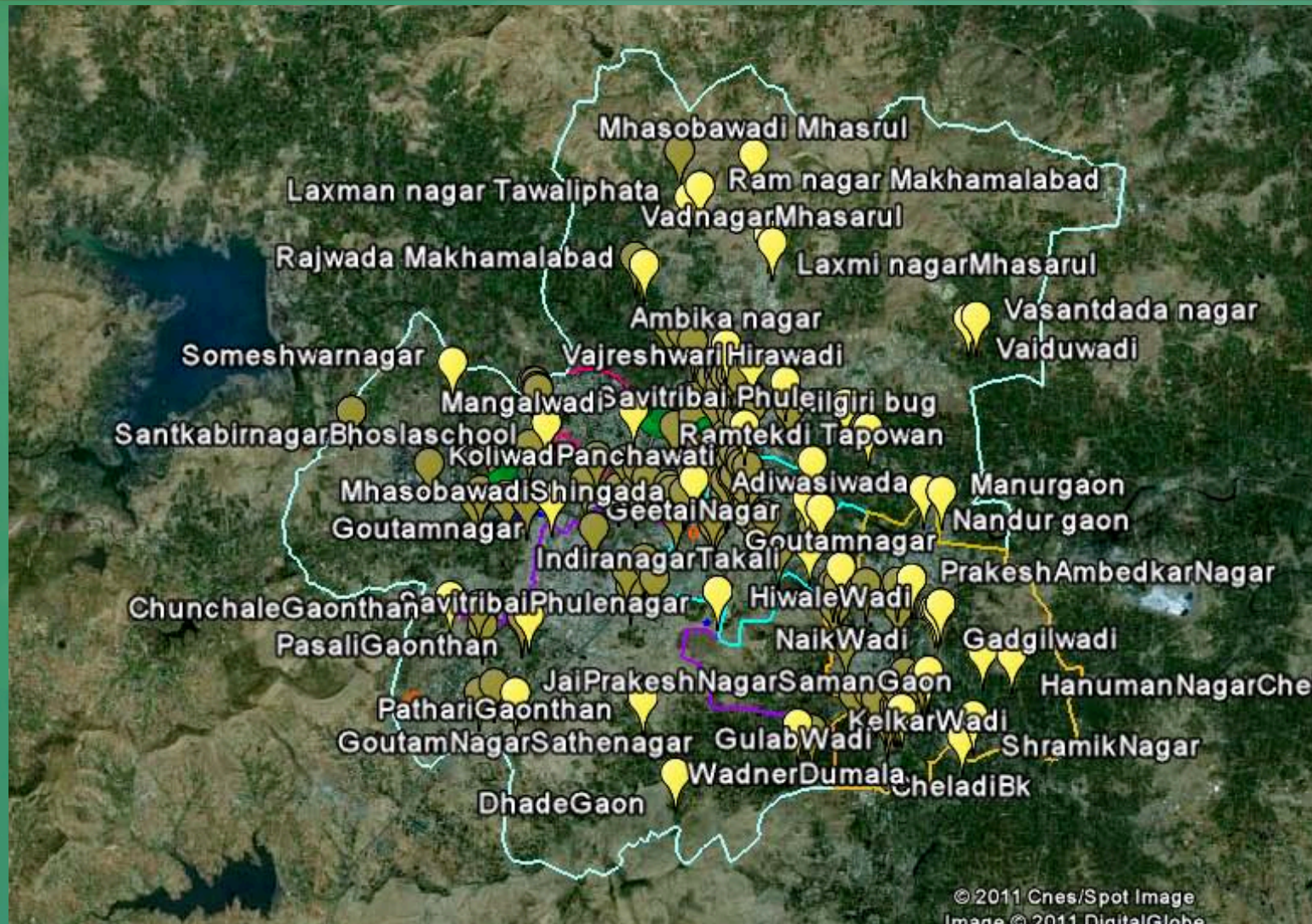
As part of the CSP, SA adopted the following methodology for collecting data on a citywide basis. These methods are listed below:

- All slum boundaries were marked on Google earth.
- All administrative boundaries were also digitized on Google earth. This immediately gave a citywide picture of spread of slums across the 6 administrative zones
- Due to very tight time frame of 3 months (which included data collection, analysis and data presentation) SA decided on selecting representative slums in each of the 6 administrative wards. These covered approximately 45% of the city's poor.
- A rapid walk-through was conducted and all services like existing sanitation blocks, water stand posts, road condition, garbage dumps were marked on good resolution GE maps and observations noted as per the questionnaire that was drawn up.
- The data was compiled as fact sheets and linked to the place-marks on the slum boundaries marked on Google earth. These pop-up factsheets give a good idea of the existing infrastructure situation on the ground for the surveyed slums.
- The GE image was then imported on to the GIS platform and the data attached to each slum for spatial querying

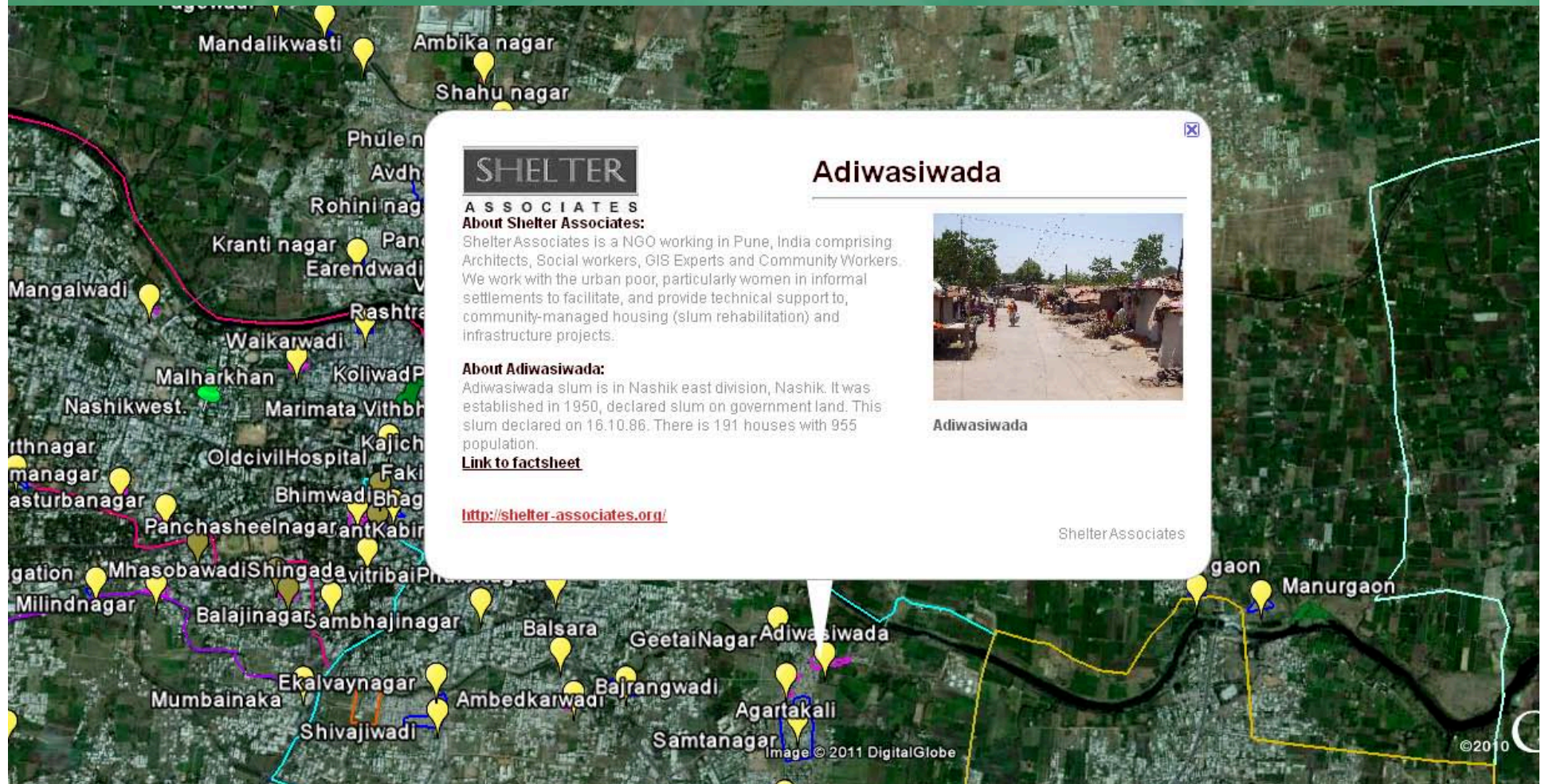
Marking all administrative and slum boundaries on Google earth across the city



Adding place-marks showing names of slums



Each place-mark contains a link to a fact sheet compiled for the slum



SHELTER ASSOCIATES

About Shelter Associates:
Shelter Associates is a NGO working in Pune, India comprising Architects, Social workers, GIS Experts and Community Workers. We work with the urban poor, particularly women in informal settlements to facilitate, and provide technical support to, community-managed housing (slum rehabilitation) and infrastructure projects.

About Adiwasiwada:
Adiwasiwada slum is in Nashik east division, Nashik. It was established in 1950, declared slum on government land. This slum declared on 16.10.86. There is 191 houses with 955 population.

[Link to factsheet](#)

<http://shelter-associates.org/>

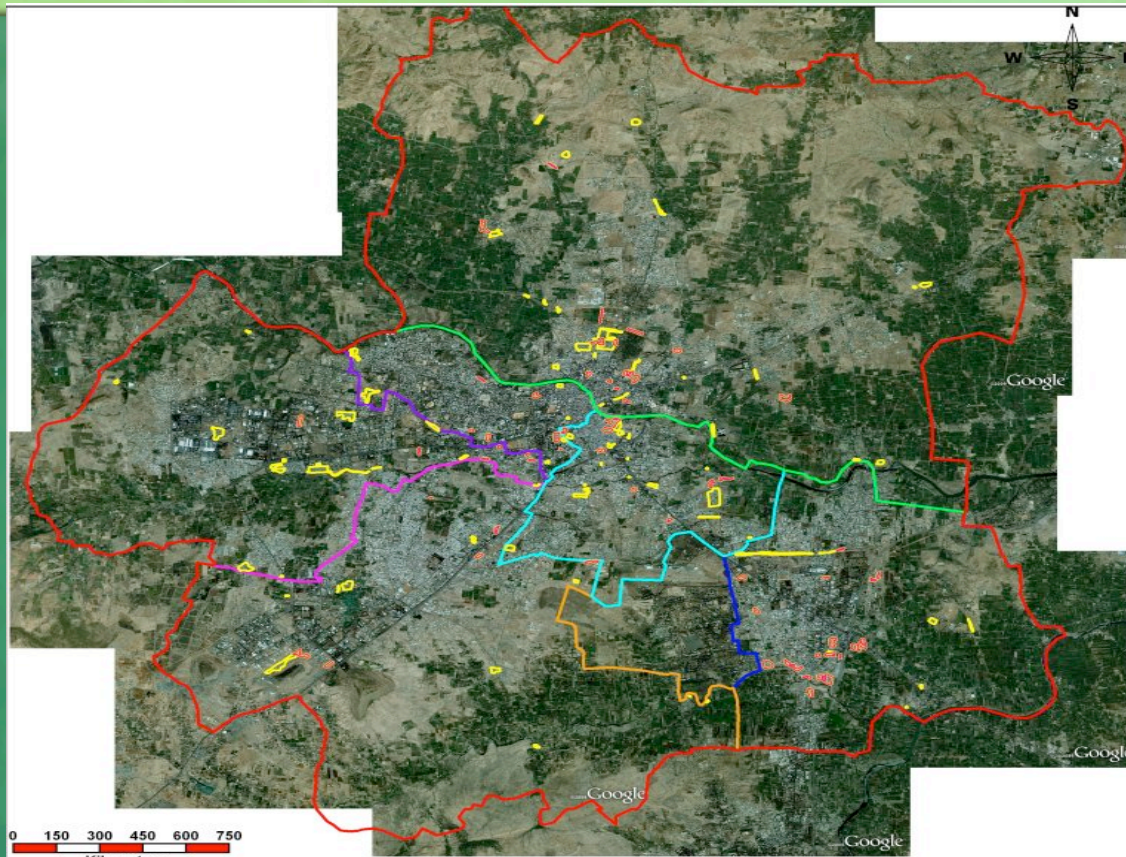
Adiwasiwada

Shelter Associates

Image © 2011 DigitalGlobe

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Distribution of 159 slums across six administrative zones

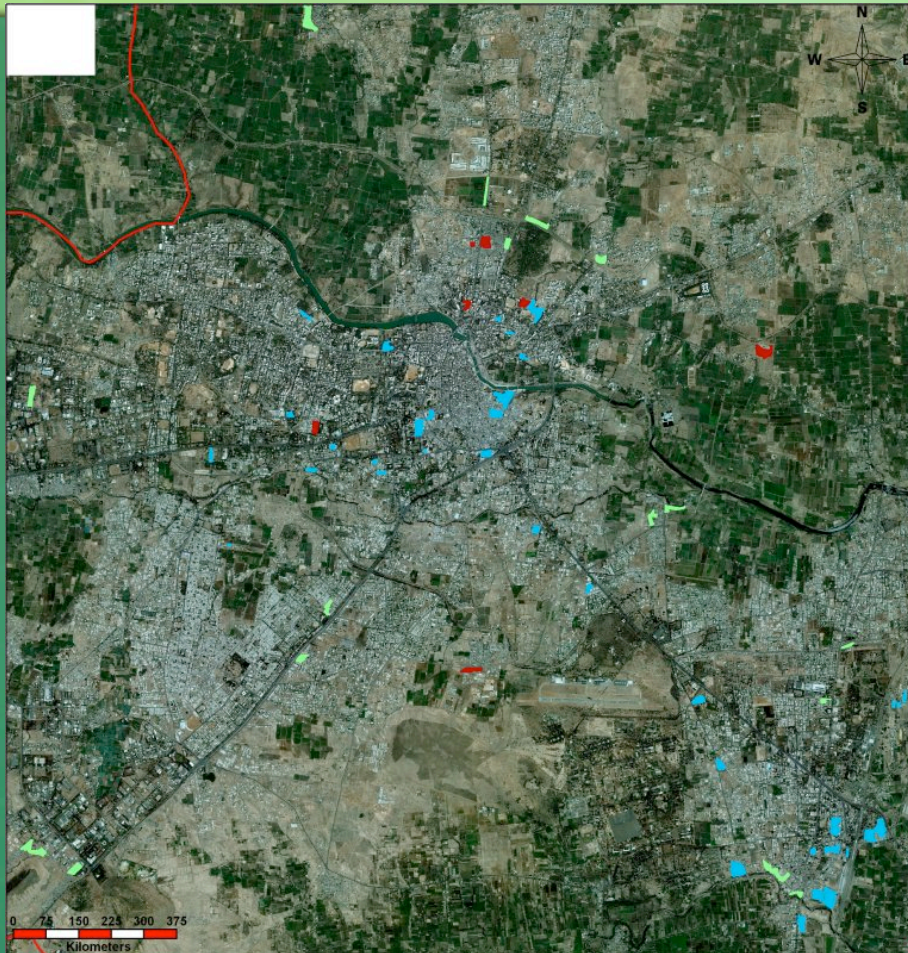


Legend

	NashikRoadDivision		NashikWestDivision		BoundaryNMC
	CIDCODivision		EastDivision		slums (159)
	SatpurDivision		PanchavatiDivision		Survey slums (65)

- The GE image was imported on to the GIS platform and the data attached to each slum for spatial querying

Typical queries across the city on GIS platform



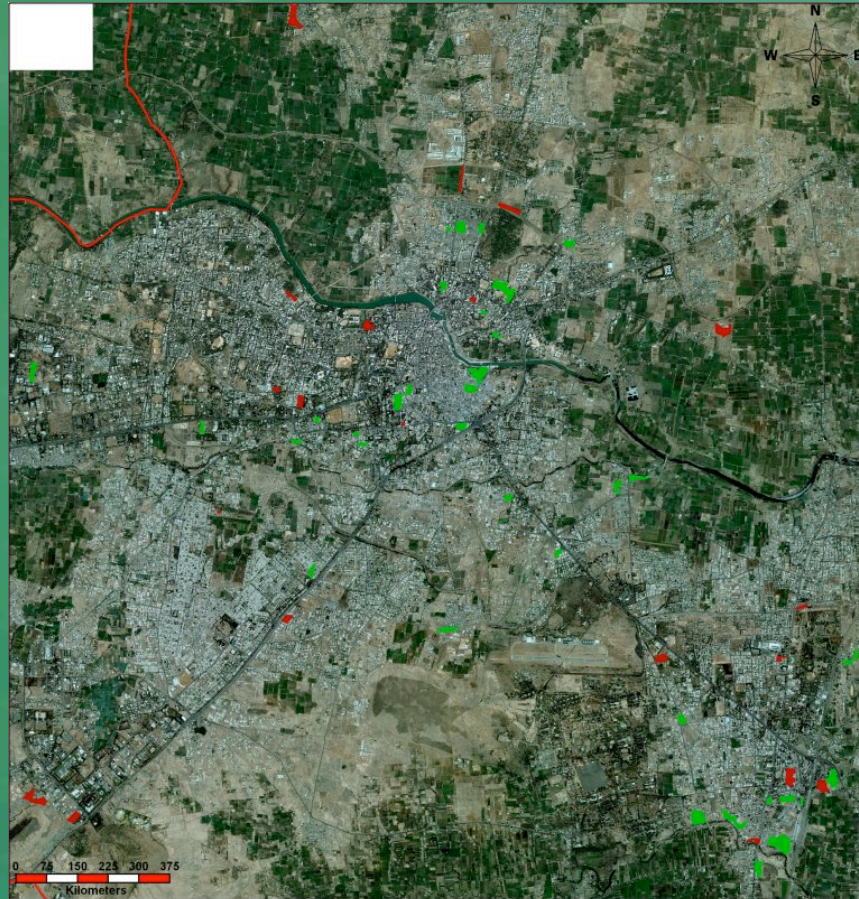
Legend



Land ownership:

38 slums are on privately owned land while the remaining 27 is on government land of which 10 slums are on NMC owned land.

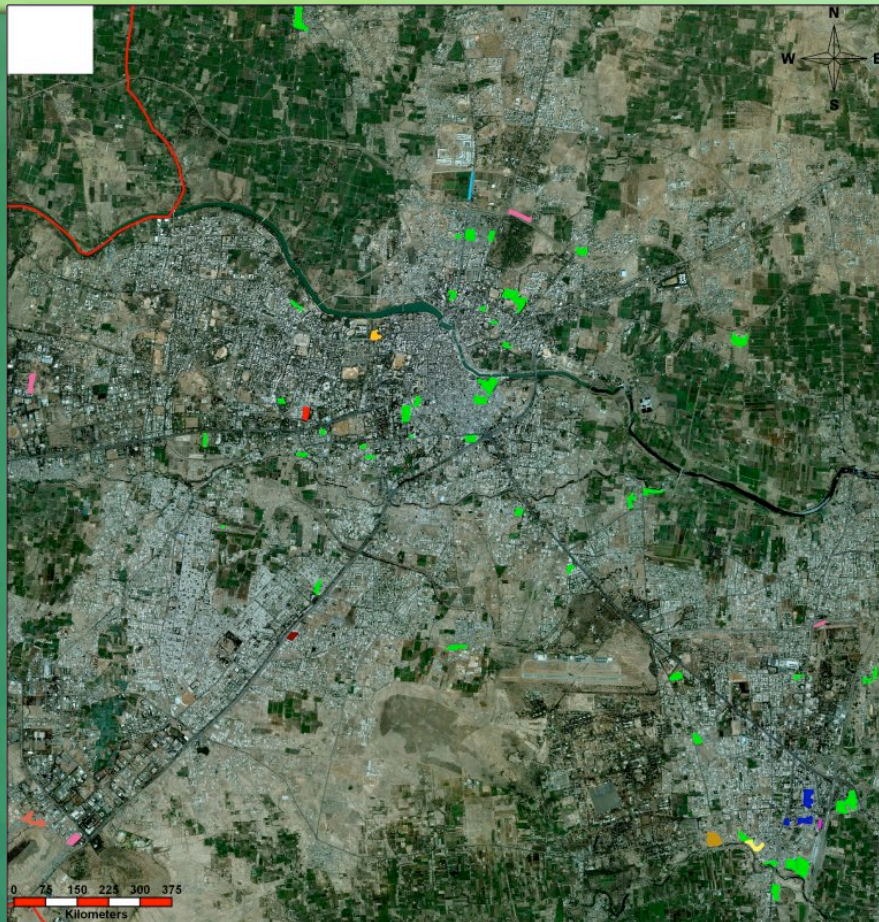
Typical queries across the city on GIS platform



LEGAL STATUS:

Of the 20 slums that are undeclared 9 are on private land and will have to be notified for providing amenities.

Typical queries across the city on GIS platform



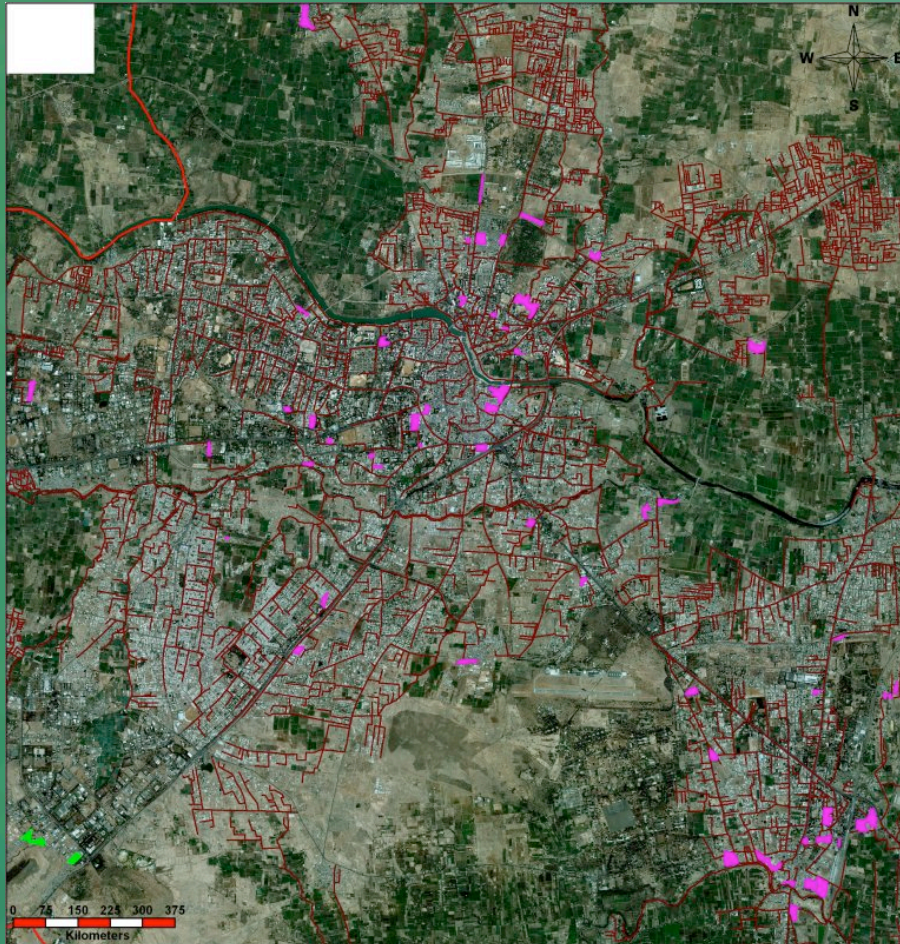
DP RESERVATIONS ON LAND

Of the 50 slums having residential zoning, 9 slums are on NMC land and 32 on private land.


The 9 slums on NMC land would be ideal location for in-situ BSUP projects under JNNURM

Currently, 13000 tenements are being built under BSUP which would be primarily relocation sites

Typical queries across the city on GIS platform



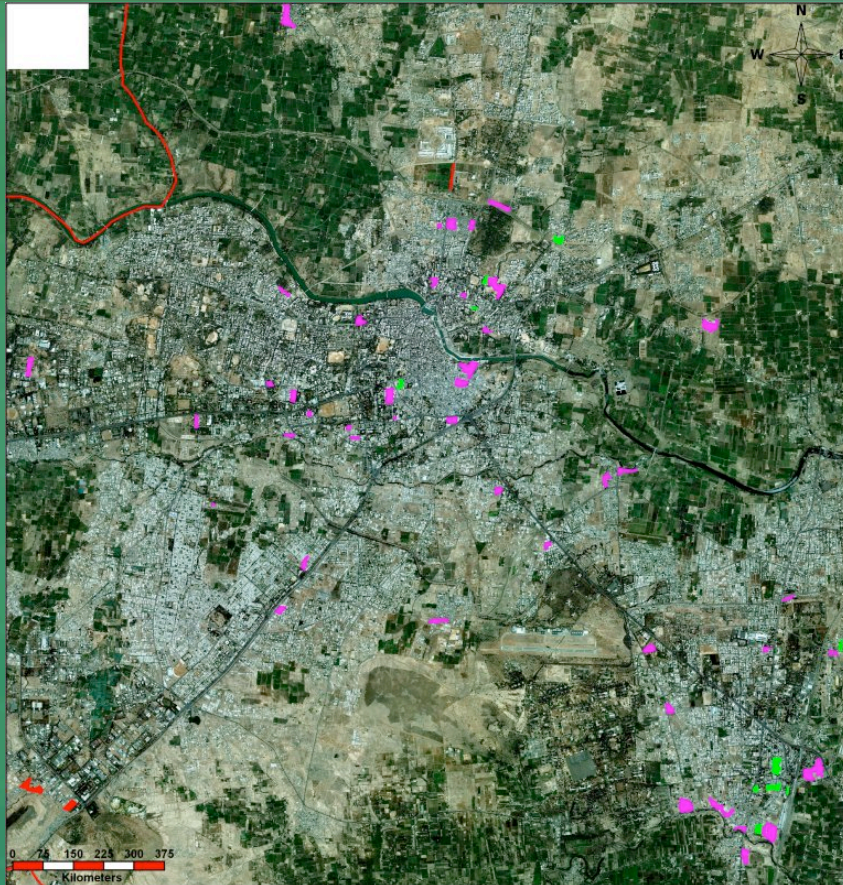
Legend

 Yes (62)  No (3)


ACCESS TO MAIN SEWER NETWORK

62 out of 65 slums are located off main sewer networks. However since these are not extended within the settlements, most slums have community toilets

Typical queries across the city on GIS platform



Legend

	In Slum (51)		None (4)
	Outside (10)		

The 4 slums without access is largely due to lack of any sewer networks in the vicinity.

Of the 10 slums that have access to toilet blocks outside, 2 are partially covered by individual toilets as they were part of the VAMBAY scheme

Typical queries across the city on GIS platform



Legend

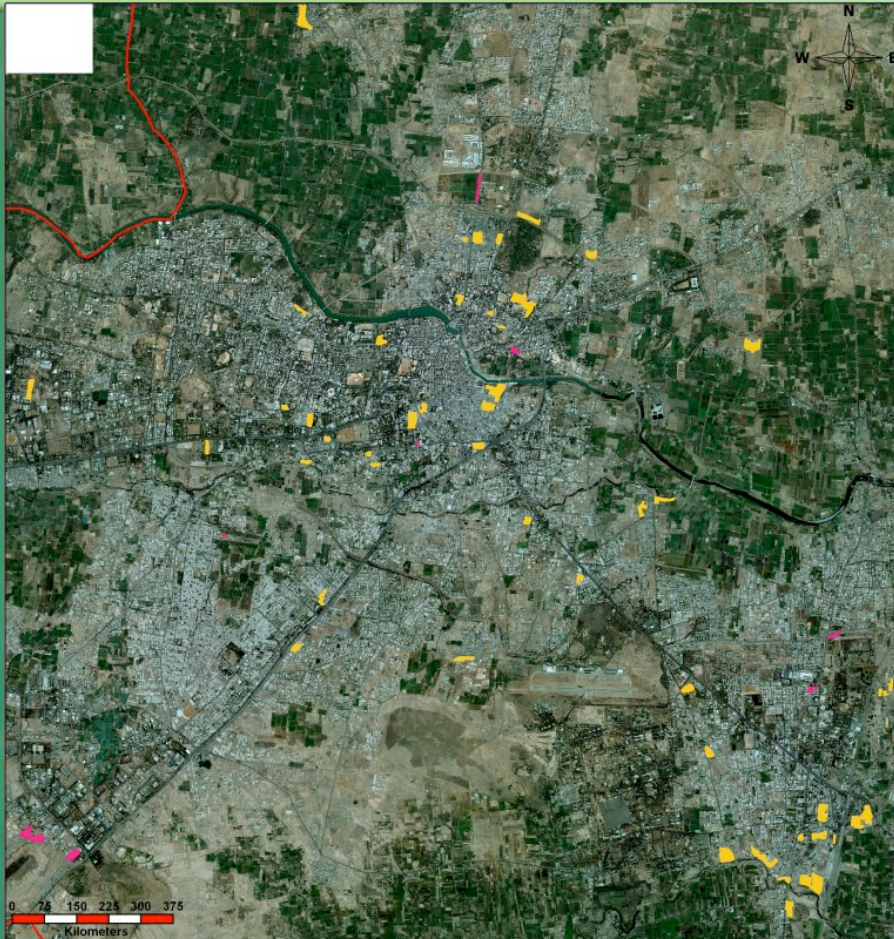
	Septic tank (30)		Biogas (1)		Survey slums (65)
	City sewer line (43)		toiletblock (74)		

32 toilet blocks out of the 74 blocks spread across 61 slums are connected to either septic tank or biogas as there were no sewer networks at the time of construction.

Effluent from 7 toilet blocks are discharged into the Godavari, Nasardi rivers or adjoining canal.

Of the 74 blocks, 14 are on a pay and use basis, 1 is by the community and the remaining are maintained by the NMC. The average toilet to person ratio is 1:61

Typical queries across the city on GIS platform



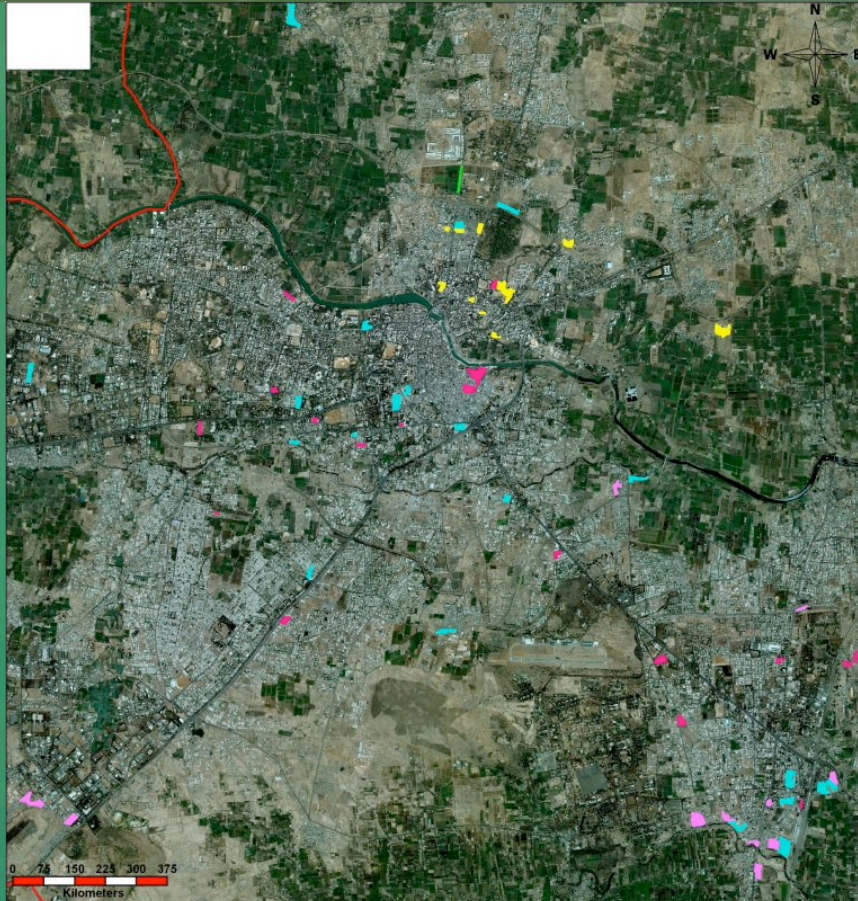
Legend



There is fairly good supply of water in slums individual connections ranging from 30%-100% coupled with community stand posts and hand pumps across 56 slums out of 65. The water pressure is medium in most places.

The other slums have either group connections, community stand posts or hand pumps

Typical queries across the city on GIS platform

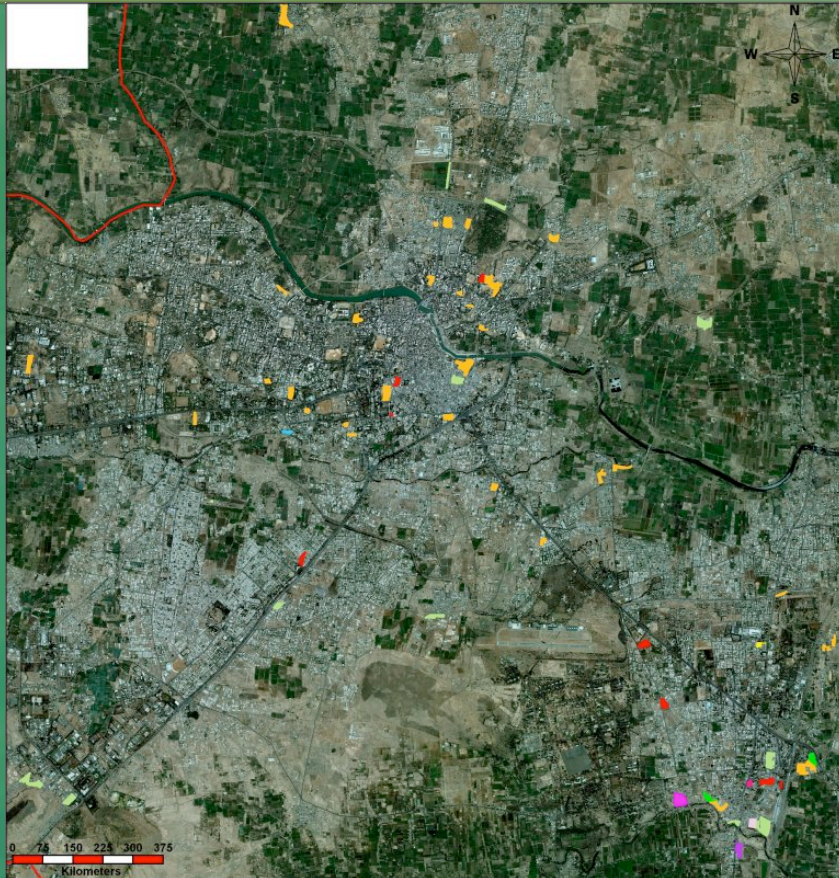


Legend

	Underground (11)		None (1)		Open (13)
	Partial Covered (21)		Covered (19)		

63 out of 65 have gutters. However the gradient is fairly unsatisfactory in 46 of them leading to flooding during monsoons

Typical queries across the city on GIS platform



The city uses ghanta gadi system for collection of garbage. There are no containers anywhere. 8 slums depend entirely on this while 35 use this in combination with other open spaces 14 slums dump in the open spaces while the others in rivers, open gutters or well.

Drawing up short and long term sanitation strategies in slums across the city

- The complete picture of the settlements across the city is now available to make effective decisions regarding the kind of inputs that are possible. It brings transparency in the process making it less vulnerable to manipulations.
- a menu of options can be drawn up for service delivery to individual slums.
- It can vary from individual toilets, group connections, community toilet, sewerage connection, low cost housing.
- Based on this an action plan for interventions will be drawn up and accordingly implementation can be carried out.